

Regulations and the Environment

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The Canadian Environment

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Introduction

Environmental scientists need to know their regulations. Some scientists will even have to work with the legal system. Even environmental researchers need to stay in compliance. No matter the environmental field of study, environmental concerns are heavily regulated.

So, a career in environmental science will bring the professional into close contact with regulations. Including regulating the profession itself.

The professional might be applying for a permit, completing a form or helping to keep an organization in compliance. This means that every professional must have some understanding of the law and how regulations work.

We are going to examine the Canadian context. Canada is heavily influenced by the United States of America (US) and by the United Kingdom (UK). We have inherited a system that is based heavily on the UK experience, so the occasional UK reference is interesting.

The following chapters will help introduce some basic concepts and some important Canadian regulations.

But it is worth mentioning a couple of caveats:

- this and all chapters are intended in context of Canadian regulations
- this is not presented as a legal text, but more of a guide to Canadian regulators and regulations with some thoughts on our linkage with global legal regimes.
- sometimes, you will need legal guidance. Clearly this is not legal guidance.
- regulations and regulators change. So, it is important to look at the actual regulations and regulators. This point cannot have enough emphasis. Always check for the latest version of a regulation

I believe any regulation should have some clear parameters to be effective. They should be:

- understandable. Some regulations will speak to some very technical topics. But you should still not need a lawyer to understand how to stay in compliance
- efficient. Canada's federal structure sometimes leads us to inefficiencies. The classic example is that we have at least 14 major regulations on waste, one for each jurisdiction
- enforceable. Writing regulations that are not clearly enforceable does not help health, safety or the environment

Regulations set the bar for what is acceptable behaviour. With environmental issues it is always good to remember these are the minimum standards. They are not stretch goals or aspirational goals. They should represent the minimum performance that is acceptable to society. There are some environmental regulatory issues that can get confusing. So we will try to identify some of the confusing areas:

- some entities look like regulators but are not
- sometimes it is challenging to understand who writes the regulations and which are really regulations?

At the end of each chapter there are some questions that will take your learning further. Hopefully this book provides a roadmap to understanding some of the basics of Canadian environmental regulations.

About the Author

The author is in the process of retiring as a sessional instructor at Mount Royal University after 15 years and over 100 courses. One of those courses was called Regulatory Management which is a fourth year course of the BSc degree in Environmental Science. Retirement is a process, you can't really quit cold turkey, so this book is an attempt to capture many things learned over that career of teaching about regulations, compliance and professional responsibilities.

The author was involved in the oil and gas industry for many years working principally in Alberta, but also British Columbia and the Northwest Territories. The author was responsible for remediation programs and compliance programs predominately in the upstream sector, but also worked in the downstream sector as well. This work required the author to become familiar with regulatory environment of Canada.

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PART I
AN INTRODUCTION TO
CANADA

I. Canada

Canada

Canada is a federation. It is also a democracy, and it has a monarchy with a constitution. These simple statements will help us frame our regulatory world. Or we could say in a rather long winded fashion, Canada is a federated, constitutional democratic monarchy.

The Monarchy

Perhaps its good to explain the monarchy in Canada. We have a monarch, whose proper title only when in Canada is King Charles III of Canada. When King Charles is not in residence, his representative is the governor general. The current (sic 2022) governor general is Her Excellency the Right Honourable Mary Simon, Canada's first Indigenous governor general (Governor General of Canada, n.d.).

The monarch and hence the governor general's roles are symbolic and are steeped in honour and tradition. The governor general is appointed by the monarch, at the recommendation of the Canadian prime minister.

There are some interesting terms in Canadian law that reflect the royal tradition. In many acts, there is a statement "*The Crown is Bound.*" This means the government is required to obey the law. It is included so that governments cannot ignore their own laws. It may have different wordings in different jurisdictions, but the meaning will be similar.

Sometimes we might hear an act has been given *royal assent*. This means that the governor general has signed the final version of an

act. It is the final approval, and an act is not a law until it receives royal assent.

The governor general, on instructions from the prime minister, dissolves parliament prior to an election. The governor general also gives the speech the prime minister has prepared prior to a new session of Parliament which is called the *speech from the throne*.

Federation

Canada came to be in 1867 as a result of negotiations between, Upper Canada (Ontario), Lower Canada (Quebec), Nova Scotia and New Brunswick and Prince Edward Island. Prince Edward Island got cold feet at the last moment and did not join until 1873 in exchange for Canada taking over its debt. British Columbia always wanted to be part of the new country but insisted that a railway be built between Canada and British Columbia. British Columbia joined in 1871. (The Canadian Encyclopedia, n.d.).

As a federation, there is a federal government and each province has its own provincial governments. Other provinces than Ontario, Quebec, Nova Scotia and New Brunswick, were created as time went on, with Newfoundland being the last to join Canada in 1949. Saskatchewan and Alberta were created in 1905, just five years before Mount Royal University (MRU) was created as a post secondary institute (Mount Royal University, n.d.). In 1910 MRU was called Mount Royal College and was a private Methodist college until 1966.

Democracy

The absolute power of a monarch started to be eroded in England starting in 1215 by the signing of the Magna Carta. The Magna Carta

was a contract between King John and his barons in an attempt to prevent war. The Magna Carta was an agreement that limited the king's powers. Although it did not start as universal suffrage, democracy grew from the Magna Carta foundation (*British Library, n.d*), and so the young Dominion of Canada inherited the British parliamentary tradition called the Westminster model.

In Canada the House of Commons is often called the lower house. It is elected and has a representative structure called **first past the post**. A representative, called a member of parliament, is elected because they have the most votes of all the candidates in a riding. They may not have the majority of the votes cast. The political party that has the most members of parliament becomes the governing party. Where there are multiple parties, you can have a situation where the party with the most members, does not have a majority of the seats. These governments are called minority governments.

In Canada we do not elect the leader of the country. The leader, called the prime minister, is called from the party with the highest number of seats in Parliament.

The party with the second most seats, forms the Official Opposition. One of the oppositions roles is to challenge the government in its policies and decisions.

The government works on the *confidence of the house*. A simple majority of the house must vote for the government bills and budgets. If a simple majority votes against a government, it loses the confidence of the House and the government is dissolved.

Senate

Rather than a House of Lords as in England, Canada developed an upper house called the Senate. The senate was not and still is not an elected legislative body. Senators are appointed by the governor general on the advice of the prime minister of the federal government.

The senate is intended to be the sober second thought process for government sponsored bills. Senators are appointed by the prime minister, sometimes based on recommendations. So, senators are not elected.

The senate has powers to pass a bill back to the House of Commons for further work.

Because the senate is appointed for life until the senator reaches the age of 75, the senate tends to represent the politics of the prime minister who appointed the majority of them. But it is not a hard and fast rule.

There are 105 senators and every province and territory has representation in the Senate as defined under the constitution. The following is from Canada's senate website :

- Alberta, British Columbia, Manitoba, and Saskatchewan: 6 seats each
- Ontario: 24 seats
- Quebec: 24 seats (Quebec's seats are allocated by electoral division)
- New Brunswick and Nova Scotia: 10 seats each
- Prince Edward Island: 4 seats
- Newfoundland and Labrador: 6 seats
- Yukon, Northwest Territories, and Nunavut: 1 seat each.

(Government of Canada, 2017)

Provincial

Provincial governments have only one house, called the legislature. The legislature is elected in a similar fashion to the House of Commons, and the political party with the most representatives in the legislature forms the government. The leader of the party with

the most votes becomes the premier. Elected members are called Members of the Legislature Assembly (MLAs) (Ruff, 2020).

