

Starting a conversation: Is there flexibility to adapt Canada's current utility regulation landscape?

Prepared for:

The Canadian Electricity Association



**Canadian
Electricity
Association**

**Association
canadienne
de l'électricité**

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EXECUTIVE SUMMARY

The Canadian electricity sector is undergoing a significant transformation, the effects of which are expected to continue to evolve into the foreseeable future. Five megatrends driving this change can be seen across the country: climate policy is subsuming energy policies, customer expectations are changing, well-defined industry lines are blurring, megaprojects are becoming more challenging, and the Energy Cloud is emerging. It is inevitable that these megatrends will force a reconsideration of the legislative and regulatory frameworks that govern the electricity sector. The primary objective of this paper is to analyze opportunities within the existing legislation and regulatory frameworks to adapt to the current and future changes, and in doing so, start a dialogue about the nature of Canada’s utility regulation landscape and the future of regulatory reform.

Regulatory reform initiatives breakdown into two categories: process reforms and framework reforms. In Canada, Alberta and Ontario are generally regarded as the leaders when it comes to electricity regulatory reform initiatives. For example, both provinces have moved away from traditional cost of service regulation to multi-year formula or incentive-based rate designs. Outside of Canada, jurisdictions that are generally recognized as leaders in terms of regulatory reform initiatives include Great Britain, New Zealand, New York, California, and Hawaii (emerging). In this paper, Navigant briefly analyzes New York’s Reforming the Energy Vision (NYREV) and Great Britain’s Revenue using Incentives to deliver Innovation and Outputs (RIIO) initiatives as international examples of leading regulatory reform.

Navigant identified eleven regulatory levers and actions--which constitute a toolkit-- for regulators to consider when looking to address the changes and disruption facing the electricity industry.

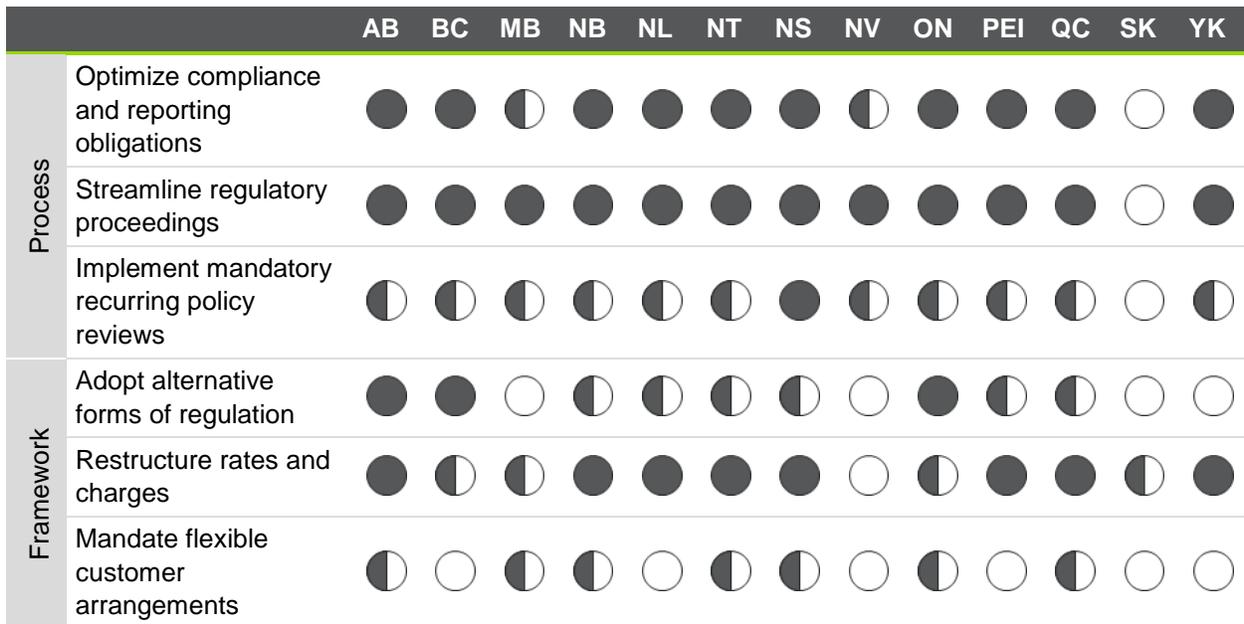
Regulatory Levers and Actions

	Levers	Description
Process	Optimize compliance and reporting obligations	Reduce regulatory burden by eliminating low value and low risk compliance and reporting requirements.
	Streamline regulatory proceedings	Promote negotiated settlements, adopt proportional reviews, strictly limit the scope of reviews and interventions where appropriate.
	Implement mandatory recurring policy reviews	Impose mandatory reviews or sunset clauses for major policies.
Framework	Adopt alternative forms of regulation	Introduce and evolve models of performance-based regulation.
	Restructure rates and charges	Adjust rates structures to reflect current trends and usage patterns and to be responsive to changing technology.
	Mandate flexible customer arrangements	Allow for flexibility in terms of how utilities classify and provide services to different customers.
	Change the interconnection and compensation regime for distributed energy resources	Change the way in which grid-connected and behind the meter distributed energy resources are interconnected and compensated.

	Levers	Description
	Establish alternative treatment for stranded assets	Establish alternatives forms of treatment for stranded assets, for example, accelerated depreciation, separate deferral and recovery accounts, and cost sharing mechanisms.
	Relax the treatment of affiliates	Eliminate low value and low risk affiliate compliance obligations, use penalties and policing to and adopt technology solutions to protect against anti-competitive behaviour.
	Encourage / incentivize applied R&D and technology demonstration	Promote applied R&D and technology demonstration through specific programs and the evolution of the regulatory and utility business model.
Competition	Deem services eligible for full, partial or conditional deregulation	Deem certain activities as competitive, forebear on elements of the utility franchise where appropriate levels of competition exist.

Navigant then evaluated the regulatory permissibility of the toolkit options within each of the thirteen Canadian provinces and territories under the current statutory framework. Regulator permissibility in each of the thirteen regulatory levers varies widely throughout Canada, ranging from Saskatchewan and Nunavut with minimal permissibility to Quebec, Alberta, and Nova Scotia with considerable permissibility. Permissibility is represented graphically using shaded circles, where the extent of the shading represents the extent of the regulator’s discretion under existing legislation.

Permissibility of Regulatory Levers



		AB	BC	MB	NB	NL	NT	NS	NV	ON	PEI	QC	SK	YK
	Change interconnection and compensation regime for distributed energy resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Establish alternative treatment for stranded assets	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Relax the treatment of affiliates	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
	Encourage / incentivize applied R&D and technology demonstration	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Competition	Deem some services eligible for full, partial or conditional deregulation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The Energy Cloud, Navigant's view of the transformation of the power and utilities sector, is characterized by rapid evolution in platform operations and customer offerings. The pace and extent of this forthcoming evolution will vary across jurisdictions depending on factors such as circumstance, pre-existing industry structure, geography, and politics. It is evident from this analysis that each of the provinces and territories are starting from very different positions in terms of adapting to such changes in the foreseeable future. In general, it is evident that regulators have the most flexibility in actions and levers in the process category, followed by framework and competition. Additionally, most regulators also appear to have substantial flexibility in rate design and tariff structure areas in terms of introducing and changing policies. In short, there is some flexibility within the current legislation in most provinces and territories for regulators to adapt in the face of disruptions to the energy sector. Given the variances in the specific circumstances of each jurisdiction, options for adaption and evolution should be evaluated more thoroughly going forward.

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1. INTRODUCTION

This report has four main sections.

1. Introduction: this section highlights the context and objective for the paper.
2. Levers and Actions to Adapt to Change: this section discusses some of the actions taken by electricity utility regulators in Canada and other international jurisdictions to adapt the regulatory landscape to the changing industry structure and outlines a regulator toolkit.
3. Existing Legislation and Opportunities: this section reviews the existing legislative mandate for regulators across Canada and analyzes the potential opportunity for each to explore the actions identified within the toolkit.
4. Conclusions: this section provides overarching conclusions from the research and analysis.

1.1 Context

Globally, the pace and impact of change in the power and utilities sector is unrelenting and Canada is no exception. Five megatrends are driving change in the country's electricity sector. The impact of these megatrends cannot be underestimated, and the tipping points of each are clear.

1. Climate policy is subsuming energy policies: Climate policies are increasingly influencing energy use and the utility sector in Canada.
2. Customer expectations are changing: While once the sole purview of monopoly utilities and retail electricity and natural gas providers, customers are increasingly looking elsewhere for energy solutions.
3. Well-defined industry lines are blurring: Lines between the natural gas, electricity, and liquid fuels industries are blurring as the focus of policy shifts to emissions reductions and climate change, and demand becomes more fungible.
4. Megaprojects are more challenging: Canadian energy megaprojects face major hurdles.
5. The Energy Cloud is emerging: Canada's old energy assets and systems are being replaced. The trend is toward cleaner, more distributed, and smarter infrastructure, which Navigant defines as the Energy Cloud.

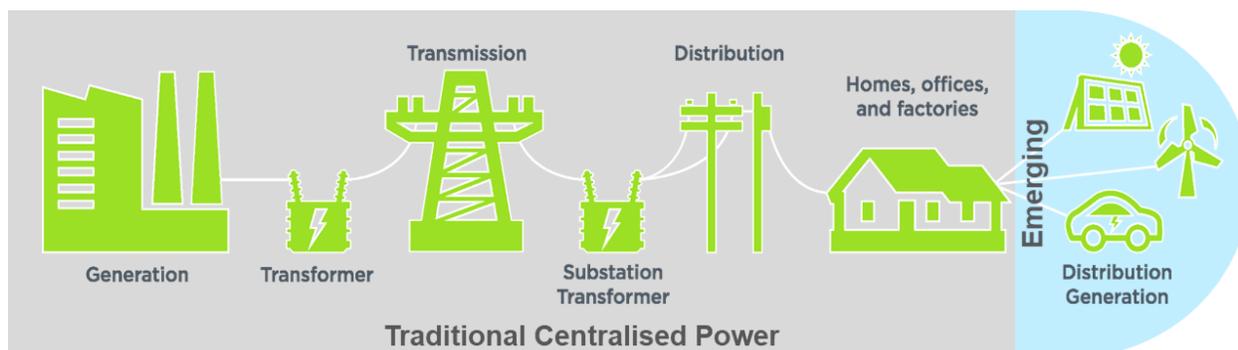
These trends force a reconsideration of the premises upon which the country built the legislative and regulatory frameworks that govern the electricity sector. Consider just three of the many likely outcomes of these megatrends and their impact on the electricity sector in Canada.

1. Declining average end-use consumption: At a time when a significant amount of electricity infrastructure in Canada is reaching the end of its useful life, the average electricity consumed by an individual or business is declining. Electrification (of transportation and other end-uses) could create an inflection point, but the timing and extent is uncertain. This has a direct impact on how capital investments are planned, how costs are recovered, and how companies generate earnings. As customers use less electricity are they going to be happy paying more?

2. Proliferation of distributed energy resources: The traditional electricity system model, where power is produced by large centralized generation facilities, optimized and transmitted across a complex and highly managed transmission infrastructure, and then distributed to customers over a largely unmanaged distribution system is being turned on its head. Smaller scale distribution generation resources (e.g. solar) are now more competitive from a cost perspective. This change requires a much more sophisticated distribution system to manage bi-directional flows and an increasingly more complete network of customer end-points and generation and storage resources. Who pays for the investments required to integrate these resources? How are these resources integrated without creating massive stranded asset issues?

3. Rising levels of competition: For over a century the centralized electricity grid has been the main, if not only, realistic source of electricity for most Canadians. As the economics and technical capabilities of electricity storage and distributed energy resources improve, the central grid and the regulated utilities that own and operate it will face increased competition from new energy solution providers. As customers reduce their dependence on the grid, or in the extreme case, defect from the grid altogether, the fundamental nature of the industry as a natural monopoly could shift. What happens to the regulated utilities? How does the value of the grid change? How are the costs that are embedded within this regulated companies recovered? How is this new, more competitive, industry regulated?

Figure 1 – Current and Emerging Electricity System



None of these outcomes will occur immediately. They will take different forms and materialize at a different pace across Canada, based on the underlying industry structure in each province or territory. That said, although difficult to characterize specifically, there is a growing consensus amongst industry stakeholders that the long-term solutions to meet the needs of electric power consumers will look very different from the traditional solutions used today.

If the industry structure is different, and the customer solutions are different, the legislative and regulatory frameworks will likely also need to adapt. This paper is a response to these issues.

1.2 Objective

The objective of this paper is start a dialogue and to explore the opportunities that exist within the existing legislation for the regulatory framework to adapt to the changes in the electricity industry. There will be lots of debate around the extent to which the findings and ideas in this paper are immediately applicable and the extent to which they are necessary today given the state of disruption in each province and territory. The debate and discussion is encouraged.

Utility regulators in Canada are creatures of statute. Regulatory agencies do not make law, they regulate under existing law. Provincial and territorial legislation establishes the role and responsibility of the regulators and the principles upon with the regulation is established.

The nature of the governing legislation (e.g. public utility board acts, utilities commission acts) is different in each province or territory, in part because of the varied industry structures (i.e. vertically integrated Crown Corporation versus unbundled Crown Corporations versus unbundled private corporations). There are also additional pieces of legislation (e.g. electricity acts, natural gas acts) that frame the role of the regulatory agency. Absent new policy, these laws can limit a regulatory agency’s ability to respond to the changing nature of the industry.

Figure 2 – Canadian Utility Regulatory Body Governing Legislation



1.3 Approach

The approach used to develop the content for this paper is outlined in in Figure 3 below. The work was organized around five core tasks aimed at:

- Identifying levers or actions regulators could take to adapt the structure of industry regulation;
- Understanding the existing legislation that governs the regulator in each jurisdiction; and
- Assessing whether the existing legislation enables or impedes the application of the levers identified.

Figure 3 – Outline of Approach

Task	Description
1	Review historical precedents as well as recent activity in Canadian and international jurisdictions to identify possible levers or actions that adapt the regulatory structure of an evolving industry.
2	Review the governing legislation for regulators across Canada.
3	Identify elements within the governing legislation that enable or impede adaptation.
4	Assess, for each jurisdiction, whether the levers and activities identified in Task 1 are potentially available to the regulator under the existing legislative framework.
5	Draw high-level conclusions about the current state of Canadian utility sector legislation and the inherent flexibility that regulators have to adapt to an evolving industry.

2. LEVERS AND ACTIONS TO ADAPT TO CHANGE

Where regulators demonstrate an informed grasp of the evolution of the electric utility industry, two domains are the primary focus of attention:

- **PROCESS:** The nature of rate setting and regulatory process, and
- **FRAMEWORK:** The extent to which applied R&D, technology demonstration, and business model innovation, is championed and supported.

A third domain that is emerging in a select number of jurisdictions is:

- **COMPETITION:** Recognition that an increasingly competitive environment is arising around certain traditional monopoly utility activities.

This last domain is likely to increase in prominence if the experience from other industries (e.g., rail, airlines, telecommunications) provides an indication.

While a short list of leading jurisdictions exists, in most cases regulatory reform initiatives are in their infancy and best practices have yet to emerge.¹ Some jurisdictions are examining, or initiating, large-scale regulatory reform initiatives, while many others are taking smaller more discrete actions to adapt the regulatory framework to address specific challenges.

2.1 Lessons from Canada

In Canada, Alberta and Ontario are generally recognized as leaders in terms of regulatory reform initiatives.

With respect to the process domain, Alberta and Ontario have both adopted the use of negotiated settlements to reduce the number of full regulatory proceedings or reduce the number of issues that are dealt with during full regulatory proceedings. Both jurisdictions have established standard compliance reporting requirements for regulated utilities. Furthermore, Ontario is now in the process of exploring a proportional response regulatory model, where the level of review and scrutiny of a utility's rate application is tied to the historical performance of that utility against several performance metrics.

Rate / tariff design is also evolving in both jurisdictions. In Alberta, the regulator receives applications from the utilities related specifically to cost allocation and rate design (Phase II applications), which are separate and distinct from the applications that establish the revenue requirement (Phase I applications). Utilities can propose new rate classes or modify existing rate classes. Furthermore, utilities can propose alternative tariff structures or terms and conditions of service. For the most part, this has not led to hyper innovative outcomes, but the process is in place and continues to evolve. Ontario takes a slightly different approach. Utilities can propose changes to rate design as part of their general rate applications. In addition the regulator has initiated separate policy proceedings to review rate design more broadly, and in the case of the distribution sector is transitioning some rate classes to fully fixed tariffs.

¹ For example, in Great Britain, regulatory reform has played out in the electric utilities industry for over two decades. The RIIO model (namely setting Revenue using Incentives to deliver Innovation and Outputs) may be one possible benchmark that is effectively driving business model transformation. RIIO is a performance-based regulation model that focuses not just on operational efficiency, but also capital expenditure performance (capital efficiency), customer experience and innovation.

In terms of framework domain, the regulators in both jurisdictions have moved away from relying on traditional cost-of-service regulation to determine utility rates. Instead they rely on a combination of cost-of-service and multi-year performance- or incentive-based regulation. In both instances, the primary performance metric is annual operating cost, and utilities and customers share the benefit of performance improvement (i.e. a reduction in operating cost).

The changes to the regulatory process and framework in Alberta and Ontario have been largely regulator-led and implemented without legislative changes.

2.2 Lessons from International Jurisdictions

Outside of Canada there are several jurisdictions that are generally recognized as leaders in terms of regulatory reform initiatives, including Great Britain, Victoria, New South Wales, New Zealand, New York, and California among others. Hawaii is also emerging as a leading jurisdiction, as it attempts to tackle some of the most challenging questions related to regulatory reform.

As part of this research paper, two jurisdictions outside of Canada were specifically analyzed. New York, with its renowned New York Reforming the Energy Vision (NYREV) process and Great Britain with its setting Revenue using Incentives to deliver Innovation and Outputs (RIIO) framework.

New York

In 2013, the New York Public Service Commission (NYPSC) laid out a plan to fundamentally change utility regulation in the state to meet the needs of the evolving electricity sector. The plan, titled 'Reforming the Energy Vision' (NYREV), was focused at addressing challenges such as:

- Catastrophic weather events (Superstorm Sandy);
- Aging infrastructure of the transmission and distribution system;
- Increased competitiveness of renewable and distributed energy resources; and
- Increased system security and resiliency needs.

The NYPSC identified that the current electrical system was not performing as efficiently as it could, and would not be able to meet the needs of the future electrical grid, which would have a higher level of renewable and distributed energy resource penetration. Furthermore, the New York electrical system had an oversized bulk power system and transmission and distribution losses were nearing nine percent. The NYREV plan identified five policy objectives:

- Customer knowledge and tools that support effective management of their total energy bill;
- Market animation and leverage of ratepayer contributions;
- System wide efficiency;
- Fuel and resource diversity; and
- System reliability and resiliency.



Reforming the Energy Vision



Regulatory Reform

WHAT

- Kicked off in 2013, NY Reforming the Energy Vision (REV) is a comprehensive strategy for building a clean, resilient, and more affordable energy system

STATUS

- In late 2016, NY established a 50% renewables mandate for 2030; since NY REV launched, 888 MW of solar capacity has been installed in NY state
- NYSEDA has launched REV Connect, a digital portal aimed at connecting businesses and electric utilities, and fostering the development of new ideas and profit models between them
- NY issued a DER compensation structure based on monetary crediting for net hourly electricity exported to the grid

HOW

- NY REV aims to create a more diversified grid and business model that better integrates customer and third parties
- Utilities are ultimately intended to function as Distributed System Platform (DSP) providers, with roles in market and grid operations, and integrated system planning
- Traditional earnings mechanism will be supplemented with return on DER investments, market-based earnings in role as DSP provider, and potentially monetized performance metrics

The major concept behind the NYREV initiatives, is that distribution utilities will transition from owning and operating a passive distribution network to facilitating and orchestrating distributed energy resources connected to the network. In this environment, the NYPSC concluded that the traditional cost of service model for rate regulation would no longer be sufficient and a new rate regulation model must be developed. The model that was chosen was a form of performance based ratemaking, which links a portion of the distribution utility's revenue to various performance metrics and encourages distribution utilities to generate revenue from non-traditional services.

The following are key takeaways and discussion points from the experience in New York with REV to-date:

- A critical challenge to this undertaking is creating a regulatory environment that enable a utility to pursue a solution that simultaneously increases its earnings and reduces cost to consumers;
- Since the pace of market and technology evolution is unpredictable, the regulatory environment needs to be flexible and adaptable;
- Adding new market-based revenue for utilities is in the public interest since it can help mitigate rate pressure;
- Utility investment in traditional infrastructure will continue to be required, hence regulatory reform must be prudently balanced between the present and the future;
- Positive incentives should be used to stimulate a market in the early stages, and negative adjustments can be imposed as required to accelerate progress; and
- Determining localized pricing for distributed energy resources is a rigorous and complex process and sufficient resources, expertise and lead time must be considered.

Great Britain

The Office of Gas and Electricity Markets (Ofgem) is the regulator of electricity and gas network companies in Great Britain. While there are several interesting facets to the Ofgem’s regulation of gas and electricity network companies, this analysis focuses on an initiative called Innovation Link, which the Ofgem introduced to address the growing need to test and pilot new business models in the electricity sector. The idea was to get in front of the disruption by creating a ‘regulatory sandbox’ for businesses to work in, without the traditional regulatory restrictions and burden.

Regulatory complexity was viewed as barrier to innovation in the electricity sector in Great Britain, particularly for potential innovators who come from outside of the sector. Further, high entry thresholds were a barrier for proof of concept trials of unproven innovations.

In response, in late 2016, the Ofgem set up a dedicated service to support innovators, known as the Innovation Link. This service was modelled in part on the financial services and markets regulator’s (the Financial Conduct Authority) Innovation Hub. Further details regarding the Ofgem’s Innovation Link program are shown below.



WHAT
Ofgem’s Innovation Link aims to be a ‘one stop shop’ for energy innovators providing:
Fast, frank feedback (non-binding advice) to help innovators:

- Understand and navigate the energy sector and regulation
- Understand the regulatory implications of their business models
- Identify options for how their business model could work within today’s regulatory arrangements.

A regulatory sandbox
Enable innovators to undertake proof of concept trials when their innovative product, service, or business model does not readily fit with existing regulatory arrangements

HOW
To qualify for a regulatory sandbox, an innovation must:

- Be genuinely innovative
- Have potential for consumer benefit & protection
- Regulatory barrier inhibits trial

The regulatory sandbox is not:

- Permanent change to policy / regulation
- Mechanism to trial out new regulations
- Route to lobby for change

What form might a sandbox take?

- Bespoke guidance / interpretation determination
- Guidance on compliance / non-enforcement comfort
- Derogation / exemption from regulatory requirements

STATUS

Sandbox 1 (early 2017)

30 expressions of interest, 22 found to be able to operate within existing regulatory arrangements.

Successful applications

- A consortium led by EDF Energy R&D UK and including Electron, PassivSystems, Repowering London and University College London – trialing a peer-to-peer local energy trading platform. The platform aims to allow residents in urban areas to source their energy from local renewables.
- Empowered – trialing a local peer-to-peer energy trading scheme. The trial is aimed at enabling consumers to trade electricity directly with each other and yield benefits for the local community and the wider electricity system.
- Ovo Energy – trialing VCharge, an innovative tariff supported by smart home technology. The trial product is designed to enable lower bills and warmer homes for customers with storage heaters who are currently limited to legacy tariff options, whilst also enabling grid balancing capabilities.

Results from Sandbox 2 (late 2017) available soon.

The following are key takeaways and discussion points from the experience in Great Britain with Ofgem's Innovation Link to-date:

- Incremental changes and small initiatives (such as Innovation Link) can help to advance regulatory reform without drastically impacting the sector;
- Such initiatives can help regulators to understand emerging trends in the sector and identify areas in which regulation may need to adapt to sustain innovation;
- In addition to smaller initiatives, a phased approach can help to mitigate risks involved with the initiatives and facilitate lessons learned for subsequent phases.

2.3 Regulatory Toolkit

Several levers and actions are emerging that regulators can use to adapt the regulatory landscape. These levers and actions were identified from the jurisdictions discussed above, as well as from the experiences of other industries that have faced similar types of disruption as the electricity industry faces today. These levers and actions fall into the three domains: process, framework, and competition. Regulators should consider these levers and actions as part of a toolkit of options to adapt the regulatory landscape to the address the changes and disruption facing the electricity industry.

Figure 4 – Regulatory Levers and Actions

	Levers	Description
Process	Optimize compliance and reporting obligations	Reduce regulatory burden by eliminating low value and low risk compliance and reporting requirements.
	Streamline regulatory proceedings	Promote negotiated settlements, adopt proportional reviews, strictly limit the scope of reviews and interventions where appropriate.
	Implement mandatory recurring policy reviews	Impose mandatory reviews or sunset clauses for major policies.
Framework	Adopt alternative forms of regulation	Introduce and evolve models of performance-based regulation.
	Restructure rates and charges	Adjust rates structures to reflect current trends and usage patterns and to be responsive to changing technology.
	Mandate flexible customer arrangements	Allow for flexibility in terms of how utilities classify and provide services to different customers.
	Change the interconnection and compensation regime for distributed energy resources	Change the way in which grid-connected and behind the meter distributed energy resources are interconnected and compensated.
	Establish alternative treatment for stranded assets	Establish alternatives forms of treatment for stranded assets, for example, accelerated depreciation, separate deferral and recovery accounts, and cost sharing mechanisms.
	Relax the treatment of affiliates	Eliminate low value and low risk affiliate compliance obligations, use penalties and policing to and adopt technology solutions to protect against anti-competitive behaviour.
	Encourage / incentivize applied R&D and technology demonstration	Promote applied R&D and technology demonstration through specific programs and the evolution of the regulatory and utility business model.
Competition	Deem services eligible for full, partial or conditional deregulation	Deem certain activities as competitive, forebear on elements of the utility franchise where appropriate levels of competition exist.

In the sections that follow, the permissibility of these levers and actions is reviewed in the context of the existing legislation that governs regulator activities in Canada.

3. EXISTING LEGISLATION AND POTENTIAL OPPORTUNITIES

Each Canadian province and territory has a unique electricity industry structure, and as such has a unique legislation and regulation. The industry structure, governing legislation, and primary regulator in each province and territory are summarized in the table below.

Figure 5 – Industry Structure, Legislation, and Regulator

Jurisdiction	Industry Structure	Legislation Reviewed	Regulator
Alberta	Unbundled investor and municipal owned corporations, competitive generation and retail segments	Electric Utilities Act, Alberta Utilities Commission Act, Renewable Energy Act, Hydro and Electric Energy Act	Alberta Utilities Commission
British Columbia	Vertically integrated crown corporations and investor owned corporations	Utilities Commission Act, Clean Energy Act	British Columbia Utilities Commission
Manitoba	Vertically integrated crown corporation	Public Utilities Board Act, Manitoba Hydro Act, Efficiency Manitoba Act, Crown Corporation Governance and Accountability Act	Manitoba Public Utilities Board
New Brunswick	Vertically integrated crown corporation	Energy and utilities Board Act, Electricity Act	New Brunswick Energy and Utilities Board
Newfoundland & Labrador	Unbundled investor owned and crown corporations	Public Utilities Act, Electrical Power Control Act, Hydro Corporation Act	NL Board of Commissioners of Public Utilities
Northwest Territories	Unbundled investor owned and crown corporations	Public Utilities Act, Northwest Territories Power Corporation Act, Northwest Territories Hydro Corporation Act	Northwest Territories Public Utilities Board
Nova Scotia	Vertically integrated investor owned corporation	Public Utilities Act, Electricity Act, Nova Scotia Power Privatization Act, Electricity Efficiency and Conservation Restructuring Act, Electricity Reform Act, Electricity Plan Implementation Act	Nova Scotia Utility and Review Board
Nunavut	Vertically integrated crown corporation	Utility Rates Review Council Act, Qulliq Energy Corporation Act	Utility Rates Review Council (advisory only); Government of Nunavut

Jurisdiction	Industry Structure	Legislation Reviewed	Regulator
Ontario	Unbundled crown corporations, investor owned and municipal corporations, partially competitive generation and retail segments	Electricity Act, Ontario Energy Board Act, Green Energy and Green Economy Act	Ontario Energy Board
Prince Edward Island	Unbundled investor owned and crown corporations	Electric Power Act, Island Regulatory and Appeals Commission Act, Energy Corporation Act, Renewable Energy Act	Island Regulatory and Appeals Commission
Québec	Vertically integrated crown corporation	Act respecting the Régie de l’énergie, Hydro Québec Act, Act respecting Transition Énergétique Québec	Régie de l’énergie
Saskatchewan	Vertically integrated crown corporation	Crowns Corporations Act, Power Corporation Act	Rate Review Panel (advisory only); Government of Saskatchewan
Yukon	Unbundled investor owned and crown corporations	Public Utilities Act, Yukon Development Corporation Act	Yukon Utilities Board

Utility regulators fulfill several functions. These functions are summarized in the table below.

Figure 6 – Regulatory Functions

Core Function	Description
License Utilities	Does the regulator approve the license or permits to operate an electric utility?
Service Territory	Does the regulator determine the service territory in which the electric utility operates in?
Leave to Construct	Does the regulator approve leave to construct for assets related to electric utilities?
Revenue Determination	Is the regulator responsible for approving the revenue requirements for electric utilities?
Rate Design	Is the regulator responsible for approving all the components of rates for consumers?
Codes & Rules	Is the regulator responsible for publishing and enforcing codes and rules as they apply to electric utilities?
Monitor Performance & Compliance	Does the regulator monitor performance of electric utilities, and does the regulator carry out enforcement activities such as revoking licenses or issuing fines?

Core Function	Description
Adjudication & Public Participation	Does the regulator arbitrate public rate hearings or stakeholder consultations about the electric utilities and events that may impact consumers?
Affiliate Regulation	Is the regulator responsible for regulating electric utility affiliates?
M&A and Ownership Changes	Is the regulator responsible for mergers, acquisitions, divestures or ownership changes?
Implement Government Reform & Policies	Does the regulator help implement government policies in relation to electric utilities?
Innovation & Modernization	Does the regulator help to drive innovation and modernization of the electrical grid?

Electric and gas utility policy is a provincial domain, as a result, while there are some common characteristics, there is considerable variability in the functions that regulators across Canada are responsible for executing. This variability is illustrated in the table below.

Figure 7 – Core Functions of Canadian Regulators²

Functionality	AB	BC	MB	NB	NL	NT	NS	NV	ON	PEI	QC	SK	YK
License Utilities	☑	✓			✓	✓	✓		✓	☑			✓
Service Territory		☑			✓	☑	✓		✓	☑			✓
Leave to Construct	☑	☑		☑	✓	☑	✓	☑	✓		✓		☑
Revenue Determination ³	☑	✓	☑	✓	✓	✓	✓	☑	✓	✓	✓	☑	✓
Rate Design ³	☑	☑	☑	☑	✓	✓	✓		☑	✓	✓	☑	✓
Codes & Rules	✓	✓	☑	✓	✓	✓	✓		✓	✓	✓		✓
Monitor Performance & Compliance	☑	☑		✓	✓	✓	✓	☑	✓	✓	✓		✓
Adjudication & Public Participation	✓	☑	✓	✓	✓	✓	✓	✓	✓	✓	✓	☑	✓
Affiliate Regulation	☑	✓			✓		✓		✓	☑	✓		
M&A and Ownership Changes	☑	✓			✓	✓	✓		✓	✓			
Implement Government Reform & Policies	✓	☑	✓	✓	✓	✓	✓	☑	✓	✓	✓		✓

² Blank space represents no responsibility, ☑ represents partial responsibility, ✓ represents full responsibility

³ In Alberta, Rural Electrification Associations (REAs) are considered utilities, but have the ability to self-regulate and set their own rates

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Revenue determination, rate design, compliance, adjudication and public participation, and supporting the implementation of government policy are generally universal functions for regulators in Canada, with some notable exceptions namely Manitoba, Nunavut, and Saskatchewan where the role of the regulator has limitations.

Consistent with the industry structure in jurisdictions like Manitoba, New Brunswick, Quebec, and Saskatchewan licensing of utilities, service territory determinations, affiliate regulation, and M&A and change of ownership issues are largely irrelevant.

Additional detail on the specific functions executed by the Canadian regulators is provided in Appendix A.

This research paper focuses on understanding the core functions of the electricity sector regulators across Canada, based upon existing legislation. Furthermore, this jurisdictional review examines whether the existing legislation that governs regulator actions provides flexibility to help reposition regulatory frameworks to support the evolving industry structure.

For each of the jurisdictions in the following sections, Navigant has rated the permissibility in the governing legislation for each item in the regulator toolkit. Permissibility is represented graphically using shaded circles, where the extent of the shading represents the extent of the regulator's discretion under the existing legislation.