Provinces can only make laws and regulations based on the authorities granted to them in the constitution. Much of these authorities center on private property and resources.

The King's representative at the provincial level is the lieutenant governor.

Territorial

Territorial governments are similar, except in Nunavut and the Northwest Territories where they do not have political parties. So, in Northwest Territories and Nunavut the ruling cabinet is chosen by consensus from all the elected members of the Assembly. The Yukon has a more traditional system of political parties, similar to the provinces.

Regulatory Structure

In Canada we use common law except in Québec which uses civil Law. Common law is rooted in English common law and is a system that has been developed through judge's rulings. Whereas civil law is rooted in French civil law and its rules (*Justice Canada, 2021*).

To develop a law, first an **act** must be created by the elected officials. An example of an act is the Alberta Environmental Protection and Enhancement Act. The act then creates authorities for regulators to use, including the ability to create regulations under the act. The act also establishes punishments for breaking the law and the scope of the regulations that can be created.

Once an act has been created and a regulator has been authorized, the regulator can create regulations.

This structure exists at the federal level and the provincial levels. It does not exist at a municipal level. Municipalities can only create regulations that the province has given them authority to create. Municipalities create by-laws. Municipalities have elections for councilors and mayors. Mayors are elected directly, as generally there is not a party system at the civic level. Municipal elections work on simple majorities; that is the candidate with the most votes wins.

The Constitution

The original document creating the Dominion of Canada was created in 1867 by the United Kingdom's (UK) Parliament. It was called the British North America Act (BNA). It created the terms of Canada as an independent country. But the BNA was a UK act.

The act was repatriated to Canada and became known as the The Constitution Acts 1867. In 1982 it was modified and renamed The Constitution Act 1982 and the Charter of Rights was added to the constitution (Azzi, 2012).

To make changes to the Canadian Constitution requires a 2/3 majority of the provincial legislatures and that 2/3 has to include at least 50% of Canada's population. A resolution of the House of Commons and the Senate is also required. So given population distributions in Canada and Québec's nationalistic ambitions, it becomes virtually impossible to change the Constitution. To introduce changes would require Québec's consent and Québec will not give consent unless its political demands are met.

Division of Powers

Sometimes cited as three levels of government, power in Canada

is divided into federal, provincial, and municipal authorities (*Parliament of Canada*, n.d.). Perhaps today we might add a fourth level as many Indigenous nations have gained a level of self government.

The federal government has powers under the Constitution that include:

- Currency
- Banking
- Railways
- Essentially anything that crosses borders
- International Affairs
- Indigenous peoples' responsibilities
- Defense
- Coast Guard
- Trade
- Power to tax
- Airports and harbours

Provinces are given powers in the constitution that include:

- Resources including mining and oil and gas
- Health
- Education
- Road regulations
- Private property

Specific control is also granted to provinces over some entities like trust companies and railways that only operate in the province

Cities and towns do not have any constitutionally guaranteed authorities. Their authorities are all handed to them by their respective provincial governments. So municipal authorities may vary from province to province.

Territories also have authorities granted to them by the federal Government.

Environment

At the time of confederation, little was understood about the environment or safety, so were less of a regulatory or any type of concern. As times have changed, environment and safety have become more important. Safety is distinctly regulated in all ten provinces, three territories, the federal government on affairs that directly concern them, and a certain element of safety is now included in the criminal code.

Environment is possibly less clear about the separation of responsibilities and occasionally overlaps are seen. For example for some major projects an environmental impact assessment may be required provincially prior to approval by the provincial regulations. If a project meets certain criteria as defined in the act or regulation the project might also need a federally scoped *Environmental Impact Assessment*. Provinces can have agreements to cooperate that should prevent the project needing to be assessed twice.

Regulators

An act can enable a bureau or division of a government or an other entity as a regulator. The act provides the specific authorities to the regulator to produce detailed regulations within the scope of the act. The regulator will often have the authority to enforce the detailed regulations. The regulator cannot change the terms of the act. That must be done by the appropriate elected body.

Learning Questions

1. Open an act and try to find the expression “The Crown is Bound” or an expression of similar wording. Where does the

expression appear in the act?

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2. Principles of Canadian Environmental Law

Principles

There are some environmental principles that can be found in many international (Campbell-Mohn & Cheever, 2022) and Canadian environmental regulations. These principles may not be universally accepted as legal principles, but they are common themes in modern environmental acts and regulations here in Canada and around the world. It is worthwhile to understand the themes as follows:

Polluter Pays

The principal concept of polluter pays, is that whoever created a mess, like environmental contamination, must clean it up or pay someone else to complete the clean up. For example, if a corporation has a spill, it must clean the spill up to legislated standards. The taxpayer or neighbours should not have to pay for the cleanup (Clark, 2012).

When a property is sold, a buyer should check for liabilities. The cost of cleanup is also sold with the property, unless in the contract the liability is specifically retained by the current owner.

The origins of the concept of polluter pays might be found from the significant legacy environmental contaminations that governments have found themselves inheriting like the Giant Mine in the Northwest Territories.

Consultation

Many environmental acts have a core principle of the obligation to consult with the general public on matters of environmental concern in legislation. On June 1, 2022 a quick search of the Government of Canada website showed they had 806 open consultations, many on environmental issues. (Government of Canada, n.d.)

This core principle is in addition to the rights of Indigenous peoples to be consulted as defined in the Canadian constitution and historical court cases.

Sustainable Development

Sustainable development can be defined as the act of doing today with view to keeping future generations whole. Future generations should have access to resources, should not have to clean up historical contamination and should be able to have an equally productive lives as we have today.

Sustainable Development was discussed and widely disseminated as a principle by the United Nations report “Our Common Future” also commonly known as the Brundtland Report (World Commission on Environment and Development, 1987). Our Common Future defined sustainable development as *“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”*

Acts and regulations are often written with sustainable development in mind so that future generations do not inherit liabilities or have exhausted resources.

Precautionary Principle

In the absence of complete scientific information, the precautionary principle suggests that actions are taken to prevent a problem.

In many situations, science does not have exact answers nor can it explain completely the environmental issue. The Precautionary Principle means in the absence of exact answers, regulations should be written to cautious and preventative.

An example of the precautionary principle in an international treaty is the United Nations Framework Convention on Climate Change. In it the world commits to “act in the interests of human safety even in the face of scientific uncertainty.” (UNFCCC, n.d.)

Transparency

Decisions should be clear for all to understand why the decision was taken. Sometimes this is confused with consensus. Whereas consensus means that everyone will agree to a large extent, transparency means the reasoning is available. Transparency does not mean agreement.

Transparency means that the laws for environment are publicly available. For example Environment Canada and Climate Change lists all the laws it administers and the details are available on the Justice Canada website (Government of Canada, n.d.).

Transparency means that everyone understands why, but does not mean that everyone agrees. The author believes this principle of transparency can be a bit tricky to uphold.

Ecosystem Approach

Many early regulations were written to address a problem like

sewage or waste. Modern environmental understanding is now that ecological systems are interconnected. Problem solving should take a bigger picture ecosystem approach.