3.1 Alberta – Alberta Utilities Commission

Three key pieces of legislation govern Alberta's electricity sector:

- The Electricity Utilities Act, 2003 – main legislation that governs the Alberta electricity market
- Hydro and Electric Energy Act, 2000 – ensures that generation, transmission and distribution are built in an economic, efficient and safe manner
- Alberta Utilities Commission Act, 2007 – establishes the Alberta Utilities Commission (AUC)

However, there are also bills and supplementary pieces of legislation that support the electricity sector in Alberta such as:

- Renewable Electricity Act, 2016 – establishes Alberta's commitment to a 30% renewable energy target by 2030
- Micro-generation Regulation, 2008 – establishes the rules around the grid-connection of solar PV, micro-wind generators and other generating technologies
- Transmission regulations

Alberta consists of one independent regulator, the Alberta Utilities Commission, who "regulates the utilities sector, natural gas and electricity markets to protect social, economic and environmental interests of Alberta where competitive market forces do not". The AUC's core business is to:

- Provide market oversight and enforcement
- Make timely decisions on the need, siting, construction, alteration, operation and decommissioning of electric transmission or natural gas facilities
- Make timely decisions on the siting, construction, alteration, operation and decommissioning of electric generation facilities (not the need)
- Rate regulate investor owned electric, natural gas and water utilities, and certain municipally owned electric utilities to ensure customers receive safe and reliable service at just and reasonable rates

In addition to regular utilities, Alberta also has several Rural Electrification Associations (REAs). REAs are member-owned electric distribution systems that serve farm members within a specific geographic boundary. Each REA has an elected board of directors that looks after the business operations of the REA. While REAs perform many of the same functions as regular utilities in Alberta, they are self-regulated and also have the ability to set their own rates and tariffs.

Alberta also has the Market Surveillance Alliance (MSA) in place to "monitor Alberta's electricity and retail natural gas markets to ensure that they operate in a fair, efficient, and openly competitive manner". The MSA states its mission as "taking action to promote effective competition and a culture of compliance and accountability in Alberta's electricity and retail natural gas markets". Their mandates include surveillance, investigation and enforcement in electricity and retail natural gas markets in Alberta.

Alberta also has the Alberta Electric System Operator (AESO), which is the independent system operator as defined in the Electric Utilities Act. The AESO is responsible for "the long-term planning of the Alberta transmission system, operating Alberta's energy-only market for electricity, and operating Alberta's power grid on a 24/7 basis to ensure reliable power is available at all times to meet the needs of Albertans". The AESO also:

- Provides open and non-discriminatory access to Alberta's power grid for generation and distribution companies and large industrial consumers of electricity
- Operates the Alberta power pool in a manner that is fair, efficient and open to all market participants

- Establishes rules which outline the practices, policies and procedures that are expected from market participants

The AUC oversees the AESO’s rule making process and adjudicates the enforcement of these rules.

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 8 – AUC Regulatory Levers⁴

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations 	The AUC has within its powers to require less or additional reporting obligations for energy companies in Alberta. Under current legislation, the AUC requires utilities to periodically file metrics and other reporting requirements (i.e., AUC Rules 002, 003, 005) in addition to other details on request by the AUC.
	Streamline regulatory proceedings 	The AUC has within its powers to streamline regulatory proceedings.
	Implement mandatory recurring policy reviews 	The AUC does not have the power to review the legislation that it operates under, however it can advise the government with respect to efficiency, fairness, transparency and competitiveness of electricity markets. It also appears to be entirely within the AUC’s control as to whether it adopts sunset provisions for policy determinations that the AUC itself establishes. It should be noted that although REAs in Alberta are considered utilities, they are self-regulated and have the ability to set their own rates and tariffs.
Framework	Adopt alternative forms of regulation 	The AUC has within its powers to adopt alternative forms of regulation. The AUC is currently able to prescribe both performance based rate making and cost of service rate making for the utilities that it regulates.
	Restructure rates and charges 	The AUC is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable.

⁴  represents no discretion,  represents partial discretion,  represents full discretion

Regulatory Lever	Description
<p>Mandate flexible customer arrangements</p> 	<p>Legislation gives the option to Alberta consumers a certain level of flexibility in that consumers can choose their electric retailer, whether it be from competitive electricity retailers or through the default regulated supplier. In terms of flexibility with other customer arrangements such as the integration of distributed energy resources on customer owned facilities, the AUC requires consumers to apply for micro-generation through distribution utility entities before approval by the AUC. The AUC can also grant additional customer flexibility if mandated through government.</p>
<p>Change the interconnection and compensation regime for distributed energy resources</p> 	<p>Under the Electric Utilities Act, the AUC is not responsible for making changes to the interconnection and compensation regime for distributed energy resources.</p>
<p>Establish alternative treatment for stranded assets</p> 	<p>As a result of the AUC's approach to utility asset dispositions, utilities may no longer be allowed to recover the undepreciated capital costs of facilities that were prudently incurred to the service of customers even if those assets cease to be useful in providing public utility service due to an unanticipated event – as such utilities in Alberta must understand the level of risk when investing in infrastructure and take mitigating measures to protect their downside. Furthermore, the AUC has not historically awarded any increase in the return on equity or capital structures considering this risk.</p>
<p>Relax the treatment of affiliates</p> 	<p>The AUC under current legislation sets and approves the compliance plans which detail the arrangements to be followed between utility affiliates and their affiliate retailers. As a market-based electricity market, electricity market actors are permitted by law to have subsidiaries, however their holdings companies may have affiliates or subsidiaries. The Market Surveillance Administrator, under the Alberta Utilities Act, monitors and may investigate the relationship between a regulated rate provider and/or distributor, and an affiliate retailer to ensure a fair, efficient and openly competitive electricity market in Alberta. There are additional affiliate codes in place which have been developed by the AUC and are used to govern the relationship between utilities and any other non-utility affiliates.</p>
<p>Encourage / incentivize applied R&D and technology demonstration</p> 	<p>The AUC is not directly responsible for initiatives that will innovate and modernize the electric grid. However, the AUC can be mandated by government to implement innovation and modernization objectives (e.g. Renewable Energy Act).</p>

	Regulatory Lever	Description
Competition	Deem some services eligible for full, partial or conditional deregulation <input type="radio"/>	The AUC does not have the ability to deem services eligible for full, partial or conditional regulation, in Alberta's deregulated, competitive market, however as with many of the regulatory levers the AUC can make changes that are outside of the current legislation, but only if there is government direction or supporting legislation.

3.2 British Columbia – British Columbia Utilities Commission

One key piece of legislation governs British Columbia’s electricity sector:

- Utilities Commission Act, 1996 – outlines the governing framework for British Columbia’s electricity marketplace

However, there are also bills, supplementary pieces of legislation and regulations that support the electricity sector in British Columbia such as:

- Clean Energy Act, 2010 – promotes the development of renewable energy projects and a culture of conservation in British Columbia
- Hydro and Power Authority Act – outlines the framework governing BC Hydro
- BC Hydro Public Power Legacy and Heritage Contract Act

British Columbia consists of one independent regulator, the British Columbia Utilities Commission, whose mission is to “ensure that ratepayers receive safe, reliable and non-discriminatory energy services at fair rates from the utilities it regulates, and that shareholders of those utilities are afforded a reasonable opportunity to earn a fair return on their invested capital”. The BCUC’s mandates are to:

- Facilitate fair, transparent and inclusive processes that encourage well represented input from relevant stakeholders who possess the information required to present their views effectively
- Lead in a straight forward and consistent manner, by making objective and well-reasoned decisions and by treating stakeholders with dignity and respect
- Deliver efficient regulation, aligned with all relevant legislation and regulations and government policies, that considers the business needs of regulated entities and the public interest
- Continually strive to develop new efficiencies and innovative solutions in our internal operations and regulatory processes
- Promote excellence by expecting high standards of performance and conduct by regulated entities and by encouraging professional development and excellence in our staff and commissioners

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 9 – BCUC Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations	The BCUC has within its powers to require less or additional reporting obligations for energy companies in British Columbia. Under current legislation, the BCUC does not require utilities to periodically file metrics or any other reporting requirements however on request by the BCUC, utilities must provide any requested information. This information is not specifically defined, however the language in the Utilities Commission Act is broad enough to cover all topics within utilities including (but not limited to) uniformed system of accounts, finances, operations, service quality and reliability.

	Regulatory Lever	Description
Framework	Streamline regulatory proceedings 	The BCUC has within its powers to streamline regulatory proceedings.
	Implement mandatory recurring policy reviews 	The BCUC does not have the power to review the legislation that it operates under, however it does provide annual reports to government that details matters in relation to the public. It appears to be entirely within the BCUC's control as to whether it adopts sunset provisions for policy determinations that the BCUC itself establishes. Furthermore, as with many of the regulatory levers the BCUC can make changes that are outside of the current legislation, but only if there is government direction. Furthermore, the Government of BC does not have period reviews of the BCUC, however in 2014 it did order an independent review of the BCUC; this review was a part of the government's 10-year plan.
	Adopt alternative forms of regulation 	Under legislation, it is prescribed that the BCUC can promote rate schedules that support additional cost-effective initiatives, like demand-side measures, to meet the provinces efficiency and sustainability goals.
	Restructure rates and charges 	The BCUC is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable. Furthermore, the BCUC is responsible for setting certain line items on electricity bills (i.e., electricity rates, delivery rates etc.), however there are line items that are set by various levels of governments (e.g., BC Carbon Tax, Clean Energy Levy etc.).
	Mandate flexible customer arrangements 	The BCUC does not necessarily provide flexible customer arrangements, 95% of consumers in British Columbia connect to the BC Hydro system with the remaining 5% connect to FortisBC and small municipal utilities. Competitive retailers are not allowed in British Columbia. The BCUC is not directly involved with other customer arrangements such as the integration of distributed energy resources on customer owned facilities. However, at the directive of the government can be involved in whatever capacity deemed necessary.
	Change the interconnection and compensation regime for distributed energy resources 	Under the Utilities Commission Act, the BCUC is not responsible for making changes to the interconnection and compensation regime for distributed energy resources. However, under the Clean Energy Act, the BCUC can be directed by government to make changes to interconnection and/or distributed energy resources compensation regimes.

	Regulatory Lever	Description
	Establish alternative treatment for stranded assets <input checked="" type="radio"/>	The BCUC currently allows BC Hydro and FortisBC to request security deposits from customers to allow for risk mitigation of stranded assets. To date, the amount of security deposit requested has been sufficient to recover the cost of the system reinforcements associated with each new connection; therefore, there have not been any stranded assets associated with any new customer connections. It is within the BCUC's power to provide for alternatives for treatment of stranded assets and cost of capital, if it deems that a change is necessary.
	Relax the treatment of affiliates <input checked="" type="radio"/>	Utilities are currently allowed to have subsidiaries which operate outside of generation, transmission and distribution; utilities are also allowed to partake in joint ventures with private companies. These subsidiaries require franchise licenses that are granted by the BCUC to operate. BC Hydro has 2 main subsidiaries Powerex Corp (power trading) and Powertech Labs (consulting) – net profit or losses go directly to BC Hydro to help lower costs for BC Hydro and lower electricity rates for BC Hydro customers. The Boards and management of these subsidiaries are made up of BC Hydro employees who perform these duties without any additional remuneration.
	Encourage / incentivize applied R&D and technology demonstration <input type="radio"/>	The quasi-judicial regulator BCUC does not have full control over the deployment of distributed energy resources however under the Utilities Commission Act, the government can direct the BCUC to provide prescribing factors and guidelines that can encourage clean or renewable sources.
Competition	Deem some services eligible for full, partial or conditional deregulation <input type="radio"/>	There is no language in the Utilities Commission Act, which gives regulatory authority to the BCUC, that pertains to the full, partial or conditional deregulation of any services related to the energy sector in British Columbia. Electricity markets have not been deregulated in British Columbia and most of the electricity system is owned and operated by BC Hydro, a vertically integrated utility that is a Crown corporation.

3.3 Manitoba – Manitoba Public Utilities Board

Two key pieces of legislation govern Manitoba's electricity sector:

- The Crown Corporations Governance and Accountability Act – requires Manitoba Hydro to submit changes to the Manitoba Public Utilities Board (Manitoba PUB) regarding rates for the provision of electrical power. The act authorizes the Government of Manitoba to issue mandate letters to Manitoba Hydro setting out goals, specific outcomes and performance measures to determine if outcomes have been achieved, and to issue binding directives to the utility on specific issues.
- Manitoba Hydro Act – sets out the powers of the Manitoba Hydro Electric Board including the power to enter agreements or issue tariffs, including rate schedules for wholesale transmission access. Furthermore, the act gives the Lieutenant Governor in Council authority to pass regulations to adopt and enforce reliability standards. Lastly, the act requires that the price payable for power supplied by Manitoba Hydro to its customers within the province be such that the rate charged be the same throughout the province.

There are also bills and supplementary pieces of legislation that support the electricity sector in Manitoba such as:

- The Public Utilities Board Act – exempts Manitoba Hydro from the provisions of the Public Utilities Board Act except for the purposes of conducting a public hearing regarding rates for service under The Crown Corporations Governance and Accountability Act and other minor exceptions (i.e., price for power requisitioned by the utility and apportionment of costs where a party is ordered to interconnect its system with Manitoba Hydro). Under this act, the Manitoba PUB does not regulate or manage the daily operations, or approve Manitoba Hydro's electricity capital expenditures, or regulate Manitoba Hydro's electricity disconnections or service extensions. The Manitoba PUB may take on additional duties as assigned by legislation or upon order by the Lieutenant Governor in Council (i.e., ongoing reliability enforcement duties, one-off reviews of capital expenditures etc.).
- The Efficiency Manitoba Act – sets out responsibilities regarding meeting legislated energy savings targets through the implementation and support of demand side management initiatives, mitigating the impact of rate increases, delaying the point at which major capital investments are required and encouraging innovation in areas related to its mandate.

Manitoba consists of one independent regulator, the Manitoba PUB, who is responsible for regulating utilities in the electricity, natural gas, oil, highway, water and sewage, funeral and basic automobile insurance services. Manitoba PUB's core electricity business is to:

- Establish rates for service and the provision of electrical power by Manitoba Hydro

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 10 – Manitoba PUB Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations 	Manitoba PUB’s oversight over Manitoba Hydro is restricted to rates. Nevertheless, the regulator has directed Manitoba Hydro to provide reports with respect to matters such as capital spending and to undertake studies.
	Streamline regulatory proceedings 	Manitoba PUB has within its powers to streamline regulatory proceedings.
	Implement mandatory recurring policy reviews 	Manitoba PUB does not have the power to review the legislation that it operates under. The Manitoba PUB has developed the practice of making recommendations to government regarding its jurisdiction. It appears to be entirely within the Manitoba PUB’s control as to whether it adopts sunset provisions for policy determinations that the Manitoba PUB itself establishes.
Framework	Adopt alternative forms of regulation 	Under legislation, it is prescribed that Manitoba be regulated using a cost of service model and as such the Manitoba PUB is unable to promote performance based regulation for Manitoba Hydro and other municipal utilities in Manitoba.
	Restructure rates and charges 	Manitoba PUB must approve rates for electrical service, which includes approval of rate design. Other charges such as service extension fees and wholesale transmission service charges are the responsibility of the Manitoba Hydro Electric Board.
	Mandate flexible customer arrangements 	Manitoba PUB approves rates and rate design subject to the requirement that rates must be the same across the territory within each customer class. Manitoba PUB does not have regulatory authority with respect to other customer arrangements such as the integration of distributed energy resources on customer owned facilities, however Manitoba Hydro allows for and has procedures enabling distributed resources interconnections.
	Change the interconnection and compensation regime for distributed energy resources 	Under the Manitoba Hydro Act, the Manitoba Hydro Electric Board, not Manitoba PUB, is responsible for making changes to the interconnection and compensation regime for distributed energy resources subject to the reliability standards established by the Lieutenant governor in council.
	Establish alternative treatment for stranded assets 	The Manitoba PUB’s jurisdiction is limited to rates for service – it does not approve capital expenditures or the treatment of stranded assets. The Manitoba PUB has developed the practice of making recommendations in its orders and expressing where Manitoba Hydro might achieve savings as to reduce revenue requirement but it is not empowered to specifically approve or disapprove cost items.

	Regulatory Lever	Description
	Relax the treatment of affiliates <input type="radio"/>	Manitoba PUB does not regulate Manitoba Hydro affiliates. Under the Manitoba Hydro Act, the Lieutenant Governor in Council must approve Manitoba Hydro investments in a subsidiary greater than \$5,000,000. Under the Manitoba Hydro Act, the utility can sell part of its business to an affiliated subsidiary. The sale or lease of utility property requires the approval of the Lieutenant Governor in Council if the value of the property exceeds \$5,000,000.
	Encourage / incentivize applied R&D and technology demonstration <input checked="" type="radio"/>	Manitoba Hydro is responsible for initiatives that will innovate and modernize the electric grid. Efficiency Manitoba is responsible for innovation related to energy efficiency and demand side management. The Manitoba PUB has no responsibility for innovation except in the case of Efficiency Manitoba, to such extent innovation initiatives are incorporated in efficiency plans submitted for review by the Manitoba PUB (which in turn makes recommendations to the Minister).
Competition	Deem some services eligible for full, partial or conditional deregulation <input type="radio"/>	Manitoba PUB does not have the ability to deem electricity services eligible for full, partial or conditional regulation. Under the Manitoba Hydro Act, the government cannot propose the privatization of Manitoba Hydro without first holding a referendum.

3.4 New Brunswick – New Brunswick Energy and Utilities Board

Two key pieces of legislation govern New Brunswick’s electricity sector:

- Energy and Utilities Board Act – establishes the New Brunswick Energy and Utilities Board (NB EUB)
- Electricity Act – establishes the vertically integrated, crown owned electric utility New Brunswick Power (NB Power) as the sole electricity provider and the system operator

New Brunswick consists of one Crown regulator, the New Brunswick Energy and Utilities Board, who regulates the electricity, natural gas, and pipeline industries to “ensure customers receive safe and reliable service at just and reasonable rates”.

Based upon the legislation governing the NB EUB, the following core functions were identified as part of the NB EUB’s mandate:

- Regulate the rates charged by NB Power
- Approve the tariff for the provision of electricity transmission services
- Review the application for capital projects exceeding \$50 million

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 11 – NB EUB Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations 	The NE EUB has within its powers to require less or additional reporting and compliance obligations for energy companies in New Brunswick. Under current legislation, the NB EUB requires NB Power to submit an Integrated Resource Plan every three year and an annual 10 year strategic, financial, and capital investment plan. The NB EUB has the authority to require any information for either of these reports.
	Streamline regulatory proceedings 	NE EUB has within its powers to streamline regulatory proceedings.
	Implement mandatory recurring policy reviews 	The NB EUB does not have the power to review the legislation that it operates under, however does provide to the government an annual report on its activities under the legislation in operates under. It appears to be entirely within the NB EUB’s control as to whether it adopts sunset provisions for policy determinations that the NB EUB itself establishes. Furthermore, as with many of the regulatory levers, the NB EUB can make changes that are outside of the current legislation, but only if there is government direction.

	Regulatory Level	Description
Framework	Adopt alternative forms of regulation 	Under legislation, utilities cannot charge consumers for anything other than what is established rate schedules. If a public utility wishes to change any tariff, or provide for another service to the public for which there is no current tariff, it shall apply to the NB EUB to approve the change or the provision of the service.
	Restructure rates and charges 	The NB EUB is responsible for approving revenue requirements that it finds just and reasonable, subject to the government directives.
	Mandate flexible customer arrangements 	The NB EUB does not give the option to consumers of New Brunswick much flexibility in choosing their electric provider. In terms of flexibility with other customer arrangements such as the integration of distributed energy resources on customer owned facilities, it is the Lieutenant Governor in council, not the NB EUB, who prescribes the requirements for renewable interconnections and rules for net energy metering programs that distributors may provide. The NB EUB may however, grant additional customer flexibility if mandated through government.
	Change the interconnection and compensation regime for distributed energy resources 	Under the Electricity Act, the NB EUB may approve transmission tariffs allowing for open and non-discriminatory access to transmission service and ancillary services. The Lieutenant Governor enacted the regulation, The Electricity from Renewable Resources Regulation – Electricity Act, allowing for distributed renewable generation and net metering compensation. The NB EUB's does not mandate or oversee distributed energy resources programs except as they relate to reliability standards and spending for the general rate case.
	Establish alternative treatment for stranded assets 	The alternative treatment of stranded capital is not prescribed through the NB EUB's mandate.
	Relax the treatment of affiliates 	The NB EUB does not monitor the treatment of affiliates.
	Encourage / incentivize applied R&D and technology demonstration 	The Electricity Act provides NB Power with the responsibility to promote efficient use of energy and conservation of energy, and to develop and deliver energy efficiency and demand side management programs and renewable energy standards subject to regulation. The NB EUB must take these requirements into consideration when determining rates.

	Regulatory Lever	Description
Competition	Deem some services eligible for full, partial or conditional deregulation	Under the Electricity Act, the NB EUB may conditionally or unconditionally forbear if the NB EUB determines it is consistent with the act.

3.5 Newfoundland – Newfoundland Board of Commissioners of Public Utilities

Three key pieces of legislation govern Newfoundland and Labrador’s electricity sector:

- Public Utilities Act, 1990 – defines the general powers of the Newfoundland Board of Commissioners of Public Utilities (NL PUB) to supervise the public utilities including Newfoundland Power (NP), the primary retailer on the island, and the Deer Lake Power Corporation
- Electrical Power Control Act, 1994 - Sets policy regarding electric power rates and the determination of these rates by the NL PUB. The act gives the NL PUB the regulatory oversight over Newfoundland and Labrador Hydro (NLH), a wholly-owned subsidiary of the crown corporation Nalcor, which provides almost all electricity supply in Newfoundland and Labrador
- Hydro Corporation Act, 2007 – Further defines the roles and responsibilities of NLH

The NL PUB regulates electric utilities in the province to ensure reasonable and just rates and to maintain the reliability and safety of electrical services.

Based upon the legislation governing the NL PUB, the following core functions were identified as part of the NL PUB’s mandate

- Regulate the rates charged by utilities and capital expenditures
- Ensure that the electricity services provided are safe and reliable
- Ensure that adequate electrical system planning

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 12 – NL PUB Regulatory Levers

Regulatory Lever		Description
Process	Optimize compliance and reporting obligations	The NL PUB has within its powers to require less or additional reporting obligations. Under current legislation, the NL PUB is not required to request periodical file metrics or any other reporting requirements, except for an annual report on actual expenditures on improvements or additions to their property, however on request by the NL PUB, utilities must provide any requested information. This information is not specifically defined, however the language in the Public Utilities Act is broad enough to cover all topics within utilities including (but not limited to) finances, operations, service quality and reliability.
	Streamline regulatory proceedings	The NL PUB has within its powers to streamline regulatory proceedings.

	Regulatory Lever	Description
Framework	Implement mandatory recurring policy reviews 	Under the current legislation, the NL PUB does not have the power to review the legislation that it operates under, however through its an annual submitted report to government (in which NL PUB reviews its mandates), the NL PUB may indirectly review its legislation. It appears to be entirely within the NL PUB's control as to whether it adopts sunset provisions for policy determinations that the NL PUB itself establishes. Furthermore, as with many of the regulatory levers, the NL PUB can make changes that are outside of the current legislation, but only if there is government direction.
	Adopt alternative forms of regulation 	Under the current legislation, the NL PUB is not directly responsible for performance based initiatives, however it may grant a separate rate base for the different kinds of utility services.
	Restructure rates and charges 	The NL PUB is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable. Furthermore, the NL PUB is responsible for setting rates for different utility service offerings.
	Mandate flexible customer arrangements 	The NL PUB does not give the option to consumers of Newfoundland much flexibility in that consumers are able not to choose their electric provider. NLH services all of Labrador and remote communities in Newfoundland not served by Newfoundland Power. Newfoundland Power serves most customers in Newfoundland. In terms of flexibility with other customer arrangements such as the integration of distributed energy resources on customer owned facilities, the NL PUB does not require consumers to apply before approval. Applications are through electric provider reviews. The NL PUB can grant additional customer flexibility if mandated through government.
	Change the interconnection and compensation regime for distributed energy resources 	The NL PUB is responsible for approving conditions for providing service to customers with grid-connected distributed energy resources.
	Establish alternative treatment for stranded assets 	It is within the NL PUB's power to provide for alternatives for treatment of stranded assets and cost of capital, if it deems that a change is necessary
	Relax the treatment of affiliates 	The NL PUB under current legislation, monitors and may investigate the relationship between a regulated rate provider and an affiliate retailer, however cannot change the treatment of affiliates unless directed by the Lieutenant Governor in Council. The Public Utilities Act requires that an affiliate of a public utility that sells electricity to a regulated public utility is also subject to regulation.

	Regulatory Lever	Description
	Encourage / incentivize applied R&D and technology demonstration <input type="radio"/>	The NL PUB is not directly responsible for initiatives that will innovate and modernize the electric grid. However, the NL PUB can be mandated by government to implement innovation and modernization objectives.
Competition	Deem some services eligible for full, partial or conditional deregulation <input type="radio"/>	The NL PUB does not have the ability to deem services eligible for full, partial or conditional regulation, however as with many of the regulatory levers the NL PUB can make changes that are outside of the current legislation, but only if there is government direction.

3.6 Northwest Territories – Northwest Territories Public Utilities Board

One key piece of legislation governs Northwest Territories’ (NT) electricity sector:

- The Public Utilities Act – Establishes the Northwest Territories Public Utilities Board (NT PUB) and provides it with the authority to approve rates

However, there are also bills and supplementary pieces of legislation that support the electricity sector in the Northwest Territories such as:

- Northwest Territory Hydro Corporation Act – creates the crown corporation, the Northwest Territories Hydro Corporation as the parent company to Northwest Territories Power Corporation (NTPC)
- Northwest Territories Power Corporation Act – The NTPC is responsible for the transmission and most of the generation and distribution in the NT

NT consists of one independent regulator, the Northwest Territories Public Utilities Board who is responsible for the regulation of public utilities in the NT. Regulatory authority covers the NTPC, who provides most of the electric power supplied to NT communities and distributes electricity in smaller communities, and regulation of Northland Utilities, who buys wholesale power from the NTPC, distributes it throughout the NT, and owns and operates diesel plants in remote communities

The NT PUB’s core business is to:

- Fix the rates of the electric utilities to ensure that they are just and reasonable
- Ensure utility operators provide safe, adequate and secure services to their customers

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 13 – NT PUB Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations 	The NT PUB has within its powers to require less or additional reporting obligations for energy companies in NT. Under current legislation, the NTPC is required to annually report to the Minister, in addition to responding to any ad-hoc requested information.
	Streamline regulatory proceedings 	The NT PUB has within its powers to streamline regulatory proceedings.
	Implement mandatory recurring policy reviews 	The NT PUB does not have the power to review the legislation that it operates under, however it does submit an annual report to the Minister each year on its activities, which is then submitted to the Legislative Assembly. It appears to be entirely within the NT PUB’s control as to whether it adopts sunset provisions for policy determinations that the NT PUB itself establishes. As with many of the regulatory levers, the NT PUB can make changes that are outside of the current legislation, but only if there is government direction.

	Regulatory Lever	Description
Framework	Adopt alternative forms of regulation 	Under the current legislation, it is prescribed that Northwest Territories be regulated using a cost of service model and as such the NT PUB is unable to promote performance based regulation for NTPC.
	Restructure rates and charges 	The NT PUB is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable.
	Mandate flexible customer arrangements 	Consumer's in the NT are not able to choose their electric provider, electricity is either provided by NTPC or Northland utilities depending on the geographical location. In terms of flexibility with other customer arrangements such as the integration of distributed energy resources on customer owned facilities, the NT PUB does not regulate these programs or interconnection requirements, however it may issue codes and standards pertaining to these issues. The NT PUB can also grant additional customer flexibility if mandated through government.
	Change the interconnection and compensation regime for distributed energy resources 	Under current legislation, the NT PUB is not responsible for making changes to the interconnection and compensation regime for distributed energy resources.
	Establish alternative treatment for stranded assets 	Under the current mandate, the NT PUB does not provide special consideration to the treatment of stranded assets, however if mandated it should have the ability to grant alternatives for treatment of stranded assets and cost of capital.
	Relax the treatment of affiliates 	Under the current mandate, the NT PUB does not provide regulation for affiliates.
	Encourage / incentivize applied R&D and technology demonstration 	The NT PUB is not directly responsible for initiatives that will innovate and modernize the electric grid. However, the NT PUB can be mandated by government to implement innovation and modernization objectives.
Competition	Deem some services eligible for full, partial or conditional deregulation 	The NT PUB has the power to forbear; it may deem that part of the Public Utilities Act does not apply to a public utility or it may determine that a public utility is not regulated under the act.

3.7 Nova Scotia – Nova Scotia Utility and Review Board

Two key pieces of legislation govern Nova Scotia’s electricity sector:

- The Public Utilities Act – outlines the roles and objectives for the Nova Scotia Utility and Review Board (NSUARB)
- Electricity Act – outlines the provincial energy objectives, provides guidelines regarding the government’s guiding policy for electricity reform

However, there are also bills and supplementary pieces of legislation that support the electricity sector in Nova Scotia such as:

- Nova Scotia Power Privatization Act, 1992 – provides for the privatization of the investor owned utility Nova Scotia Power Inc (NSPI). NSPI owns almost all the transmission and the majority of distribution assets. NSPI owns a substantial amount of generation facilities and purchases renewable energy from independent power producers
- Electricity Efficiency and Conservation Restructuring Act – amends the Public Utility Act to provide for a board regulated franchise holder, EfficiencyOne, to provide cost-effective demand side management activities
- Electricity Reform Act, 2013 – amended the Electricity Act to allow customers to buy power directly from licensed renewable-energy providers; the act now includes a focus on emerging technologies, market trends in supply and demand, and trends in the oversight and delivery (governance and structure) of Nova Scotia’s electricity marketplace
- Electricity Plan Implementation Act, 2015 – gives authority to the NSUARB to set performance and reliability standards for NSPI

Nova Scotia consists of one independent regulator, the Nova Scotia Utility and Review Board, the NSUARB’s core business as related to the electricity sector is to:

- Provide general supervision over all electric utilities operating as public utilities in the province
- Review and set rates, tolls, and charges for the public utilities services
- Provide regulation for the provision of services
- Review and approve capital expenditures more than \$250,000

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 14 – NSUARB Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations	The NSUARB has within its powers to require less or additional reporting obligations for NSPI. Under current legislation, the NSUARB does require utilities to periodically file metrics or any other reporting requirements however on request by the NSUARB, utilities must provide any requested information. This information is not specifically defined, however the language in the Public Utilities Act is broad enough to cover all topics.

	Regulatory Lever	Description
	Streamline regulatory proceedings 	It is within the NSUARB’s power to streamline regulatory proceedings.
Framework	Implement mandatory recurring policy reviews 	The NSUARB has the power to review the legislation that it operates under and to make recommendations to the Attorney General in Nova Scotia after public adjudication. NSUARB also reports on its activities to the Government in Council and the House of Assembly every year. The Governor in Council may further request any additional information in this annual report. The NSUARB, at its discretion, may publish information with respect to activities as it deems useful. It appears to be entirely within the NSUARB’s control as to whether it adopts sunset provisions for policy determinations that the NSUARB itself establishes. Furthermore, as with many of the regulatory levers the NSUARB can make changes that are outside of the current legislation, but only if these changes in legislation are enacted by the Minister.
	Adopt alternative forms of regulation 	Under legislation, the NSUARB may grant a separate rate base for the different kinds of utility services, however it is not explicitly known whether the NSUARB can adopt alternative forms of regulation.
	Restructure rates and charges 	The NSUARB is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable.
	Mandate flexible customer arrangements 	Consumers are generally not able to choose their electric provider and purchases electricity from NSPI. However, there are two exceptions to NSPI’s monopoly position – the ability of retail customers to purchase directly from licensed renewable suppliers, and the ability of wholesale customers to purchase from any alternative supplier. While the wholesale electricity market is open to competitive providers by way of Independents Power Producers, these electricity providers can only sell to NSPI and the municipal utilities.
	Change the interconnection and compensation regime for distributed energy resources 	Under the Electricity Act and the Renewable Electricity Regulations, NSPI is mandated to allow, under regulation and the NSUARB’s approval, the interconnection of low impact renewable energy from community based organizations. The NSUARB sets the rates, tariffs and market rules for these renewables suppliers who provide energy to NSPI under a NSUARB approved pro forma Power Purchase agreement. The Minister sets the terms and conditions for feed-in tariffs and the NSUARB approves the rate. Costs associated with Demand Side Management (DSM) activities are recovered from customers through NSPI’s revenue requirement.