An example of an ecosystem approach is considering the ocean's impact on climate and climate's impact on the ocean. The classic use of ecosystems is in regulations that govern biodiversity. For example the UK's Houses of Parliament: Parliamentary Office of Science and Technology defines an ecosystem approach as *"makes explicit the link between the status of natural resource systems and ecosystem services that support human well-being."* (Houses of Parliament, 2012)

Science Based Decisions

This principle suggest that the decisions made by regulations are guided by sound science. The principal is based on the assumption that sound science is available to understand an environmental or health issue (Government of Canada, n.d.).

The author believes this principle can also be bit tricky for politicians, many of whom do not have science backgrounds.

Due Diligence

In many environmental acts a defense of due diligence is allowed under certain circumstances. Due diligence is essentially based on the idea that accidents happen, and in some circumstances they would be difficult to prevent.

For an entity to use due diligence as a defense, the entity would need to prove that they did everything reasonable to prevent the incident from happening. So, what is reasonable? That changes

with time and situation. The test can involve many different considerations:

- Awareness
- Training
- Budgets
- Actions
- Checking
- Supervision
- Auditing
- Management engagement
- Best practices
- Emergency preparedness
- Policies and procedures

It is important to note these are all proactive activities. They must be in place prior to an event happening. So in a court you would need to prove you were doing these things prior to an event happening. If you search the internet, you will find offerings of advice for due diligence. Many are trying to sell something. There is no magic to due diligence; it is about having sound management systems in place and using them.

The Intersection of Sex and Gender with other Identity Factors

It might be arguable whether *The Intersection of Sex and Gender with Other Identity Factors* is a universal environmental principle, but the Canadian federal government does put this clause in the updates to many environmental acts and regulations. Again, arguably, the exact meaning is not yet fully understood. An example of the clause is found in the federal Impact Assessment Act – S.C. 2019, c. 28, s. 1 (Section 22)

Perhaps one way of looking at this clause is to consider if any group of peoples is disadvantaged by the rules or the results of the rules.

A Right to a Healthy Environment

Perhaps a trend in environmental legislation? The right to a healthy environment is sometimes discussed as an environmental bill of rights. This concept is relatively new, perhaps not tested in the courts yet extensively, so perhaps its definition is still undergoing its shape formation. In Canada, perhaps the most visible mention of this is in the act that is currently (sic January 2023) before the House of Commons to modify the Canadian Environmental Protection Act 1999 to include a component on the concept of a right to a healthy environment. According to the federal government they are or will “The Government of Canada recognizes that every individual in Canada has a right to a healthy environment, and that the Government has a duty to protect that right when administering CEPA.” (Canada, 2022)

Section Conclusion

Many Canadian acts have one or more of these principles defined or included in their wording. The concepts can then influence what and how regulations are written under the acts.

Learning Question

1. Open an act and try to find one of the above principles. They

- may be worded differently.
2. Open the Impact Assessment Act and find the section requiring the gender based analysis.
 3. Take one of the discussed principles and write out a definition of what the concept means to you personally.

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3. Principles of International Environmental Law

Perhaps “principles of international law”, is overselling this section. We are really only going to consider one aspect that is becoming more prevalent in Europe, life cycle analysis. As the international community works on its pledges to sustainable development, it looks for tools to help it make decisions that are balanced.

Life Cycle Analysis

Life cycle analysis looks at a project, product or process environmental impact from raw resources to final disposal. Sometimes society is trying to find the right path but the choices are confusing and polarized black and white views are shared. These polarized views hinder our decision making particularly with the environment when environmental issues can be nuanced rather than black and white.

A classic consideration is the question of electric vs gasoline cars. Which is better. We have to consider the carbon content of the vehicle as well as emissions. Battery vehicles tend to much lower, even with the high carbon content of batters, when the are kept longer and driven further. Life cycle analysis can help us conclude it is not one size fits all.

Europe, as in the European Union, is considering life cycle as part of emerging regulations to ensure that balanced choices are being made.

4. Canadian Courts

The Canadian court system has an origin story from the history of the court system of England, but they are not exactly the same. Perhaps a good place to start a discussion is with an overview of the system (click on the word courts below to see a graphic of the court system).

Courts

A good overview of the Canadian court system can be found on one of Canada's judicial webpages (Government of Canada, n.d.). What follows below is a very quick non-legal summary of Canada's court system that might be related to environmental matters (I've left the military courts out).

One of the key aspects of Canadian courts, well really any country's courts, is that they remain independent of the political system.

Supreme Court of Canada

The Supreme Court of Canada is the last legal appeal court in Canada. It hears both civil and criminal cases. It is generally concerned over points of law rather than facts. Facts are generally established in the lower courts. The court was originally created by The Supreme Court Act in 1875. By that act, three of the nine justices are from Quebec (Supreme Court Act, 1985, s6). By tradition three justices are from Ontario, two are from Western Canada or Northern Canada and one is from the Maritimes.

The court will hear many cases relating to the constitution. One case of note with respect to climate change was the review of the federal Greenhouse Pollution Pricing Act, S.C. 2018,c.12, s. 816. The supreme court found the pricing act was within the federal authorities as provided by the constitution. This case was referred

to the supreme court as a case of “as of right” (Supreme Court of Canada, n.d.). This “as of right” occurs when a provincial appeal court opinion is reviewed by the Supreme Court on request of the provincial or federal government.

Not all cases can go directly to the supreme court. A first step is required depending on the case, that essentially asks for approval for the supreme court to hear the case. This is called a “*leave to appeal*”.

Provincial / Territorial Court System

Generally the provincial or territorial court systems have three levels of courts. Using the provincial nomenclature they are as follows (Government of Canada, n.d.):

Provincial Appeal Court

This is the highest court in the provincial system. They can hear appeals from the lower courts (superior and provincial courts). There is also a process in the provincial appeal court that is also called “leave to appeal” Essentially this is the first step to show the appeal court there is a reasonable basis for appeal. If the court grants the leave, it does not mean the case has been decided, just that the court will hear the case.

Superior Court

The superior provincial courts hear trials of the most serious criminal and civil cases. Superior court judges are appointed and

paid by the federal government, while administration of the superior court is left in the care of the province.

The names of the court change with province or territory (CSCJA, n.d.):

- Superior Court in Quebec
- Superior Court of Justice in Ontario
- Court of King's Bench in Alberta, Manitoba, New Brunswick and Saskatchewan,
- Court of Justice in Nunavut
- Supreme Court in Yukon, NWT, Newfoundland, Nova Scotia, PEI, British Columbia

The author believes the later name is just plain confusing.

Provincial Court

This is the lowest court and may have several subsections of courts like small claims court, traffic court, and youth court. Much of the criminal matters in a province or territory are heard at the provincial court level. Also money and family matters are often tried here as well. Provincial judges are appointed by a provincial process.

In Quebec contract and property law is judged using the Quebec civil code (Civil Code of Québec, CQLR c CCQ-1991) while elsewhere in Canada common law is used.

Federal Courts

The federal court concept was created June 1, 1971 and is authorized by the Federal Courts Act, R.S.C., 1985, c. F-7. The federal court can

sit anywhere in Canada and has multiple offices across the country. The judges will travel but by the act all must live in the capital region (Federal Court Act, 1985, s7(1)). They can hear any case involving laws that have been passed by Parliament and where the act states the federal court has jurisdiction. The federal courts have three components:

Federal Appeal Court

The Federal Appeal Court will hear appeals from either the Tax Court or the Federal Court. The court act states that at least five federal appeal court judges must be from Quebec (Federal Courts Act, 1985, s5.4)

Tax Court

Intuitively, the tax court hears tax cases. Although very important, environmental issues do not have a natural fit here.

Federal Court

The federal court hears trial matters that are federal in jurisdiction. So, a bank fraud case might be heard at the federal court as banks are under the federal authorities. Other cases they might hear include are “*intellectual property, maritime law, federal-provincial disputes, and civil cases related to terrorism*” (Justice Canada, n.d.) Other cases include citizenship and areas related to telecommunications or railways that travel interprovincially.

Tribunals

Tribunals have been established in many instances federally and provincially. These tribunals work on specific issues that have been authorized by an act. An example of a tribunal is the Alberta Land and Property Rights Tribunal, in Alberta. Generally they are described as quasi-judicial boards or tribunals. These boards or tribunals make decisions in cases brought before them.

Their decisions can be appealed through the court system. For federal tribunals, the federal court would be the first layer of appeal.

An example of a federal appeal was the appeal of the National Energy Board (NEB) decision on the Trans Mountain Pipeline. It was a long process to review the pipeline that resulted in an approval. then in a first appeal of the original decision, the court reversed the decision to an earlier part of the approval process. After further review a second decision was issued by the NEB to approve the pipeline, an appeal of the second decision was upheld by the federal court, and finally, the last appeal was a leave to appeal to the Supreme Court of the federal appeal court, which was denied. Yes, it was complicated. And expensive.

A provincial tribunal example may be found in the Alberta Energy Regulator (AER) who may establish a tribunal to approve a project for construction. The tribunal decision could be appealed to the provincial superior court, the Alberta Court of King's Bench.

Conclusion

The court system is a tricky place to be. To navigate the court system sensibly it requires legal advice, so as in most of environmental science, prevention is the way to go. For compliance oriented work, the goal is to keep our employer out of the court

Court decisions can help us understand more details about the laws of the land and so sometimes we look closely at their decisions.

Learning Questions

1. Syncrude had an incident at its operations where 31 great blue herons died from landing in a pond without deterrents. The company was charged with violating the federal Migratory Birds Act and also charged with violating the Alberta Environmental Protection and Enhancement Act. They plead guilty. Which Court do you think they appeared in? See if you can find a news report to confirm the court.

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5. Case Law

While we often focus on legislation, some rules are made by precedent setting court rulings. Court rulings either set new law under the common law system, or help define existing regulations. Court cases can also help us understand what the courts view as an adequate due diligence defense.

At the Canadian supreme court they often look at constitutional issues with acts. In recent years the supreme court has been issuing a document called a Case in Brief. These documents are web pages that try to convert the legalistic decisions into something that is more understandable for the average non-lawyer.

There are many, many decisions by courts across the country, so the following is a selection of cases the author believes is interesting to the environmental student. It is not a complete collection.

Greenhouse Gas Pollution Pricing Act

The provinces of Alberta, Saskatchewan and Ontario took the constitutionality of the federal Greenhouse Gas Pollution Pricing Act to their respective provincial appeals courts. While Alberta's court ruled the act was unconstitutional, Ontario and Saskatchewan appeals courts ruled it was constitutional. The supreme court of Canada ruled it was constitutional. The court also ruled it was not a tax but a fee charged for emissions. (Supreme Court, 2021)

With the act ruled constitutional, carbon pricing has become one of the cornerstones for Canada's plan to reduce greenhouse gas emissions.

Plastic Bags

In the case *Canadian Plastic Bag Association v. Victoria (City)*, 2019 BCCA 254 the plastic bag association challenged a Victoria bylaw outlawing the use of plastic bags (CANLII, 2019). The plastic bag association won the court case and the bylaw was rescinded. Municipalities derive their authorities from the provincial government. In, British Columbia (B.C.) the provincial government must approve civic bylaws pertaining to the environment. Victoria did not have this permission and so the court ruled the bylaw was invalid. The lesson learned was that each municipality has to check with the province on environmental issues. The BC Appeal Court agreed, the Supreme Court refused leave to appeal.

Victoria has since received provincial approval to regulate plastic bags and the ban is back.

Environmental Assessments

In the very famous case *Friends of the Oldman River Society v. Canada (Minister of Transport)* the Oldman Dam was approved based on an approval of navigable waters and not on the other areas where the federal government was responsible (The Supreme Court of Canada, 1992). The federal court trial judge agreed with the province, but the federal appeal court, reversed the judgement. The case went to the supreme court, and the reversal was upheld. This meant that a more comprehensive environmental assessment was required by the federal government.

This case is often discussed in terms of kick starting the federal environmental assessment process.

Section Conclusion

There are many cases that have resolved some difficult legal questions. These are just a very brief summary of a very few cases. The examples show how the courts can help us understand the exact meanings of laws. The cases are a reminder that sometimes the law is subject to some ambiguities. But overall, the courts remain an expensive method of understanding the law.

Learning Questions

Find an environmental case that interests you and write a short summary. Canlii has a searchable database of cases.

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6. 1763

A discussion about Canadian environmental regulations would not be complete without some mention of Indigenous contributions. But the challenge of where to start and what to include can be daunting. It not within the scope of this project to be complete. But perhaps it is a beginning. Many informative books have been written on the topic that are worthy of followup reading.

Where to start is a challenging question. Prior to contact, there were many nations, each with their own regulations as we would describe them today. But perhaps it is better left to the voices of the individual nations to express their own laws and regulations. So perhaps a good starting point to understanding current environmental regulations with respect to environmental matters is with the Kings Proclamation of 1763

1763

In 1763, the Sevens Years War between England and France came to an end. With the end of the war, England and King George III took ownership of North America. George issued the Royal Proclamation to cover North America. While it applied to all of North America to start with, when the United States of America declared independence in 1776, it ceased to be effective there.

The Royal Proclamation had some very pertinent information with respect to Indigenous matters. Scholars may argue about whether it still applies, but it is a useful beginning. The Royal Proclamation said Aboriginal title has existed and continues to exist to the land. The Proclamation also stated the land would be considered Aboriginal land until ceded by treaty. By the Proclamation, only the Crown could buy land from Indigenous peoples, it could not be sold to settlers directly.

The Royal Declaration was written by the King and court with a settlers view. No input from Indigenous peoples is noted. You can read more on the declaration here. (UBC, n.d.)

Constitution Act 1867, 1982

Perhaps the next step is to look at the Constitution Act. In 1867, Canada became a country by a law of the House of Commons of the United Kingdom (UK). The Act was called the British North America Act. It remained a UK law until 1982 when it was repatriated, became a Canadian law and renamed the Constitution Act, 1867. The Constitution Act 1982 added to the original and now are often considered as one act.

In the original Constitution Act, 1967 authorities were divided between the federal government and provincial governments. In this act federal responsibility was clear for what today we might call Indigenous issues.

In 1982 the *Charter of Rights* was added to the Constitution Act (Foot, Yarhi, McIntosh, 2020). Also an amending formula for the constitution was added. To change the constitution, any change would need the support of 7 of the 10 provinces and must include at least 50% of the population.

However, we are interested in Section 25 and Section 35 of the Act, which considers Indigenous peoples. The section is explicit in defining aboriginal peoples as the Inuit, First Nations (said in context of the use of the name Indian in the Acts), and Métis peoples. From the constitution, there are important sections. The following two sections are quoted from the Charter:

Section 25

Aboriginal rights and freedoms not affected by Charter

25 *The guarantee in this Charter of certain rights and freedoms shall not be construed so as to abrogate or derogate from any aboriginal, treaty or other rights or freedoms that pertain to the aboriginal peoples of Canada including*

- *(a) any rights or freedoms that have been recognized by the Royal Proclamation of October 7, 1763; and*
- *(b) any rights or freedoms that now exist by way of land claims agreements or may be so acquired*

Section 35

“Rights of the Aboriginal Peoples of Canada

Recognition of existing aboriginal and treaty rights

35 *(1) The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed.*

Definition of aboriginal peoples of Canada

(2) In this Act, aboriginal peoples of Canada includes the Indian, Inuit and Métis peoples of Canada.