	Regulatory Lever	Description
	Establish alternative treatment for stranded assets 	It is within the NSUARB's power to provide alternatives for treatment of stranded assets and cost of capital, if it deems that a change is necessary.
	Relax the treatment of affiliates 	The NSUARB exercises a high level of oversight over NSPI's relationships and transactions with its affiliates pursuant to the NSUARB approved Affiliate Code of Conduct. NSPI has annual reporting requirements and is also subject to external audit regarding its affiliates.
	Encourage / incentivize applied R&D and technology demonstration 	DSM activities are provided by the franchise holder, EfficiencyOne, which is regulated by the NSUARB. NSPI is required to undertake these NSUARB approved DSM activities, which are required to be provided under contract by the franchise holder to NSPI. The NSUARB is also responsible for setting the community owned renewable feed-in tariffs (COMFIT), tidal feed-in tariffs (Tidal Fit), and the rates and tariffs that licensed renewable suppliers must pay to NSPI to enable retail competition for renewable low-impact electricity. As discussed above, in 2017 the NSUARB did not approve NSPI's ownership of electric vehicle chargers as EV charging stations are not a regulated utility service under the Public Utilities Act, however the NSUARB can approve these plans.
Competition	Deem some services eligible for full, partial or conditional deregulation 	The NSUARB does not have the ability to deem services eligible for full, partial or conditional regulation, however as with many of the regulatory levers the NSUARB can make changes that are outside of the current legislation, but only if these changes in legislation are enacted by the Minister.

3.8 Nunavut – Nunavut Utility Rates Review Council

Two key pieces of legislation govern Nunavut’s electricity sector:

- Utility Rates Review Council Act – establishes the Utility Rates Review Council (URRC) as an advisory body to the Minister Responsible for the Qulliq Energy Corporation (QEC)
- Qulliq Energy Corporation Act – establishes the QEC as a territorial corporation wholly owned by the Government of Nunavut. The QEC is the sole generator and distributor of electrical energy in Nunavut

In Nunavut, the Minister is responsible for the QEC and Nunavut’s Executive Council, and is ultimately responsible for deciding the region’s electricity rates. The URRC is required to advise the Minister on:

- Applications by QEC for approval of project permits for construction of major capital projects exceeding \$5,000,000
- Revenue requirement and cost of capital of the QEC to ensure that a fair return is provided to the QEC’s shareholder, the Government of Nunavut
- Rates, tariffs and rate structures as it relates to electricity generation, transmission and distribution

While the Government is ultimately responsible for determining many of Nunavut’s utility related topics, it refers to the URRC for advice on many issues. For this reason, Navigant evaluated the URRC’s role as it relates to the regulator’s core functions and regulatory levers detailed below.

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 15 – URRC Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations 	The URRC has within its powers to require less or additional reporting obligations for the QEC. Under current legislation, however, the QEC must provide an annual report detailing their operating budgets, annual capital budgets, rate forecasts, or any other information the Minister may request.
	Streamline regulatory proceedings 	The URRC has within its powers to streamline regulatory proceedings.
	Implement mandatory recurring policy reviews 	The URRC does not have the power to review the legislation that it operates under, however it does submit to the Minister and the Legislative Assembly an annual report on its activities for the previous year. It appears to be entirely within the URRC’s control as to whether it adopts sunset provisions for policy determinations that the URRC itself establishes.

	Regulatory Lever	Description
Framework	Adopt alternative forms of regulation <input type="radio"/>	Under legislation, it is prescribed that Nunavut be regulated using a cost of service model and as such the URRC is unable to recommend performance based regulation to the Minister Responsible for the QEC.
	Restructure rates and charges <input type="radio"/>	Under the Minister established guidelines, the URRC is responsible for recommending the approval of revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable.
	Mandate flexible customer arrangements <input type="radio"/>	The URRC is not responsible for giving consumers flexibility to choose their electric provider, payment procedures, or the integration of distributed energy resources on customer owned facilities.
	Change the interconnection and compensation regime for distributed energy resources <input type="radio"/>	The URRC is not able to make interconnection or distributed energy resources compensation changes.
	Establish alternative treatment for stranded assets <input type="radio"/>	It is not within the URRC's power to provide for alternatives for treatment of stranded assets and cost of capital, if it deems that a change is necessary.
	Relax the treatment of affiliates <input type="radio"/>	The URRC under current legislation, is not responsible for the regulation of affiliates or subsidiaries. The QEC is permitted to have subsidiaries to carry out its responsibilities if approved by the Minister.
	Encourage / incentivize applied R&D and technology demonstration <input type="radio"/>	The URRC is not directly responsible for initiatives that will innovate and modernize the electric grid.
Competition	Deem some services eligible for full, partial or conditional deregulation <input type="radio"/>	The URRC does not have the ability to deem services eligible for full, partial or conditional regulation.

3.9 Ontario – Ontario Energy Board

Two key pieces of legislation govern Ontario's electricity sector:

- Electricity Act, 1998 – outlines the framework for Ontario's competitive electricity marketplace
- Ontario Energy Board Act, 1998 – outlines the mandate for the OEB

However, there are also bills and supplementary pieces of legislation that support the electricity sector in Ontario such as:

- Green Energy and Green Economy Act, 2009 – promotes the development of renewable energy projects and a culture of conservation in Ontario
- Strengthening Consumer Protection and Electricity System Oversight Act, 2015 – increases the powers of the OEB to enhance consumer protection and to allow for increased scope for utilities to expand business activities
- Fair Hydro Act, 2017 – establishes a framework under which the costs and benefits associated with the “clean energy initiative” are to be allocated among present and future consumers of electricity. The Fair Hydro Act was primarily intended to help effectuate an average reduction in consumers' electricity bills of 25%.
- Energy Statute Law Amendment Act, 2016 – expanded the OEB's statutory objectives to include facilitating the implementation of the Long-Term Energy Plans issued by the Minister of Energy

Under Ontario's framework, a single independent regulator, the Ontario Energy Board, “supports and guides the continuing evolution of the Ontario energy sector by promoting outcomes and innovation that deliver value for all Ontario energy consumers”. As per the OEB Mission Statement, the OEB's mandates are to:

- Establish rates and prices that are reasonable to consumers and that allow utilities to invest in the system
- Encourage higher performance from natural gas and electricity utilities and measuring progress
- Make the consumer's own usage, and the broader energy issues, easier to understand
- Look out for consumer interests, investigating complaints and applying penalties, where appropriate
- Think about the long-term needs of the energy sector and developing regulatory policy to meet emerging challenges.

It is important to note that the Ministry of Energy of Ontario created the OEB Modernization Review Panel in 2017 to ensure that the OEB can continue to protect consumers amidst a rapidly changing sector, and to support innovation and new technologies.

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 16 – OEB Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations 	The OEB has within its powers to require less or additional reporting obligations for energy companies in Ontario. Under current legislation, the OEB requires distributors to report quarterly on a detailed list of reporting requirements, which include (but are not limited to) market information (i.e., total number of customers by rate class), service quality requirements (i.e., telephone call abandon rate), behind-the-meter distributed generation (i.e., the number of new distributed generation connections), reliability metrics (i.e., SAIDI/SAIFI/CAIDI), etc. An additional part of the OEB’s mandate is to provide for efficiencies in the regulatory process. An example of such efficiencies includes its e-Filing service for reporting requirements, which reduces the complexity involved in filing reporting requirements (i.e., Excel CSV upload, web interface, etc.). A further example of such efficiencies is the annual LDC scorecards, which are significant reporting requirements established by the OEB of its own accord.
	Streamline regulatory proceedings 	The OEB has within its powers to streamline regulatory proceedings. As an example, the OEB is currently evaluating options for proportionate review of applications.
	Implement mandatory recurring policy reviews 	The OEB does not have the power to review the legislation that it operates under, however it can advise the government with respect to efficiency, fairness, transparency and competitiveness of electricity markets. It appears to be entirely within the OEB’s control as to whether it adopts sunset provisions for policy determinations that the OEB itself establishes.
Framework	Adopt alternative forms of regulation 	The OEB has within its powers to adopt alternative forms of regulation. The OEB is currently able to prescribe both performance based rate making and cost of service rate making for the utilities that it regulates.
	Restructure rates and charges 	The OEB can adjust rates based on stakeholder feedback, including changes based upon trends within the industry such as distributed energy resources. For example, in 2015, the OEB took a major step and changed the structure of Ontario’s residential electricity distribution rates. After extensive consultation with distributors, customers, conservation advocates and other stakeholders the OEB announced that it would be increasing the amount of revenue collected through the fixed rate and reducing the amount of revenue collected through the variable rate. However, there are line items within electricity bills that are not set by the OEB, instead by the system operator. Therefore, the OEB does not have full control over rates and charges. As with many of the regulatory levers, the OEB can further make changes to rates and charges that are outside of the current legislation, but only if there is government direction (i.e., Fair Hydro Plan Act).

Regulatory Lever	Description
<p>Mandate flexible customer arrangements</p> 	<p>The OEB can, to a certain extent, allow for consumers to have certain flexibilities. However, additional powers have been granted to the OEB over the years in subsequent amendments to the original Ontario Energy Board Act. Under the current legislation, the OEB regulates both competitive retailers and incumbent electric utilities – the option to choose either suppliers shows a level of flexibility with customer arrangements, which the OEB itself regulates. There are also other avenues of customer flexibility that can only be granted through government mandates. For example the ban on winter disconnections shows a level of flexibility with customer payments however the power that the OEB was given was granted through Bill 95, Protecting Vulnerable Energy Consumers Act, 2017.</p>
<p>Change the interconnection and compensation regime for distributed energy resources</p> 	<p>Under current legislation, the OEB requires transmitters and distributors to provide non-discriminatory access for renewable energy generation facilities. However, the OEB is limited in changing the compensation regime related to distributed energy resources; the compensation for distributed energy resources is under the authority of the IESO, the system operator (i.e., microFIT program), or the Ministry of Energy.</p>
<p>Establish alternative treatment for stranded assets</p> 	<p>The OEB currently allows for the recovery of stranded assets through a separate rate rider and utilities are entitled to receive a rate of return on stranded assets, if the asset investments were deemed prudent. Utilities that wish to recover the costs associated with stranded assets in a different manner have the option to. However, they must provide a full explanation as to why the accepted practice is not suitable. It is within the OEB’s power to provide for alternatives for treatment of stranded assets and cost of capital, if it deems that a change is necessary.</p>
<p>Relax the treatment of affiliates</p> 	<p>Under current legislation, the OEB is responsible for setting out the standards and conditions for the interaction between electricity distributors and transmitters and their respective affiliated companies. The OEB is also responsible for authorizing utilities to expand their business activity beyond distributing electricity, however it is unclear what test the OEB will apply in determining approval. It was within the OEB’s power to approve or deny a utility’s affiliate in pursuing certain business activities, however this has since changed with legislative amendments made to the OEB Act in 2015.</p>

	Regulatory Lever	Description
	Encourage / incentivize applied R&D and technology demonstration 	The OEB itself has identified the need to work towards removing barriers for future innovation and is committed to understanding the impact of distributed energy resources and facilitating development of distributed energy resources for the benefit of all customers. However the OEB is not directly responsible for initiatives that will innovate and modernize the electric grid. Having said this, the OEB is mandated under the OEB Act to facilitate the implementation of a smart grid in Ontario and can be mandated by government to implement innovation and modernization objectives (i.e., Green Energy and Green Economy Act, 2009).
Competition	Deem some services eligible for full, partial or conditional deregulation 	The OEB is the independent regulatory body that regulates the energy sector in Ontario. However, there is no language in the Ontario Energy Board Act which gives regulatory authority to the OEB that pertains to the full, partial or conditional deregulation of any services related to the energy sector in Ontario.

3.10 Prince Edward Island – Island Regulatory and Appeals Commission

Two key pieces of legislation govern Prince Edward Island’s electricity sector:

- Electric Power Act, 2016 – identifies the Island Regulatory and Appeals Commission (IRAC) as the authority to regulate the electricity sector. IRAC primarily regulates Maritime Electric and the PEI Energy Corporation for purposes of DSM
- Island Regulatory and Appeals Commission Act – Provides IRAC with its regulatory structure and authority. IRAC’s regulatory powers, however are derived from the Electric Power Act.

However, there are also bills and supplementary pieces of legislation that support the electricity sector in Prince Edward Island such as:

- Energy Corporation Act, 2017 – establishes the Prince Edward Island Corporation, a crown corporation, and dictates its responsibilities related to the production, transmission and distribution of energy in all forms.
- Renewable Energy Act, 2016 – mandates that certain levels of electricity generation must be from renewable sources and provides the governmental control of the development of renewable energy in the province

Prince Edward Island’s independent regulator, the Island Regulatory and Appeals Commission, regulates the electric utilities, except for the City of Summerside Electric Utility and is responsible for conducting public hearings and hearing appeals.

IRAC’s core focus for the electricity industry in Prince Edward Island is to:

- Approve capital budgets and directives of all operations and expenditures
- Review and make decisions on the electric utilities’ general rate applications

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 17 – IRAC Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations 	Except for a mandated annual report, IRAC has within its powers to require less or additional reporting obligations for public utilities. Under current legislation, IRAC may require reporting on all topics within utilities including (but not limited to) finances, operations, service quality and reliability.
	Streamline regulatory proceedings 	The IRAC has within its powers to streamline regulatory proceedings.
	Implement mandatory recurring policy reviews 	IRAC does not have the power to review the legislation that it operates under. It appears to be entirely within IRAC’s control as to whether it adopts sunset provisions for policy determinations that the IRAC itself establishes. Furthermore, as with many of the regulatory levers, IRAC can make changes that are outside of the current legislation, but only if there is government direction.

	Regulatory Lever	Description
Framework	Adopt alternative forms of regulation 	Under legislation, the IRAC may grant a separate rate base for the different kinds of utility services, however it is not explicitly known whether the IRAC can adopt alternative forms of regulation.
	Restructure rates and charges 	IRAC is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable.
	Mandate flexible customer arrangements 	Consumers in Prince Edward Island are not able to choose their electric provider. In terms of flexibility with other customer arrangements such as the integration of distributed energy resources on customer owned facilities, IRAC may not prescribe requirements, however The Renewable Energy Act and Maritime Electric's General Rules & Regulations (which are approved by IRAC) does prescribe Net-metering requirements.
	Change the interconnection and compensation regime for distributed energy resources 	IRAC allows public utilities to recover costs associated with the Renewable Energy Act. Under this act, various interconnection requirements and guidelines are prescribed to the public utility (i.e., net metering, feed-in tariffs, designated development zones, and a renewable portfolio standard). Small capacity generators may appeal Maritime Electric's decisions regarding interconnection refusal or net-metering termination. Maritime Electric Company, Ltd. Currently has an Application before IRAC for approval of an Open Access Transmission Tariff to provide nondiscriminatory access for wind developers and other potential users at a regulated rate for service.
	Establish alternative treatment for stranded assets 	It is within IRAC's power to provide for alternative treatment of stranded assets and cost of capital, if it deems that a change is necessary. In establishing a rate base, IRAC may include or exclude any expenditures, including stranded assets.
	Relax the treatment of affiliates 	IRAC is not responsible for regulation of affiliates under current legislation, however electricity market actors are permitted by law to have subsidiaries and holdings companies.
	Encourage / incentivize applied R&D and technology demonstration 	Under the Electric Power Act, IRAC may direct any public utility to prepare an energy efficiency and demand side management plan.
Competition	Deem some services eligible for full, partial or conditional deregulation 	IRAC does not have the ability to deem services eligible for full, partial or conditional regulation, however as with many of the regulatory levers IRAC can make changes that are outside of the current legislation, but only if there is government direction.

3.11 Québec – The Régie de l’énergie

Two key pieces of legislation govern Québec’s electricity sector:

- The Act respecting the Régie de l’énergie (the “Régie”), CQLR c.R-6.01 (the “Act”) – outlines the framework for both Québec’s regulated and competitive electricity marketplace
- The Hydro Québec Act, CQLR c. H-5 – continues and governs the vertically integrated crown corporation, Hydro-Québec

However, there are also bills and supplementary pieces of legislation that support the electricity sector in Québec such as:

- The Act respecting Transition Énergétique Québec. CQLR c. T-11.02 – creates the agency, Transition Énergétique Québec, tasked with supporting, stimulating and promoting energy transition, innovation and efficiency and ensuring the integrated governance to achieve the government’s energy targets

Québec consists of one independent regulator, The Régie de l’énergie (the “Régie”), who has the authority to establish, monitor and enforce regulations for electricity transmission and distribution in Québec. Essentially, the Régie:

- Establishes rates and prices that are reasonable to consumers and that allow utilities to invest in the system
- Monitors the conditions for the transmission and distribution of electric power
- Encourages higher performance from natural gas and electricity utilities and measuring progress
- Looks out for consumer interests, investigating complaints and applying penalties, where appropriate, and to generally promote the satisfaction of consumer needs
- Authorizes the construction, the acquisition and sale of all assets for transmission or distribution purposes
- Monitors the prices of petroleum products and steam
- Thinks about the long-term needs of the energy sector and approve programs and measures to be operated by Transition énergétique Québec

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 18 – Régie Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations	The Régie has within its powers to require less or additional reporting obligations for energy companies in Québec. Under current legislation, the Régie requires an annual report which includes (but is not limited to) reporting of activities, revenues and expenditures as well as the status of approved projects and any other information required by the Régie.
	Streamline regulatory proceedings	The Régie has within its powers to streamline regulatory proceedings.