Land claims agreements

(3) For greater certainty, in subsection (1) treaty rights includes rights that now exist by way of land claims agreements or may be so acquired.

Aboriginal and treaty rights are guaranteed equally to both sexes”

(4) Notwithstanding any other provision of this Act, the aboriginal and treaty rights referred to in subsection (1) are guaranteed equally to male and female persons.

Duty to Consult

Of great importance in environmental assessments is the Duty to Consult. The duty is to consult with Indigenous peoples whenever their treaty rights might be impacted. The exact definition of the duty has evolved over time, and through court cases. The Duty to Consult applies to all government levels who might approve of a project that could impact Indigenous rights.

The duty was first fully articulated in *Haida Nation v. British Columbia (Minister of Forests)*, 2004 SCC 73 (CanLII), [2004] 3 SCR 511 (Gonzalez, 2020). Where a right exists or a credible claim exists, the constitution requires that there is a duty to engage in fair dealing. The case also established there was a sliding scale of engagement in consultation.

The Honour of the Crown was considered with the duty. No exact legal definition exists, but it means behaving in good faith (Gonzalez, 2020). It does not mean that parties agree, but that there is a good faith meaningful discussion.

In *Clyde River (Clyde River (Hamlet) v. Petroleum Geo-Services Inc.*, 2017 SCC 40 (CanLII), [2017] 1 SCR 1069), the supreme court also established that the the Duty to Consult belonged to the government alone. The government could delegate some tasks to proponents, but the duty belonged ultimately to the Crown. Interestingly Clyde River established that the duty to consult was over the rights held by Indigenous peoples, not the environmental issue itself.

In a case commonly called Trans-Mountain, the case of *Tsleil-Waututh Nation v. Canada (Attorney General)*, the federal appeal court ruled that the National Energy Board (NEB) approval to proceed with the Trans-Mountain extension was rescinded due to the lack of completeness of the consultation. The court ruled that while the consultation happened, it was essentially seen as note taking by the government. The court ruled that the consultation did not engage in meaningful consultation. The government of Canada

remedies this by conducting additional consultation. The process resulted in the Trans-Mountain approval being renewed. The renewed approval was challenged again, however, the consultation this time was certified by the court as being meaningful.

UNDRIP

UNDRIP is the acronym for the United Nations Declaration on the Rights of Indigenous Peoples. The declaration was passed by the United Nations in 2007. Canada and several other countries did not sign the original declaration, however, Canada has reversed its decision and become a signatory.

Canada has passed the United Nations Declaration on the Rights of Indigenous Peoples Act to begin the formal implementation of the declaration. British Columbia has a similar legislation. Canada is developing a program to ensure legislation is compatible with Canadian legislation.

With respect to the duty to consult the following quote is perhaps one of the most interesting of UNDRIP :

Article 19

States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.

Section Conclusion

Indigenous rights and environmental assessments are closely linked but the linkage is still being studied and debated. There are many

views and discussions to be had. This chapter is really just the a brief introduction.

Learning Questions

- Read the UNDRIP. Write out your own definition of what it means to you.
- A second reading that is recommended are the Calls to Action from the Truth and Reconciliation Commission.

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7. Standard Setters

What is a standard? Good question, standards can often seem like regulations. Their authors can also seem like they are regulators as well. Standards associations can be government sponsored, or arms length non-profits or even for-profit private groups. But they are neither a regulator nor a regulation. They have a certain gravitas, but not the force of law on their own.

When a standard is referenced in a regulation, then the effect is the same as that of the law. But without mention of them in the law, they really have no official standing. They may play a part in the concept of due diligence.

Some common entities that should be considered when examining Canadian environmental laws include the following, with the reminder that this also is **not** an exhaustive list:

Canadian Standards Association (CSA) (Canada)

The Canadian Standards Association (CSA) standards sometimes seem like they are the law. This is because their standards are frequently referenced in provincial and federal regulations. The CSA have standards on many different aspects of safety from hard hats to electrical units. They have standards on environmental management (ISO 14000 series) and many other environmental topics. In Canada, the CSA participates in and re-brands many of the ISO standards (CSA Group Registries, n.d.).

The CSA is not a regulator itself.

In Alberta, CSA standards are mentioned 214 times in the OH&S code (Occupational Health and Safety Code AR 191/2021, 2021). Where mentioned in a regulation, a CSA standard is then an integral part of the regulation.

A popular standard for site assessment in Canada is Z768-01

(R2022) Phase I Environmental Site Assessment. The CSA web site notes that ASTM Standard E 1527 was used as a reference for the Canadian standard.

The standards can be purchased from the CSA store which is located at <https://www.csagroup.org/store>. There are some standards that can be viewed by going through provincial occupational and health and safety portals. Sometimes these portals can allow a user to view the standards for free. The CSA store also sells other international standards

International Organization for Standardization (ISO) (International)

ISO is the International Organization of Standardization, which reminds us that perhaps not everyone speaks English as a first language. ISO has written and maintains thousands of standards. The ISO organization has linked their standards to the 17 United Nations sustainable development goals (ISO – Standards, n.d.)

Some popular standards include a series on quality (9000 series), environmental management (14000 series) and information security (27001 series). They have other series including film speed (one of their original standards), standards for children's seats in cars, medical devices, labs risk management, social responsibility, and occupational health and safety. There are a lot of standards. .

ISO standards do not have the weight of law unless incorporated into a country's laws. There are few examples in Canadian environmental law that include use of the standards, with the exception of climate change regulations which refer to international standards. Manufacturers have often adopted the standards and impose them on their suppliers. So, for example if you want to supply car parts to Ford Motor Company you may need to have an ISO 9000 quality control system.

ISO standards can be purchased at their web site, <https://www.iso.org/home.html>, or from the CSA website.

American National Standard Institute (ANSI) (United States)

The American National Standard Institute (ANSI) is focused on developing in an “open, equitable” manner, standards for use in the United States. They also are participating in and selling ISO standards, similar to the CSA (ANSI, n.d.). As with a CSA standard, an ANSI standard can become the law if it is referenced specifically in a regulation.

ANSI is also not a regulator and in a bit of a difference from the CSA, as they have public/private partnerships where the private sector develops standards.

ANSI standards can be purchased at <https://webstore.ansi.org/>

American Society of Testing Materials (ASTM) (International)

The American Society of Testing Materials (ASTM) is an American organization that sets standards for testing fuels, building materials, steel, and many other materials. It had its start in the American railroad industry when railroads were trying to get more consistent rails for its lines.

The society is also part of the International Association of Testing Materials (IATM) which is truly international in scope.

The ASTM also has thousands of standards and contributors from over 100 countries. (ASTM, n.d.) One of its popular standards is ASTM E1527-21, Standard Practice for Environmental Site

Assessment Process. This practice standard is written with United States regulations in mind.

ASTM sells its standards at <https://webstore.ansi.org/>

British Standards Institute (BSI) (United Kingdom)

British Standards Institute, most commonly abbreviated as BSI, began as an outfall of engineering standards discussions that began at the beginning of the 1900s. Similar to the United States' ASTM, the BSI discussions began on steel. Today, BSI reports its standards are used in 193 countries and their catalogue of standards reaches over 95,000 standards (BSI Canada, n.d.).

Similarly, to CSA, BSI will rebrand some ISO standards for use in the United Kingdom. Over the past decade they have been concerned with coordinating the British Standards with European standards. This work may currently be in abeyance.

The BSI operated with a Royal Charter (they will need to be re-appointed by King Charles III) and is the United Kingdom's representative on ISO standards development. BSI also repackages the ISO standards (BSI Canada, n.d.).

Sustainability Accounting Standards Board (SASB) (International)

This rather more recent standard association is the Sustainability Accounting Standards Board. Its mission is to drive common accounting measures of sustainability so investors and other stakeholders can examine and compare corporate efforts to become more sustainable (SASB, n.d.)

Overlap

There is obvious opportunity for overlap. So carefully crafted regulations will allow for equivalents and you may see multiple standards referenced. One example can be found in Alberta's Occupational, Health and Safety Code where both a CSA standard and an ANSI standard are referenced for the same device. The excerpt follows (Occupational Health and Safety Code, AR 191/2021, 220):

“229(3) If a worker must wear full face piece respiratory protective equipment and the face piece is intended to prevent materials striking the eyes, an employer must ensure that the face piece

- (a) meets the requirements of*
- (i) CSA Standard Z94.3-07, Eye and Face Protectors, or*
- (ii) CSA Standard Z94.3-02, Eye and Face Protectors,*
- or*
- (b) meets the impact and penetration test requirements of section 9 of*
- (i) ANSI Standard Z87.1-2003, Occupational and Educational Personal Eye and Face Protection Devices, or*
- (ii) ANSI Standard Z87.1-1989, Practice for Occupational and Educational Eye and Face Protection.*

Many international standards do reference each other, so it is important to understand which standard is relevant to the environmental work at hand.

Climate Change

One of the challenges of combating climate change is how to ensure every country is on the same page. To be equivalent, we need

standards on how to calculate inventories, how to document improvements, and how to trade credit for actions. These issues point to the need to have agreed international standards incorporated into local regulations worldwide.

The Intergovernmental Panel on Climate Change (IPCC) has established many standardized means of considering climate change and the related emissions. An example of a standardized process is the IPCC's "2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories" (IPCC, 2019)

Section Conclusion

The standard setters discussed are only a sample of the world's standard setting organizations. Legally any standard becomes part of a regulation only when they are referred to in the regulation.

They can become a legal issue outside of a regulation though in terms of Due Diligence. If a standard is used by a majority of a sector despite the absence of a legal requirement to do so, the defense of an entity that did everything reasonably to prevent an event might be problematic in the absence of the use of the standard.

Learning Questions

1. In the Alberta OH&S Code, find a reference to a BSI Standard. Is there an equivalent CSA standard?
 - You can find the Code at: <https://www.alberta.ca/occupational-health-and-safety-code-and-explanation-guide.aspxhttps>
2. In the same Alberta OH&S Code, identify another similar type

of standard setting organization?

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PART II
INTERNATIONAL

8. International Influencers

Canada has been and continues to be influenced by international regulations and regulators and treaties. Influence can be driven by harmonization for trade agreements or we simply borrow a good idea. Sometimes the influence is so large that the international standards appear in Canadian regulations.

United States

The United States (US) is a very important trading partner for Canada. We import and export many goods from the United States. Some goods like autos are produced with a complicated supply chain that can cross three countries (Mexico, United States and Canada). For autos it is important to have consistent standards, so the manufacturing is simplified. This holds true for air emissions standards.

We can find US rules referred to in Canadian law. See for example: the federal regulation Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations, SOR/2010-201. US Regulations are cited in Section 11 and qualified in Section 3. Section 3 makes specific mention of the Code of Federal Regulations (CFR), and what does not apply in Canada. We are not subject to US rules, but the standards do apply as they are referred to in Canadian regulations..

US Environmental Protection Agency (US EPA)

The United States Environmental Protection Agency (US EPA) is an iconic regulator. They have many standards that are used across

different countries. But it is confusing because there are other Environmental Protection Agencies and EPA also stands for Environmental Protection Act.

So, a good practice outside of the United States is to refer to the EPA as the US EPA. The US EPA writes and enforces regulations authorized by the US Federal Government. The regulations are found in the US Code of Federal Regulations.

US Code of Federal Regulations (US CFR)

In the United States at the federal level legislation is written into a code called the Code of Federal Regulations (CFR). The Code is divided into “titles” and represents all the areas of the U.S. Federal government through its agencies and executive that they regulate. There are 50 titles in the Code. Title 40 and Title 49 often have environmental references.

An example of a US citation is Title 40, chapter I, subchapter C, part 86. This is the US regulation for “Control of Emissions from New and In-use Highway vehicles and Engines”.

National Oceanic and Atmospheric Administration (NOAA) (United States)

The United States National Oceanic and Atmospheric Administration (NOAA) is part of the United States Department of Commerce (NOAA, n.d.) and has an incredible depth of resources. Is it properly classified as a regulator? Possibly not. It is concerned with research, weather forecasts and climate change. It is an incredibly useful resource. (*National Oceanic and Atmospheric Administration, n.d.*)

My favorite is the hurricane weather map. Try it at:

<https://www.nhc.noaa.gov/gtwo.php?basin=atlc&fdays=2>

National Aerospace and Space Administration (NASA) (United States)

National Aerospace and Space Administration (NASA) has significant climate change research objectives including a number of research satellites tasked with climate related measurements. They have significant climate data accumulated from these satellite missions. (NASA, n.d.)

My favorite is the Mars Lander. Nothing to do with Earth, but one of their experiments is to make oxygen from the Mars atmosphere. That's cool.

Second favorite is the NASA photo of the day. See it at the NASA website. (NASA/Stephanie Plucinsky, 2022)

International

Although of course the United States is international, there are other international organizations that influence either directly or indirectly Canadian regulations.

Arctic Council

Canada is a member of the international Arctic Council which includes all states that have land in the Arctic. The Arctic Council purpose is to encourage coordination between member states (*The Arctic Council*, n.d.). According to the Government of Canada website "In 2017, the eight Arctic Council states also committed

to the aspirational goal of reducing collective emissions of black carbon by 25–33% of 2013 levels by 2025.” (Canada, n.d.)

Aspirational goals are not legally binding but represent a desire. They may not be backed by methodology or plans to achieve the aspirational goal.

The chair of the Arctic Council rotates through the member countries. As of 2022, Russia is the chair and given the current state of Russia’s aggression, the future of the Arctic Council is in question. Meetings have been suspended for an indefinite time period (Arctic Council, 2022)

International Union for Conservation of Nature (IUCN)

The IUCN is the International Union for Conservation of Nature. This is a union of both governments and societies. They work in partnerships to produce resources to help address selected environmental issues including climate change. (IUCN, 2022)

IUCN Red List

Possibly the most well known is the IUCN Red List of threatened species. It is a world guide to threatened species and is exceptionally comprehensive. It is not legally binding on Canada. (IUCNRedList, 2022)

Section Conclusion

Solid environmental regulations have to be based on solid environmental information. No matter how nationalistic we are

about “made here”. sometimes we need information that is beyond our abilities. The United States has some incredible resources that can be used to inform decisions. The United Nations has the power to bring world experts together, so these are influential bodies.