	Regulatory Lever	Description
	Implement mandatory recurring policy reviews 	The Régie does not have the power to review the legislation that it operates under, however it can advise the Minister on any energy matter submitted by the Régie to the minister. It may on its own provide advice to the Minister on any matter within its jurisdiction. It appears to be entirely within the Régie’s control as to whether it adopts sunset provisions for policy determinations that the Régie itself establishes. It is also entirely within the Régie’s control to establish regularly scheduled reviews of its existing policy.
	Adopt alternative forms of regulation 	Under the current legislation, the Régie is authorized to approve or set rates based on both the cost of service, as well as for performance based regulation.
	Restructure rates and charges 	The Régie under Article 31 of the Act, has the authority to fix the rates and conditions for the transmission of electric power by Hydro-Québec TransÉnergie and the distribution of electric power by Hydro-Québec Distribution, however the Régie has no regulation for Hydro-Québec Production’s costs or rates. As with many of the regulatory levers, the Régie can further make changes to rates and charges that are outside of the current legislation, but only if there is government direction (e.g. restructure to heritage pool requirements).
Framework	Mandate flexible customer arrangements 	Consumers do not have the option to choose electricity providers. The Régie regulates the incumbent electric utility, Hydro-Québec and municipal electric distributors (i.e., Hydro Westmount, Hydro-Sherbrooke, Hydro-Coaticook etc.). In terms of flexibility with other customer arrangements such as the integration of distributed energy resources on customer owned facilities, the Régie does not prescribe requirements for consumers interconnections.
	Change the interconnection and compensation regime for distributed energy resources 	Under current legislation, the Régie regulates energy efficiency, renewable energy and demand side management programs run by Transition Énergétique Québec. Hydro-Québec offers a net metering option for customers-generators of less than 50 kW.
	Establish alternative treatment for stranded assets 	It is within the Régie’s power to provide alternatives for the treatment of stranded assets and cost of capital, if it deems that a change is necessary. Under the current legislation, when fixing or modifying rates, the Régie shall determine the rate base after considering the fair value of the assets it considers prudently acquired and useful for the operation of such systems.
	Relax the treatment of affiliates 	The Régie under current legislation, is responsible for setting out the standards and conditions for the interaction between electricity distributors and transmitters and their respective affiliated companies. The Régie approves each code of conduct and monitors and enforces compliance.

	Regulatory Lever	Description
	Encourage / incentivize applied R&D and technology demonstration ●	The Régie has the authority to approve budgets dedicated to the expenditure of new technologies and innovation. Additional innovation initiatives may be approved following the approval and implementation of the Act respecting Transition énergétique Québec.
Competition	Deem some services eligible for full, partial or conditional deregulation ○	The Act respecting the Régie de l'énergie gives Hydro-Québec the exclusive right to distribute electricity throughout the territory of Québec, excluding the territories served by a distributor operating a municipal, cooperative or private electric power system. There is no language in the Act respecting the Régie de l'énergie that pertains to the full, partial or conditional deregulation of any services related to the energy sector in Québec.

3.12 Saskatchewan –Saskatchewan Rate Review Panel

Two key pieces of legislation govern Saskatchewan's electricity sector:

- The Crown Corporations Act, 1993 – establishes the Crown Investments Corporation (CIC) through which the government manages the electric utility SaskPower
- The Power Corporation Act–grants SaskPower the exclusive rights to supply, transmit and distribute electricity in the province other than parts of the City of Saskatoon and Swift Current. These cities operate under municipal franchises and purchase bulk power from SaskPower

Utility regulation in Saskatchewan differs from the other Canadian provinces as there is no independent regulator. In Saskatchewan, the Government of Saskatchewan is the utility regulator, while the CIC monitors SaskPower and reports findings to the government with recommendations on SaskPower's revenues, expenses, capital expenditures, investments and operating results, etc. SaskPower is a Crown subsidiary of the CIC.

The only quasi-independent regulatory entity in Saskatchewan is the Saskatchewan Rate Review Panel (SRRP).⁵ The SRRP monitors SaskPower's rate requests and provides the Minister of Crown Investments Corporation a report with observations and recommendations related to electricity rates. The CIC acts as a liaison between the Rate Review Panel and the government as required.

The Minister responsible for the Crown Investments Corporation provides the Panel with instructions regarding the scope of each review. The Panel then:

- posts the rate application and specific terms of reference on its web site;
- hires independent experts to assess the application and provide the Panel with technical advice;
- invites comments or submissions from customers and the public by email, letters, telephone messages, Facebook and Twitter;
- conducts public consultation to provide information, encourage discussion and answer any questions; and
- informs the public during the review process by posting documents related to the application, media releases, notices of public meetings and transcripts, the technical expert's report and the Panel's final report.

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

⁵ Through an Order-in-council in 2012, the Minister of Crown Investments Corporation (the Minister) appointed the Panel as a Ministerial Advisory Committee, however the final decision about rate proposals rests with the Saskatchewan government.

Figure 19 – The Government of Saskatchewan & the CIC’s Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations <input type="radio"/>	The SRRP’s mandate / terms of reference are limited to reviewing the rate application submitted by the regulated entity, inviting public comments / submissions, and conducting public consultation.
	Streamline regulatory proceedings <input type="radio"/>	The SRRP’s mandate / terms of reference are limited to reviewing the rate application submitted by the regulated entity, inviting public comments / submissions, and conducting public consultation.
	Implement mandatory recurring policy reviews <input type="radio"/>	The SRRP’s mandate / terms of reference are limited to reviewing the rate application submitted by the regulated entity, inviting public comments / submissions, and conducting public consultation.
Framework	Adopt alternative forms of regulation <input type="radio"/>	The SRRP’s mandate / terms of reference are limited to reviewing the rate application submitted by the regulated entity, inviting public comments / submissions, and conducting public consultation.
	Restructure rates and charges <input checked="" type="radio"/>	The Rate Review panel can make recommendations to the government for the adjustment of utility rates based on stakeholder feedback. The Government of Saskatchewan ultimately approves the rates; therefore, the Rate Review Panel does not have full control over rates and charges.
	Mandate flexible customer arrangements <input type="radio"/>	The SRRP’s mandate / terms of reference are limited to reviewing the rate application submitted by the regulated entity, inviting public comments / submissions, and conducting public consultation.
	Change the interconnection and compensation regime for distributed energy resources <input type="radio"/>	The SRRP’s mandate / terms of reference are limited to reviewing the rate application submitted by the regulated entity, inviting public comments / submissions, and conducting public consultation.
	Establish alternative treatment for stranded assets <input type="radio"/>	The SRRP’s mandate / terms of reference are limited to reviewing the rate application submitted by the regulated entity, inviting public comments / submissions, and conducting public consultation.
	Relax the treatment of affiliates <input type="radio"/>	The SRRP’s mandate / terms of reference are limited to reviewing the rate application submitted by the regulated entity, inviting public comments / submissions, and conducting public consultation.
	Encourage / incentivize applied R&D and technology demonstration <input type="radio"/>	The SRRP’s mandate / terms of reference are limited to reviewing the rate application submitted by the regulated entity, inviting public comments / submissions, and conducting public consultation.

	Regulatory Lever	Description
Competition	Deem some services eligible for full, partial or conditional deregulation	The SRRP's mandate / terms of reference are limited to reviewing the rate application submitted by the regulated entity, inviting public comments / submissions, and conducting public consultation.

3.13 Yukon – Yukon Utilities Board

One key piece of legislation governs Yukon’s electricity sector:

- The Public Utilities Act, 2002 – provides the regulatory framework in which the Yukon Utilities Board (YUB) regulates the public utilities

However, there are also bills and supplementary pieces of legislation that support the electricity sector in Yukon such as:

- Yukon Development Corporation Act, 2002 – establishes the crown corporation, the Yukon Development Corporation, which is the parent company to the Yukon Energy Corporation, the main generator and transmitter of electrical energy in Yukon

Yukon consists of one independent regulator, the Yukon Utilities Board, who regulates Yukon’s franchised utilities. The YUB’s core mandate is to:

- Issue orders fixing public utility rates, namely for the crown corporation, the Yukon Energy Corporation, and the investor owned company ATCO Electric Yukon. The YUB may also prohibit or limit any proposed rate changes
- Fix the standards and regulations to be followed by the public utilities
- Determine the public utility services areas

The following table reviews each of the levers / actions in the regulator toolkit to support the evolving industry structure against the governing legislation. It is not intended to be an exhaustive legal review of the permissibility of these actions, but rather an initial review to identify whether there are express consents or restrictions.

Figure 20 – YUB Regulatory Levers

	Regulatory Lever	Description
Process	Optimize compliance and reporting obligations 	The YUB has within its powers to require less or additional reporting obligations for energy companies in Yukon. Under current legislation, the YUB requires utilities to annually file metrics or any other reporting requirements however on request by the YUB, utilities must provide any requested information. This information is in some cases specified, however the language in the legislation is broad enough to cover all topics within utilities including (but not limited to) finances, operations, service quality and reliability.
	Streamline regulatory proceedings 	The YUB has within its powers to streamline regulatory proceedings.
	Implement mandatory recurring policy reviews 	The YUB does not have the power to review the legislation that it operates under, however the YUB makes a report to the Minister each year on the activities and affairs of the YUB during the year. It appears to be entirely within the YUB’s control as to whether it adopts sunset provisions for policy determinations that the YUB itself establishes. Furthermore, as with many of the regulatory levers, the YUB can make changes that are outside of the current legislation, but only if there is government direction.

	Regulatory Lever	Description
Framework	Adopt alternative forms of regulation 	Under legislation, it is prescribed that Yukon be regulated using a cost of service model and as such the YUB is unable to promote performance based regulation for Yukon Energy Corporation and other municipal utilities in Yukon.
	Restructure rates and charges 	The YUB is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable. Under the current legislation, the YUB has flexibility in evaluating "just and reasonable" rates.
	Mandate flexible customer arrangements 	Consumers do not have the option to choose electricity providers. In terms of flexibility with other customer arrangements the YUB does not prescribe requirements for consumers arrangements, however the YUB may grant additional customer flexibility if mandated through government.
	Change the interconnection and compensation regime for distributed energy resources 	A 2014 amendment to the Public Utilities Act removed a barrier to the development of micro-generation and independent power production, enabling a greater diversity of power generation options. The YUB is responsible for approving and amending the Yukon-wide interconnection standards developed by the utilities.
	Establish alternative treatment for stranded assets 	It is within the YUB's power to provide for alternatives for treatment of stranded assets and cost of capital, if it deems that a change is necessary.
	Relax the treatment of affiliates 	The YUB under current legislation, does not monitor the relationship between a regulated rate provider and an affiliate retailer except to establish the affiliates as public utilities and subject them to the rules and regulations in the Public Utilities Act.
	Encourage / incentivize applied R&D and technology demonstration 	The YUB is not directly responsible for initiatives that will innovate and modernize the electric grid. However, the YUB can be mandated by government to implement innovation and modernization objectives. The YUB may indirectly influence the deployment of distributed energy resources' through its role in approving the utilities interconnection guidelines (i.e. the micro-generation program terms and conditions are approved by the YUB).
Competition	Deem some services eligible for full, partial or conditional deregulation 	The YUB does not have the ability to deem services eligible for full, partial or conditional regulation, however as with many of the regulatory levers, the YUB can make changes that are outside of the current legislation, but only if there is government direction.

4. CONCLUSIONS

How will the utility sector evolve over the next 5, 10, 20 years? What will utility regulation look like in 2030? What role will the utility regulator play in the future of the sector? What legacy assumptions should be reconsidered and which will hold true? These are questions jurisdictions around the world are grappling with as disruptive technologies and business models start to take aim at the power and utilities sector.

Navigant's view of the transformation of the power and utilities sector is characterized as the Energy Cloud.⁶ In the Energy Cloud future, traditional utilities operate as multi-faceted platforms, increasingly facilitating a dynamic marketplace for distributed energy resources on behalf of customers and society. Furthermore, and perhaps most importantly, the Energy Cloud is characterized by rapid evolution in platform operations and customer offerings. In this view of the future, longstanding assumptions centered around the utility as the only provider of energy services, rates based on cost and sales volume, earnings tied one-to-one with capital expenditures, and lengthy regulatory processes may not hold.

The pace and extent of this change will undoubtedly vary by jurisdiction based on several factors, including circumstance, pre-existing industry structure, geography, and likely politics. The wave of unbundling that took place in the sector in the late 90s and early 2000s impacts many jurisdictions but not all. Likewise, individual jurisdictions will respond to this next wave of change in very different ways.

Regardless of the pace of change or the preferred response, an astute regulator who is aware of the impact of the impending change, who understands the extent of its purview, and is grounded in the present as well as the future will be critical to a successful transition.

This paper was intended to do two things:

- Explore the opportunities that exist within the existing legislation for the regulatory framework to adapt to the impending changes in the electricity industry; and
- Start a dialogue around how that flexibility should be applied today and in the future.

It is clear from this analysis the provinces and territories are each starting from a different position. The structure and complexity of the industry varies considerably. The role and responsibility of the regulator, as enshrined by the current legislation, also varies considerably.

Across the actions and levers in the regulator's toolkit, the most flexibility to adapt exists within the process category, followed by framework and competition. For example, regulators in most jurisdictions appear to have sole discretion to optimize compliance and reporting requirements, streamline regulatory proceedings, and establish sunset clauses for internal policy.

Rate design and tariff structure is also an area where regulators appear to have substantial flexibility to change policies or introduce new policy. However, it is less obvious that regulators have the legislative mandate to transition the framework from traditional cost-of-service regulation to more dynamic performance-based models. In some instances, cost-of-service regulation is explicitly called for in the legislation. In most provinces and territories, the governing legislation was drafted almost two decades ago, hence the idea of widespread distributed energy resources was non-existent. As such, the role of regulator in establishing connection requirements and the compensation regime is not well defined. In the

⁶ Read Navigant's most recent Energy Cloud white paper [here](#).

case of distributed energy storage, the potential to classify the assets as a network resource or a generation / supply resource also introduces confusion as to whether assets should be regulated as part of the transmission and distribution regulatory framework or in the case of Alberta and Ontario, included as part of the competitive (or quasi-competitive) generation and retail segments.

Figure 21 – Permissibility of Regulatory Levers

		AB	BC	MB	NB	NL	NT	NS	NV	ON	PEI	QC	SK	YK
Process	Optimize compliance and reporting obligations	●	●	◐	●	●	●	●	◐	●	●	●	○	●
	Streamline regulatory proceedings	●	●	●	●	●	●	●	●	●	●	●	○	●
	Implement mandatory recurring policy reviews	◐	◐	◐	◐	◐	◐	●	◐	◐	◐	◐	○	◐
Framework	Adopt alternative forms of regulation	●	●	○	◐	◐	◐	◐	○	●	◐	◐	○	○
	Restructure rates and charges	●	◐	◐	●	●	●	●	○	◐	●	●	◐	●
	Mandate flexible customer arrangements	◐	○	◐	◐	○	◐	◐	○	◐	○	◐	○	○
	Change interconnection and compensation regime for distributed energy resources	○	○	○	◐	●	○	●	○	◐	●	●	○	◐
	Establish alternative treatment for stranded assets	◐	●	◐	○	●	◐	◐	○	●	●	●	○	●
	Relax the treatment of affiliates	◐	●	○	○	◐	○	●	○	●	○	●	○	◐
	Encourage / incentivize applied R&D and technology demonstration	○	○	◐	◐	○	○	◐	○	◐	◐	●	○	◐
	Deem some services eligible for full, partial or conditional deregulation	○	○	○	●	○	●	○	○	○	○	○	○	○

In reviewing legislation across Canada, certain jurisdictions such as New Brunswick and Northwest Territories provide regulators the right to forebear. Where the right to forebear has been expressly written within legislation, the respective regulators are granted the ability to forebear on existing elements of

utility franchises. Where legislation is not explicit, respective regulators typically do not have the ability to forebear on existing elements. However, there is a distinction between ability to forebear on existing elements of utility legislation, and on new elements of utility franchises (such as determining if new utility activities can be regulated). For example, through the Affiliates Relationship Code, the OEB regulates new utility activities. This could include granting an affiliate the ability to conduct non-wires distribution business. Through this code, the OEB also ensure ratepayers are protected from harm that may arise as a result of dealings between the utility and their affiliate.

Absent clear direction from government through new or modified legislation, it falls on the regulator to interpret its mandate and the bounds of the existing legislation. The analysis underpinning this paper suggests that there is some flexibility within the current legislation in most provinces and territories for regulators to adapt the regulatory landscape to be responsive to the disruption impacting the sector. These options should be explored more fulsomely for legality, potential impact, and preferred structure given the specific circumstances in each jurisdiction.