Learning Questions

1. Why would entities from the United States be included in a realtor section?
2. Do the US Entities have any authority in Canada?
3. Why would NOAA be so influential in Canada?

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Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations, SOR/2010-201

Title 40, chapter I, subchapter C, part 86

United States Environmental Protection Agency (US EPA). (n.d). *Home page*. Retrieved on October 1, 2022 from <https://www.epa.gov/>

9. International Influential Regulations

While there are some excellent Canadian regulatory examples, like oil and gas flaring rules in Alberta (Directive 060, Upstream Petroleum Industry Flaring, Incinerating, and Venting), perhaps Canada is not the lead actor on the world stage in terms of environmental regulations. This debate of whether we lead or are green or laggards can get quite heated. (UBC, N.d.).

The author believes that although there are some exceptions, Canada is a follower and we have looked to other jurisdictions for inspiration. So, the following includes a taste of two regulatory influencers.

United States of America (USA) (Federal)

The United States of America (USA) is a democratic republic that has a federal government and fifty state governments. In the United States, air quality is regulated in a different manner than Canada. The federal government has the authority to set the laws for air pollution. Where states have “non-attainment areas”, the states are required to enact rules that will make them comply with the Federal standards.

The Clean Air Act

The current US Clean Air Act (The Clean Air Act 42 U.S.C. §7401 et seq. (1970)) was originally established in 1970, it supplanted an earlier Clean Air Act of 1963 and the Air Pollution Control Act of 1955. . The

official version of the Clean Air Act is available in the *United States Code*, (US EPA, n.d.) was updated in 1977, 1990 and again in 2021.

The 1970 version was arguably the watershed moment as it gave the federal government and the US EPA the authority to set legally enforceable air quality standards. The legislation required that states develop compliance plans to ensure they met the national air quality standards. Canadian rules are slightly more ambiguous on requiring provinces to have non-attainment plans.

The 1970 Clean Air Act also saw the start of the US EPA regulating auto emissions. Today the Act also looks at ozone depleting chemicals and greenhouse gases. (US EPA, 2022.)

Toxic Release Inventory

The Toxic Release Inventory (TRI) was developed by the US EPA as a right to know initiative. It features mandatory reporting of emissions by facilities that meet certain criteria of a given list of chemicals.

The information is then made public so they can understand what chemicals are being released locally. (*Toxics Release Inventory (TRI) Program* | US EPA, n.d.)

United Kingdom (UK)

The United Kingdom (UK) is a democratic representative monarchy. All its laws are made by the democratically elected parliament. There may also be local regulations in England, Northern Ireland, Wales and Scotland.

Perhaps modern air regulations in the UK started in 1952, when London suffered a killing smog. It was predominantly a problem of consumer coal combustion and power plant combustion during a

weather inversion which caused a heavy fog. Many thousands of people lost their lives.

In 1956, the UK Parliament introduced the UK Clean Air Act (The Health Foundation, n.d.). At the time low quality coal was used as a household heating fuel as well as for producing electricity for a post war expanding demand. The act phased out coal and implemented cleaner fuels.

The act was updated in 1968 and then replaced in 1993 by a new Clean Air Act, 1993 (Government of UK, n.d.).

An interesting aspect is that currently a private members bill is being circulated that would bestow clean air as a right. It is called informally Ella's act after a child who died of asthma during a particularly bad air pollution incursion (Fuller, 2022)

The Climate Change Act

The Climate Change Act commits the UK government legally to its target of net zero emissions. Net zero is measured as 100% of 1990 emissions (Climate Change Act, c.27, s1). The act was one of the first to commit a country to net zero, it uses a carbon budget approach to managing down its emissions.

UK Carbon Budget

The United Kingdom has enacted several carbon budgets that describe its legally binding greenhouse gas reductions.

In their latest Carbon Budget issues in April 2021, The UK commits to reducing emissions 78% by 2035 compared to 1990 levels (Gov.UK, 2021). Net Zero (100% of 1990 levels) is still targeted for 2050 in the UK.

Section Conclusion

Both the United States and the United Kingdom have extensive environmental regulations. Arguably their central governments have a clearer authority over environmental issues than Canada's federal government. Despite the differences, their regulatory commitments influence Canada. We can see a direct relationship in Canada of the National Pollutant Release Inventory to the United States Toxic Release Inventory and to the UK's Climate Change Act commitment to Net Zero

Learning Questions

1. Make a table of the United States, Canada's and the UK's climate targets for 2030 and 2050.
2. The United States is effectively setting Canadian standards for vehicle emissions? Why is that?

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10. United Nations

The United Nations (UN) is probably well known to most people, but for completeness, it is good to introduce the United Nations as the organization established after the Second World War to promote peace, dignity and equality on a healthy planet in the world (UN, n.d.)

Today, the United Nations is focused on sustainable development and has established 17 sustainable development goals (SDG). The goals are all interlinked and include the following: (UN, n.d.):

- Goal 1 No poverty
- Goal 2 Zero Hunger
- Goal 3 Good Health and Well Being
- Goal 4 Quality Education
- Goal 5 Gender equality
- Goal 6 Clean water and sanitation
- Goal 7 Affordable and Clean Energy
- Goal 8 Decent Work and Economic Growth
- Goal 9 Industry, Innovation and Infrastructure
- Goal 10 Reduced inequalities
- Goal 11 Sustainable Cities
- Goal 12 Responsible Consumption and Production
- Goal 13 Climate Action
- Goal 14 Life below water
- Goal 15 Life on Land
- Goal 16 Peace, Justice and Strong Institutions
- Goal 17 Partnerships

Check it out at <https://sdgs.un.org/goals>

If we consider in detail Goal 13, Climate Change the UN has established 4 sub-goals;

- Strengthen resilience and adaptive capacity to climate related disasters
- Integrate climate change measures into policies and planning

- Build knowledge and capacity to meet climate change
- Implement the UN Framework Convention on Climate Change

United Nations Environmental Programme (UNEP)

The United Nations Environmental Programme (UNEP) describes themselves as the leading global environmental authority and lead environmental programmes worldwide. UNEP is responsible for stewarding all of the environmental related United Nations Sustainable Development goals. (UNEP, n.d.)

UNEP are influential, but not a regulator. Their website states that they are advocates and leaders.

Food and Agriculture Organization (FAO) (United Nations)

The Food and Agriculture Organization (FAO) is a branch of the United Nations. It's stated aim is to end hunger in the world (FAO, 2022).

The FAO also tracks many environmental issues that range from deforestation to soil salinity. They track eight of the sustainable development goals (FAO, 2021).

United Nations Economic Commission for Europe (UNECE)

United Nations Economic Commission for Europe (UNECE) is part

of the United Nations. It is one of five commissions established to consider economic development across the globe (UNECE, n.d.).

It was established in 1947, to establish economic integration. Although it says Europe in the title, the membership and scope include Canada, the United States and Russia.

The UNECE has also undertaken to support the UN's Sustainable Development Goals and has focused on air pollution as part of its mandate (UNECE, n.d.).

Kunming- Montreal Global Biodiversity Framework

This is a relatively recent development in late December, 2022 of the Kunming-Montreal Global Biodiversity Framework. The framework was signed at COP 15, a conference that was held in Montreal, Canada. 190 countries have agreed at the conference to:

- protect 30% of the planet including oceans, and land
- reduce by \$500 billion worldwide subsidies to the industries causing harm
- cut food waste in half
- progressively flow funds from developed countries to less developed
- Restore or start restoration on 30% of degraded coastal, terrestrial or marine ecosystems

Colloquially it is bound to be known as 30 by 30. If adhered to, this framework will be as important as the framework convention on climate change.