APPENDIX A. CORE FUNCTIONS, DETAILED DESCRIPTIONS

A.1 Alberta

Based on the legislation governing the AUC, the following core functions were identified as part of the AUC's mandate.

Figure 22 – AUC Core Functions

Core Function	Description
License Utilities	Companies who propose to construct or rebuild electric generation, transmission or distribution facilities in Alberta, must apply to the AUC for siting approval. However, the AESO is the agency that processes and makes decisions on system access service requests. Electric retailers obtain market participant status with the AESO and are licensed by Service Alberta under the Fair Trading Act (Energy Marketing Regulation)
Service Territory	The AUC is responsible for approving changes to the designated service territories for distribution utilities. Service territories in Alberta have for the most part been determined already, based upon exclusive franchise agreements
Leave to Construct	The AUC is responsible for the procedures and processes applicable to locating, building, constructing and operating facilities or infrastructure over which the AUC has jurisdiction
Revenue Determination	The AUC is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable
Rate Design	The AUC is responsible for approving certain line items on electricity bills (i.e., electricity rates, transmission rates, delivery rates, balancing pool riders etc.)
Codes & Rules	The AUC is responsible for developing standards, practices, codes of practice, guidelines, objectives or methods as it relates to the Alberta Utilities Commission Act
Monitor Performance & Enforce Compliance	The AUC has established the Market Surveillance Administrator (MSA) that is responsible for monitoring performance and ensuring compliance from market participants in Alberta. While the MSA is responsible for monitoring and investigating participants compliance with market rules, the AUC has the authority to enforce administrative penalties
Adjudication & Public Participation	The AUC is responsible for facilitating consumer participation throughout the adjudication process for utility applications and policy initiatives
Affiliate Regulation	The AUC is responsible for affiliate regulation, and has also established the Market Surveillance Administrator that is responsible for surveillance and investigations regarding the relationship between electricity distributors and transmitters and their respective affiliated companies
M&A and Ownership Changes	The AUC is responsible for approving electricity sector mergers, amalgamations, acquisitions and divestitures – the no harm test is generally used in these decisions

Core Function	Description
Implement Government Reform & Policies	The AUC is responsible for implementing directives that have been approved by the Lieutenant Governor in Council
Innovation & Modernization	The AUC is not directly responsible for initiatives that will innovate and modernize the electric grid, however can be mandated by government to implement innovation and modernization objectives (i.e., Renewable Electricity Act, 2016)

A.2 British Columbia

Based upon the legislation governing the BCUC, the following core functions were identified as part of the BCUC’s mandate

Figure 23 – BCUC Core Functions

Core Function	Description
License Utilities	The BCUC is responsible for licensing energy companies
Service Territory	The BCUC is responsible for granting energy companies the right to include or exclude service areas under license agreements, however British Columbia consists mainly of two utilities, vertically integrated BC Hydro and FortisBC who’s service territories are clearly defined. There are also several municipal electric utilities and small scale privately owned electric utilities – they are electricity resellers with the power coming from BC Hydro
Leave to Construct	The BCUC grants Certificates of Public Convenience and Necessity to public utilities; these certificates are for privileges, concessions or franchises related to the construction and operation of public utilities. The BCUC is responsible for granting approval to public utilities for construction, expansion, or reinforcement of public utility plant – however, the government of British Columbia can also exempt projects, programs and expenditures from the BCUC’s review; the government of British Columbia has done this under the Clean Energy Act and in 2010 and excepted several large projects from being reviewed by the BCUC (i.e., Site C dam, Northwest transmission line, power supply proposals from independent power producers, smart meter programs, etc.)
Revenue Determination	The BCUC is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable, however as mentioned above the British Columbia government has in the past superseded BCUC approval for several large projects. Furthermore, the BC Government has also provided binding direction to BCUC regarding other aspects of BC Hydro’s revenue requirements as set out in the Utilities Commission Act.
Rate Design	The BCUC is responsible for setting line items on electricity bills (i.e., electricity rates, delivery rates etc.), however there are line items that are set by various levels of governments (i.e., BC Carbon Tax, Innovative Clean Energy Fund Levy etc.)
Codes & Rules	The BCUC is responsible for determining and setting just and reasonable standards, classifications, rules, practices or service to be used by a public utility
Monitor Performance & Enforce Compliance	The BCUC is responsible for general supervision of all public utilities and is also responsible for keeping itself informed on the conduct, compliance and any other matter in the BCUC’s jurisdiction in regards to public utilities
Adjudication & Public Participation	The BCUC is responsible for facilitating consumer participation throughout the adjudication process for utility applications, however as mentioned above the British Columbia government has in the past superseded BCUC approval for several large projects

Core Function	Description
Affiliate Regulation	The BCUC is responsible for granting a public utility the right to operate a franchise and can cancel or suspend the right to operate the franchise after a hearing if deemed appropriate
M&A and Ownership Changes	The BCUC is responsible for approving electricity sector mergers, amalgamations, acquisitions and divestitures
Implement Government Reform & Policies	The BCUC is responsible for implementing directives that have been approved by the Lieutenant Governor in Council, however for British Columbia, there have been instances where government has superseded the BCUC in matters within the BCUC’s legislative power
Innovation & Modernization	The BCUC is not directly responsible for initiatives that will innovate and modernize the electric grid, however can be mandated by government to implement innovation and modernization objectives (i.e., Clean Energy Act, 2010). The Clean Energy Act includes provisions with respect to Smart Meters and Smart Grid. The BC Government also issued Smart Meter and Smart Grid Regulation; Smart Meters are now for the most part deployed throughout BC. Because of the broad definition of “public utility” activity in legislation, the BCUC has some influence in the development of various technologies in the province (i.e., Net metering, industrial customer-owned generation, independent power producers etc.). For example, the BCUC sets rates for the incumbent utility that receives the excess generation from a net metering customer (such rates might help or hinder the deployment of such technologies). Currently, the BCUC has an inquiry underway into the regulation of public Electric Vehicle Charging service (which is currently defined as public utility activity under the Utilities Commission Act)

A.3 Manitoba

Based upon the legislation governing the MB PUB, the following core functions were identified as part of the MB PUB’s mandate.

Figure 24 – Manitoba PUB Core Functions

Core Function	Description
License Utilities	Manitoba Hydro was created and operates in accordance with the Manitoba Hydro Act. The Manitoba PUB does not have regulatory oversight regarding the lease or licensing of a power plant or assets relating to the generation, distribution or supply of power
Service Territory	Manitoba PUB is not responsible for approving designated service territories for distribution utilities. Manitoba Hydro has the exclusive authority to supply power to the region except in the case of established franchises in municipal districts (none of which exist any longer). Only the Lieutenant Governor may authorize persons to supply power to any municipality or locality.
Leave to Construct	Manitoba PUB is not responsible for the procedures and processes applicable to locating, building, constructing and operating facilities or Infrastructure. However, by convention, the Government of Manitoba refers decisions regarding new construction hydro projects to the Manitoba PUB for review and recommendations.
Revenue Determination	Manitoba PUB has oversight of Manitoba Hydro’s electricity rates. It does not have legislative jurisdiction to approve Manitoba Hydro’s major investment decisions or capital expenditures. However, the Government of Manitoba has recently referred Manitoba Hydro’s capital program to the Manitoba PUB for review and recommendation.
Rate Design	No change in electrical rates may be made or new rates for service be introduced without approval of the Manitoba PUB. The Manitoba PUB may recommend rates to the Minister, who then shall report to the Lieutenant Governor, its recommendations for changes to Manitoba Hydro’s rates. The Lieutenant Governor ultimately prescribes the rates
Codes & Rules	The Government of Manitoba adopts reliability standards by way of regulation. Furthermore, reliability standards for Manitoba Hydro cannot require construction or enhancement of facilities. The Manitoba PUB does not establish codes pertaining to reliability standards. Manitoba Hydro may adopt its own standards related to electricity transmission and distribution lines which are interconnected with Manitoba Hydro electrical system, and it may also adopt other codes and standards pertaining to the supply of power such as wiring standards (Canadian Electrical Code). The Manitoba PUB adopts standards for the heights of transmission lines.

Core Function	Description
Monitor Performance & Enforce Compliance	The Government of Manitoba has appointed the Midwest Reliability Organization (MRO) to monitor compliance with reliability standards, by way of regulation. If the MRO alleges a violation of reliability standards, the Manitoba PUB adjudicates whether a violation has occurred and may impose financial penalties. Manitoba Hydro monitors and enforces wiring standards, pursuant to The Manitoba Hydro Act. The Manitoba PUB does not monitor wiring standards.
Adjudication & Public Participation	Manitoba PUB is responsible for establishing the role of an intervener and scope of its intervention throughout the adjudication process for establishing Manitoba Hydro's rates
Affiliate Regulation	Manitoba PUB is not responsible for affiliate regulation of Manitoba Hydro
M&A and Ownership Changes	Manitoba PUB does not have legislative jurisdiction to approve electricity sector mergers, amalgamations, acquisitions and divestitures for Manitoba Hydro. However, the last major acquisition in 2002 was referred by the Government of Manitoba to the Manitoba PUB for review and recommendation.
Implement Government Reform & Policies	Manitoba PUB is responsible for implementing and/or supporting directives that have been issued by the Lieutenant Governor in Council
Innovation & Modernization	Manitoba Hydro's mandate includes promotion of the economy and efficiency in the development of generation, transmission, distribution, supply and end use of power. Efficiency Manitoba's mandate includes encouraging innovation in areas related to energy efficiency. Manitoba PUB is not directly responsible for initiatives that will innovate and modernize the electric grid.

A.4 New Brunswick

Based upon the legislation governing the NB EUB, the following core functions were identified as part of the NB EUB's mandate.

Figure 25 – NB EUB Core Functions

Core Function	Description
License Utilities	NB Power is a provincial Crown corporation and is the sole transmission and distribution provider in the Province, except for three established municipal distribution utilities and one small transmission operator. The NB EUB does not oversee the siting approval for companies who propose to construct or rebuild electric generation, transmission or distribution facilities in New Brunswick
Service Territory	The NB EUB is not responsible for approving designated service territories for distribution utilities. Service territories in NB have been determined already, based upon exclusive franchise areas set out in legislation.
Leave to Construct	The NB EUB is responsible to approve, based on prudence, all capital projects of NB Power for which the capital costs exceed \$50 million.
Revenue Determination	The NB EUB is responsible for approving the revenue requirements of NB Power (as an integrated utility) and any other transmitters in the Province to ensure that utilities are meeting consumer needs and that utilities remain financially viable. Municipal utilities are not directly regulated by the NB EUB.
Rate Design	The NB EUB may approve proposed rates, or it may fix rates based on considerations set out in legislation.
Codes & Rules	NB Power is required to develop transmission reliability standards with a standards body, subject to the NB EUB approval or modification. The NB EUB has the authority to make rules regarding all matters within its jurisdiction, subject to the approval of the Lieutenant-Governor in Council
Monitor Performance & Enforce Compliance	The NB EUB establishes and maintains a "NB Compliance Registry" in which it identifies the owners, operators, and users of the NB bulk power system. It also implements a compliance monitoring program to assess compliance with the adopted reliability standards and is responsible for acting to remove entities in violation of these standards
Adjudication & Public Participation	The NB EUB encourages public input in its proceedings typically as an intervener, by providing a letter of commitment, or by making an oral submission at a public forum. Details are set out in Rule 3 of the Rules of Procedure, available on the NB EUB's website
Affiliate Regulation	The NB EUB is not directly responsible for affiliate regulation. The Lieutenant Governor in Council shall approve any subsidiaries, partnerships or project companies of NB Power. Subsidiaries may not, without approval, carry out activities for NB Power that require the Lieutenant Governor in Council's approval.
M&A and Ownership Changes	Mergers, amalgamations, acquisitions and divestitures involving NB Power and greater than \$50 million would be subject to NB EUB approval as a capital project. Subsidiaries of NB Power are subject to the approval of the Lieutenant Governor in Council

Core Function	Description
Implement Government Reform & Policies	The NB EUB is responsible for implementing directives and may exercise other powers as required by the Lieutenant Governor in Council
Innovation & Modernization	The NB EUB is not directly responsible for initiatives that will innovate and modernize the electric grid, however can be mandated by government to implement innovation and modernization objectives. The Electricity Act establishes the requirements for a Renewable Portfolio Standard and Demand-Side Management programs.

A.5 Newfoundland and Labrador

Based upon the legislation governing the NL PUB, the following core functions were identified as part of the NL PUB's mandate.

Figure 26 – NL PUB Core Functions

Core Function	Description
License Utilities	Public utilities who propose to construct or rebuild electric generation, transmission or distribution facilities in Newfoundland must apply to the NL PUB for siting approval. Both NLH and NP service retail and general service customers. Under the Electrical Power Control Act, NLH has the exclusive rights to sell electricity to industrial customers or retailers
Service Territory	The NL PUB is responsible for approving extensions of a public utility's service into areas already served by another public utility. NP does not serve Labrador.
Leave to Construct	The NL PUB is responsible for issuing orders approving the construction of lines and plants for public utilities
Revenue Determination	The NL PUB is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable
Rate Design	The NL PUB sets rates based on the cost of service provided for NLH and the NP. The NL PUB has the authority to order that rate schedule for each service offered by the utility
Codes & Rules	The NL PUB is responsible for developing standards, practices, codes of practice, guidelines, objectives or methods as it relates to the Public Utilities Act
Monitor Performance & Enforce Compliance	The Public Utilities Act gives the NL PUB the authority to make examinations and request any information from the public utilities
Adjudication & Public Participation	The NL PUB is responsible for facilitating consumer participation throughout the adjudication process for utility applications and policy initiatives. The government provides a Consumer Advocate to present the consumers in general. In some instances, the PUB holds special sessions where individuals or groups can present their views under less-formal circumstances
Affiliate Regulation	Affiliates that participate in the generation or sales of electricity are regulated by the NL PUB, unless exempted by legislation or order of the Lieutenant Governor in Council
M&A and Ownership Changes	The NL PUB is responsible for approving electricity sector mergers, amalgamations, acquisitions and divestitures
Implement Government Reform & Policies	The NL PUB is responsible for implementing directives and may exercise other powers as required by the Lieutenant Governor in Council

Core Function	Description
Innovation & Modernization	The NL PUB is not directly responsible for initiatives that will innovate and modernize the electric grid, however can be mandated by government to implement innovation and modernization objectives. The NL PUB through its standard procedures may indirectly support innovative grid efforts (e.g. approving NLH net metering request)

A.6 Northwest Territories

Based upon the legislation governing the NT, the following core functions were identified as part of the NWT PUB’s mandate.

Figure 27 – NT PUB Core Functions

Core Function	Description
License Utilities	The NT PUB is responsible for permitting electric franchises in the NT
Service Territory	The NT PUB is responsible for approving designated service territories for distribution utilities within municipalities. The Minister is responsible for designating service territories outside a municipality.
Leave to Construct	The NT PUB is responsible for the procedures and processes applicable to locating, building, constructing and operating facilities or infrastructure over \$5,000,000 or 10% of the utility’s rate base
Revenue Determination	The NT PUB is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable
Rate Design	The NT PUB has the authority and flexibility to set rates for utilities to earn a fair return on
Codes & Rules	The NT PUB is responsible for setting standards for rates, filing procedures, safety, extension of service and other factors it deems necessary
Monitor Performance & Enforce Compliance	The NT PUB has the authority to monitor and enforce compliance for utility rates and services
Adjudication & Public Participation	The NT PUB is responsible for facilitating consumer participation throughout the adjudication process for utility applications and policy initiatives
Affiliate Regulation	There is no language within NT PUB governing legislation that explicitly provides it with regulatory authority over utility affiliates. The NTPC, the major utility in the NT is permitted under current legislation to have subsidiaries that do not operate within electric distribution with approval of the Executive Council and does not require NT PUB approval
M&A and Ownership Changes	The NT PUB is responsible for approving electricity sector mergers, amalgamations, acquisitions and divestitures
Implement Government Reform & Policies	The NT PUB is responsible for implementing directives that have been issued by the Executive Council
Innovation & Modernization	The NT PUB is not directly responsible for initiatives that will innovate and modernize the electric grid, however can be mandated by government to implement innovation and modernization objectives

A.7 Nova Scotia

Based upon the legislation governing the NSUARB, the following core functions were identified as part of the NSUARB’s mandate.

Figure 28 – NSUARB Core Functions

Core Function	Description
License Utilities	The NSUARB does not license utilities, however the NSUARB is responsible for issuing licenses to retail suppliers to enable them to sell renewable low impact electricity
Service Territory	By way of issuing a “certificate of present or future public convenience”, the NSUARB is responsible for approving designated service territories for transmission and distribution utilities, however service territories in Nova Scotia have for the most part been determined already, based upon exclusive franchise utilities. The NSUARB has authority to extend a utility’s service territory and provide resolution in the disagreement of the service territory between public utilities. Beyond NSPI, the NSUARB also oversees 6 municipal electric utilities in Nova Scotia
Leave to Construct	The NSUARB is responsible for approving the locating, building, constructing and operating facilities or infrastructure for capital expenditures exceeding \$250,000. NSPI may also submit an annual capital expenditure plan for the approval to the NSUARB.
Revenue Determination	The NSUARB is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable
Rate Design	The NSUARB may instruct public utilities to proceed or modify any proposed rate tariffs. The NSUARB may determine a separate rate base for different utility offered services
Codes & Rules	The Minister is generally responsible for developing standards, practices, codes of practice, guidelines, objectives or methods as it relates to the Electricity Act. The NSUARB is required to set standards related to customer service, electricity requirements, and the construction and repair of electrical wires and poles. The NSUARB can also administer penalties for non-compliance.
Monitor Performance & Enforce Compliance	The NSUARB directly monitors and enforces the compliance of public utilities. It may require any information from the utility. Compliance is enforced after the NSUARB has conducted a hearing and issued an order. The NSPI may submit an annual capital expenditure plan to the NSUARB for review and approval. Electric reliability is the responsibility of the Nova Scotia Power System Operator, which is legally part of NSPI, but functionally separate. Since 2011, the NSUARB is responsible for overseeing NSPI’s compliance with NERC reliability standards and the Northeast Power Coordinating Council (NPCC) Regional Reliability Criteria. Reliability standards and regional reliability criteria are submitted to the NSUARB for approval in Nova Scotia and the NSUARB has a process for approval of them.

Core Function	Description
Adjudication & Public Participation	The NSUARB is responsible for facilitating consumer participation throughout the adjudication process for utility applications and policy initiatives. The Governor in Council or the NSUARB appoints a consumer advocate and small business advocate to participate in public hearings, and retains experts to represent the interests of residential and small business consumers.
Affiliate Regulation	The NSUARB governs transactions between NSPI and its affiliates to ensure NSPI’s work is in the best interest of Nova Scotia’s customers. The NSUARB requires compliance by NSPI with a NSUARB-approved Affiliate Code of Conduct and NSPI is subject to annual reporting on its affiliate transactions and its compliance with the Affiliate Code of Conduct is subject to audit by the NSUARB.
M&A and Ownership Changes	The NSUARB is responsible for approving electricity sector mergers, amalgamations, acquisitions and divestitures
Implement Government Reform & Policies	The NSUARB is responsible for implementing directives that have been enacted by the Minister
Innovation & Modernization	NSUARB’s enabling statutory language does not speak to a specific mandate to oversee initiatives to innovate and modernize the electric grid, however the NSUARB does have general supervision over the activities of EfficiencyOne, the electricity efficiency and conservation franchise holder. In 2017 the NSUARB did not approve NSPI’s ownership of electric vehicle chargers as EV charging stations are not integral to the production, transmission, delivery or furnishing of electrical energy and as such are not a regulated utility service under the Public Utilities Act
	The NSUARB is also responsible for the administration related to the interconnection procedures, transmission tariffs or a distribution tariffs, market rules, and the licensing of retail renewable energy suppliers

A.8 Nunavut

Based upon the legislation governing the URRC, the following core functions were identified as part of the URRC’s mandate.

Figure 29 – URRC Core Functions

Core Function	Description
License Utilities	The Minister is responsible for granting energy companies the right to engage in the supply of electricity, not the URRC
Service Territory	The QEC is the only generator and distributor in Nunavut. The URRC is not responsible for approving designated service territories for distribution utilities
Leave to Construct	The Minister is responsible for the procedures and processes applicable to locating, building, constructing and operating facilities that exceed \$5,000,000. The Minister may seek the advice of the URRC
Revenue Determination	The URRC is responsible for recommending the approval of revenue requirements to the Minister, however is not responsible directly for approving revenue requirements
Rate Design	The Minister may set guidelines for URRC to determine fair and reasonable rates
Codes & Rules	The URRC is not responsible for developing standards, practices, codes of practice, guidelines, objectives or methods as it relates to the Utility Rates Review Council Act
Monitor Performance & Enforce Compliance	The URRC can request information however does not directly monitor performance or enforce compliance. The URRC has the authority to require utilities to provide any relevant information, however this mostly pertains to the review of utility rate applications
Adjudication & Public Participation	The URRC is responsible for facilitating consumer participation throughout the adjudication process for utility rate applications
Affiliate Regulation	The URRC is not directly responsible for affiliate regulation. Under the Qulliq Energy Corporation Act, the Commissioner in Executive council regulates the treatment of the QEC’s affiliates
M&A and Ownership Changes	The Minister, not the URRC, is responsible for approving electricity sector mergers, amalgamations, acquisitions and divestitures
Implement Government Reform & Policies	The URRC is responsible for implementing directives that have been approved by the Minister
Innovation & Modernization	The URRC is not directly responsible for initiatives that will innovate and modernize the electric grid, however can be mandated by government to implement innovation and modernization objectives

A.9 Ontario

Based upon the legislation governing the OEB, the following core functions were identified as part of the OEB’s mandate.

Figure 30 – OEB Core Functions

Core Function	Description
License Utilities	The OEB is responsible for licensing storage, generators, transmitters, distributors and retailers
Service Territory	The OEB is responsible for granting licensing storage, generators, transmitters, distributors and retailers the right to include or exclude service areas under license agreements, if in the public interest
Leave to Construct	The OEB is responsible for granting approval to transmitters and distributors for construction, expansion, or reinforcement of electricity transmission and distribution lines or interconnections
Revenue Determination	The OEB is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable
Rate Design	The OEB is responsible for setting certain line items on electricity bills (i.e., electricity rates, delivery rates etc.), however there are line items that are set by the system operator (IESO). Further, the OEB is responsible for making changes to rates in accordance to government direction (i.e., Fair Hydro Plan Act)
Codes & Rules	The OEB is responsible for governing energy industry participants through certain codes and rules that the OEB publishes and may amend. These codes and rules include, but are not limited to, accounting and reporting requirements, license requirements, smart meter funding and cost recovery etc.
Monitor Performance & Enforce Compliance	The OEB is responsible for monitoring performance and ensuring compliance from storage, generators, transmitters, distributors and retailers in Ontario
Adjudication & Public Participation	The OEB is responsible for facilitating consumer participation throughout the adjudication process for utility applications and policy initiatives
Affiliate Regulation	The OEB is responsible for setting out the standards and conditions for interaction between electricity distributors and transmitters and their respective affiliated companies
M&A and Ownership Changes	The OEB is responsible for reviewing and approving electricity sector mergers, amalgamations, acquisitions and divestitures
Implement Government Reform & Policies	The OEB is responsible for implementing directives that have been approved by the Lieutenant Governor in Council

Core Function	Description
Innovation & Modernization	The OEB is not directly responsible for initiatives that will innovate and modernize the electricity grid outside of legislation, however is mandated under the OEB Act to facilitate the implementation of a smart grid in Ontario. Furthermore, it can be mandated by government to implement innovation and modernization objectives (i.e., Green Energy and Green Economy Act, 2009)

A.10 Prince Edward Island

Based upon the legislation governing IRAC, the following core functions were identified as part of IRAC's mandate.

Figure 31 – IRAC Core Functions

Core Function	Description
License Utilities	While IRAC is responsible for issuing permits for service under the Electric Power Act, Maritime Electric is broadly given exclusive transmission and distribution rights
Service Territory	While IRAC does have the authority to issue, amend, or cancel permits, it for the most part is not responsible for establishing service boundaries as Maritime Electric is the sole provider of electricity, except where municipalities have service rights under the Electric Power Act
Leave to Construct	IRAC's responsibility for the procedures and processes applicable to locating, building, constructing and operating facilities or infrastructure over which IRAC has jurisdiction was repealed in 2003 under the Electric Power Act
Revenue Determination	IRAC is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable
Rate Design	IRAC may determine and fix a separate rate based for different provided services
Codes & Rules	IRAC is responsible approving or determining codes and rules as they relate to electricity in Prince Edward Island
Monitor Performance & Enforce Compliance	At a minimum, all public utilities must make an annual report to IRAC. IRAC may call on the public utility to furnish information at any point. All orders IRAC issues shall have the force of the law
Adjudication & Public Participation	IRAC has the authority to facilitate consumer participation throughout the adjudication process for anything under its jurisdiction
Affiliate Regulation	IRAC prohibits public utilities from selling or transferring part of its property associated with its operation without approval, it is not directly responsible for affiliate regulation
M&A and Ownership Changes	IRAC has the authority to regulate franchises associated with public utilities. Maritime Electric is an indirect wholly-owned subsidiary of Fortis
Implement Government Reform & Policies	IRAC is responsible for inquiring into and may relate provision of services as directed by the Lieutenant Governor in Council

Core Function	Description
Innovation & Modernization	IRAC may direct any public utility to prepare an energy efficiency and demand side management plan, subject to IRAC’s approval. The PEI Energy Corporation is tasked with the development of energy systems in “an economic and efficient basis”. It provides guidance to the government for the formulation of provincial policy, programs, legislation and agreements. IRAC may instruct public utility to purchase electricity or lease capacity from the PEI Energy Corporation’s facilities to ensure “reasonable safe and adequate service... as changing conditions require”

A.11 Québec

Based upon the legislation governing the Régie, the following core functions were identified as part of the Régie’s mandate.

Figure 32 – The Régie’s Core Functions

Core Function	Description
License Utilities	The Régie is not responsible for licensing utilities in Québec. Hydro-Québec has exclusive rights under the Act respecting the Régie de L’énergie to distribute electricity throughout Québec
Service Territory	The Electric power distributor, Hydro-Québec has exclusive rights under the Act respecting the Régie de L’énergie to distribute electricity throughout Québec, except in a few cases
Leave to Construct	The Régie is responsible for granting the electric power carrier & distributor the right to extend, modify or change the use of their transmission and distribution systems
Revenue Determination	The Régie is responsible for approving revenue requirements to ensure that utilities are meeting consumer needs and that utilities remain financially viable
Rate Design	The Régie is responsible for setting rates to allow utilities to recover their annual costs and to make a reasonable rate of return
Codes & Rules	The Régie is responsible for governing energy industry participants through certain codes and rules. These codes and rules include, but are not limited to, accounting and reporting requirements, reliability standards, and cost recovery
Monitor Performance & Enforce Compliance	The Régie is responsible for monitoring performance and ensuring compliance from distributors to ensure that consumers are adequately supplied
Adjudication & Public Participation	While there are no established consumer advocates in Québec, the Régie is responsible for facilitating consumers’ participation throughout the adjudication process for any matter within its jurisdiction or as required by the Minister of Energy and Natural Resources on any energy matter.
Affiliate Regulation	The Régie is responsible for authorizing codes of conduct for electric power carriers and distributors and oversees their proper application. These codes govern the relationship between affiliates.
M&A and Ownership Changes	The Régie is not responsible for electricity sector mergers, amalgamations, or acquisitions. Shares of Hydro-Québec are part of the domain of the state and are allotted to the Minister of Finance
Implement Government Reform & Policies	The Régie considers directives issued by the Minister in exercising its authority as provided to it by law
Innovation & Modernization	The Régie can authorize innovation and modernization initiatives provided that it is permitted and interpreted within the limits of the Act respecting the Régie d’énergie and furthers the Québec government’s energy policy

A.12 Saskatchewan

Based upon the legislation governing the various regulators of SaskPower, the following core functions were identified.

Figure 33 – The Government of Saskatchewan & the CIC's core functions

Core Function	Description
License Utilities	Under the Power Corporation Act, SaskPower is granted exclusive rights to supply, transmit, distribute and sell electrical energy, except portions of the City of Saskatoon and the City of Swift Current. Subject to the Lieutenant Governor in Council's approval, these cities may contract with SaskPower for the bulk purchasing of electricity for distribution. Any additional utility licensing would require a legislative amendment
Service Territory	SaskPower has the exclusive rights to supply, transmit, distribute and sell electricity in the province of Saskatchewan
Leave to Construct	The CIC requires SaskPower to submit capital projects for approval, however the government of Saskatchewan may also review large scale capital projects for approval
Revenue Determination	The Saskatchewan Rate Review Panel reviews rate proposals by SaskPower and provides opportunity for public questions and comments. It provides a report to the Government of Saskatchewan with recommendations on electricity rate changes
Rate Design	The Government of Saskatchewan ultimately approves the rate designs and sets utility rates
Codes & Rules	The CIC is responsible for governing the Crown subsidiaries and may make orders and issue directives regarding codes and rules related to SaskPower
Monitor Performance & Enforce Compliance	The CIC is responsible for monitoring performance and ensuring compliance for all subsidiary Crown corporations
Adjudication & Public Participation	The CIC is not responsible for facilitating consumer participation throughout the adjudication process for utility applications and policy initiatives. The Rate Review Panel provides for public participation during the rate setting process
Affiliate Regulation	The CIC is responsible for regulating all Crown corporations and their subsidiaries. For example, SaskPower's wholly-owned subsidiary, NorthPoint is involved in electrical energy marketing and trading, risk and contract management, and market settlement activity
M&A and Ownership Changes	Lieutenant Governor in Council has the authority to approve acquisitions and ownership changes for Crown corporations and their subsidiaries

Core Function	Description
Implement Government Reform & Policies	The CIC is responsible for implementing directives that have been approved by the Lieutenant Governor in Council
Innovation & Modernization	The CIC is not directly responsible for initiatives that will innovate and modernize the electric grid, however can be mandated by government to implement innovation and modernization objectives. Under current legislation, SaskPower offers a variety of DSM programs, including net metering programs and demand response programs. The government has put forth regulations limiting the development of coal-fired power plants and has set forward carbon-reduction goals of reducing GHG emissions and increasing renewable generation capacity ⁷

⁷ *Prairie Resilience: A Made-in-Saskatchewan Climate Change Strategy*, Government of Saskatchewan

A.13 Yukon

Based upon the legislation governing the YUB, the following core functions were identified as part of the YUB’s mandate.

Figure 34 – YUB Core Functions

Core Function	Description
License Utilities	The YUB is responsible for licensing public utilities in the Yukon
Service Territory	Under the <i>Public Utilities Act</i> , the Commissioner in Executive Council may revoke or vary the terms of conditions for any franchise. The YUB, may make orders to determine a public utility’s service area and may require a public utility to expand its existing services. The YUB is responsible for approving designated service territories for distribution utilities, however service territories in Yukon have for the most part been determined already, based upon exclusive franchise agreements
Leave to Construct	The YUB is responsible for reviewing the applications for locating, building, constructing and operating facilities or infrastructure. The YUB then issues recommendations to the Minister who may grant, refuse, or amend the application
Revenue Determination	The YUB is responsible for approving revenue requirements to ensure that public utilities are meeting consumer needs and that utilities remain financially viable
Rate Design	The YUB may adopt any just and reasonable basis for determining a method of calculating a fair return for utilities in Yukon
Codes & Rules	The YUB is responsible for developing standards, practices, codes of practice, guidelines, objectives or methods as it relates to the <i>Public Utilities Act</i>
Monitor Performance & Enforce Compliance	The YUB is responsible for monitoring and enforcement. It may review the affairs, earnings, accounts, or any matter pertaining to the provision of services with respect to the production, transmission, delivery or furnishing of electricity. Under the <i>Public Utilities Act</i> , public utilities must make an annual report showing its rates and financial statements.
Adjudication & Public Participation	The YUB is responsible for facilitating consumer participation throughout the adjudication process for utility applications and policy initiatives. The YUB may determine if it is in the public’s best interest to make a hearing open or private
Affiliate Regulation	Under the Corporation Act, any subsidiary of the Yukon Development Corporation, who operates a “public utility operation” is subject to the rules set out in the <i>Public Utilities Act</i> and the regulatory oversight of the YUB. Under the current legislation, the YUB is not mandated to not monitor the relationship between public utilities and their affiliates outside of procurement and distribution of electricity
M&A and Ownership Changes	Under the current legislation, the YUB is not responsible for approving electricity sector mergers, amalgamations, acquisitions and divestitures
Implement Government Reform & Policies	The YUB is responsible for implementing directives that have been approved by the Commissioner in Executive Council. The YUB may request the Commissioner in Executive Council to issue a decision on issues related to its normal course of business

Core Function	Description
Innovation & Modernization	The YUB is not directly responsible for initiatives that will innovate and modernize the electric grid, however can be mandated by government to implement innovation and modernization objectives