United Nations Framework Convention on

Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change (UNFCCC) came into existence in 1994. The goal of the Convention is to limit average global temperature increase.

The treaty is supported by a United Nations secretariat (UNFCCC, n.d.). The UNFCCC also is the storehouse of the signatories Nationally Determined Contributions (NDC). The reference allows you to look at Canada's official NDC in a later chapter.

Conference of the Parties (COP)

The Conference of the Parties (COP) are the countries who are the signatories to the Paris Accord on Climate Action and the UNFCCC. The parties meet each year, but during covid they skipped a year.

The Conference of the Parties meets regularly to review progress and to bring forward the commitments of the parties. The most recent COP was COP 26 held in Glasgow in October/November 2021 (UN, 2021). The next conference, COP 27, will be held in Egypt.

Intergovernmental Panel on Climate Change (IPCC)

The Intergovernmental Panel on Climate Change (IPCC) is a bureau of the United Nations established in 1988 and is intended to provide a scientific background to the setting of climate policy (IPCC, 2022).

The IPCC does not do original scientific research. They review, collate, and draw conclusions from original science reports. The IPCC experts are drawn from worldwide experts.

The IPCC does not set policy, nor is it a regulator. However, its

scientific reviews underlies much of climate policy and the work of national greenhouse gas inventories including Canada's.

Assessment Reports

The IPCC issues assessment reports on the state of climate change at regular periods. To date (2022) they have issued six reports. As part of each report the IPCC compiles the best information about greenhouse gases and climate change. This advice is used by the Parties to determine their domestic policy on climate change. The reports have an interesting naming convention. To date they have issued (IPCC, 2022):

- FAR – First Assessment Report
- SAR – Second Assessment Report
- TAR – Third Assessment Report
- AR4 – Assessment Report Four
- AR5 – Assessment Report Five
- AR6 – Assessment Report Six

Assessment Report Six (AR6)

Assessment Report Six (AR6) is the latest report by the IPCC presented for COP26. The IPCC presented the report in several sections, the first to be released delved into the science of Climate Change (IPCC, 2022).

The first report was the Science report. It states that climate change is unequivocal. The other three reports of AR6 were released in 2022. (IPCC, 2022) The reports are as follows:

- Climate Change 2021: The Physical Science Basis
- Climate Change 2022: Impacts, Adaptation and Vulnerability

- Climate Change 2022: Mitigation of Climate Change
- Climate Change 2022: Mitigation of Climate Change

The IPCC will also produce a synthesis report written in less technical terminology for policy makers. It is due to be released in September 2022 or early 2023 (IPCC, 2022).

- AR6 Synthesis Report: Climate Change 2022

Section Conclusion

Regulations in Canada for climate change and many other environmental areas are influenced by the requirements of the United Nations. While the work the United Nations does is not law in Canada, their work influences heavily our actions. Confusing and verbose they are, but without question they are important.

Learning Questions

1. How would a United Nations initiative be regulated in Canada?
2. Why would AR6 be important to Canadians?

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II. International Treaties

Treaties are agreements made between countries to achieve certain, and in our context, environmental goals. Treaties are made at the Canada level and are the responsibility of the federal government. The term treaty is used here as a generic term, often the language varies with proper names and terms. Under the Canadian constitution only the Canadian federal government can enter into treaties.

Are treaties law? We need a lawyer to answer that question fully. While some are agreements to cooperate, others maybe legally binding on the countries who sign the treaty. Generally, for legally binding treaties, a Canadian law is passed to enact measures in the treaty that need to be enforced.

Canada has signed many treaties relating to environmental protection. They cover everything from air emissions to polar bears. Some require cooperation, others require specific action. Canada has 4338 (Canada, n.d.) treaties and many are environmentally focused agreements:

- In North America, as of January 2022, Canada is party to approximately 40 treaties. (Canada, 2019)
- With Africa we have only two agreements, (International Environmental Partnerships: Africa – Canada, n.d.)
- Australia and Canada have a treaty on industrial chemicals
- Europe and Canada have three agreements and another three with France directly (International Environmental Partnerships: Europe – Canada, n.d.)
- In Latin America, Canada has direct agreements with 6 countries including Chile and Columbia

In addition to these agreements, Canada is engaged in 117 international agreements as of January 2022. A search of these treaties (sic 2022) shows that fully 107 mention climate as part of

the concept of the treaties. (Participation in International Environmental Agreements and Instruments – Canada, n.d.).

With this number of treaties, we start to understand the complexity of environmental regulations in Canada. Additionally, we cannot possibly cover all of them, so the following is a sampling of some agreements in no order of importance.

Paris Agreement

Perhaps not a treaty in the traditional sense of the word, the Paris Agreement is a legally binding agreement among the world's countries to limit greenhouse gas emissions to limit climate temperature increase to be 1.5 Celsius with a back stop of 2 Celsius (United Nations Climate Change, n.d.)

The agreement is part of the UNFCCC which itself is a treaty (United Nations Framework Convention on Climate Change).

The Paris Agreement was signed in 2015 by over 190 countries. By the terms of the Agreement, every five years, the signatory countries (Parties) will come together to discuss progress and targets. The first scheduled meeting was in 2020, but due to COVID, it became 2021 and commonly called COP 26 (United Nations Climate Change, n.d.)

The Paris Agreement requires each country develop its own *nationally determined contributions* (NDCs). Each country pledges what it can do, so it is unlikely there is any two countries with the same commitments.

Canada's current NDC includes a commitment to net zero by 2050 and a reduction of 40 to 45% of greenhouse gases by 2030.

Agreement Between the Government of Canada and the Government of the United States of

America on Air Quality

This Agreement is a bilateral agreement between Canada and the United States. It was established in 1991 to address concerns of both countries on Acid Rain. The environmental issues were emissions of SO₂ and NO_x into the air causing acid rain. It involved also long-distance transportation of these contaminants (IJC, n.d.)

Later in 2000 an appendix was added to consider the environmental issue of Ground Level Ozone. This resulted in addressing VOCs as well as NO_x.

UNECE Convention on Long-Range Transboundary Air Pollution (CLRTAP)

Established by UNECE, The Convention of Long-Range Transboundary Air Pollution (CLRTAP or sometime just LRTAP) is agreed to by 51 parties that consults, researches, and monitors transboundary air pollution.

This convention meets annually to discuss future plans of implementation of the resulting research and monitoring into mitigation of transboundary pollutants. There are several sub agreements, or as they are called Protocols under this convention (UNECE, n.d.).

1998 Aarhus Protocol

The Persistent Organic Pollutants of 1998 Aarhus Protocol was developed for the LRTAP Convention to consider POPs. It was later eclipsed by the Stockholm Convention (UNECE, n.d.) which looked at world wide perspective.

In the 1998 Protocol there was 16 POPs identified. The following were identified for virtual elimination.

- Aldrin CAS: 309-00-2
- Chlordane CAS: 57-74-9
- Chlordecone CAS: 143-50-0
- DDT CAS: 50-29-3
- Dieldrin CAS: 60-51-1
- Endrin CAS: 72-20-8
- Heptachlor CAS: 76-44-
- Hexabromobiphenyl CAS: 36355-01-
- Hexachlorobenzene CAS: 118-74-1
- Mirex CAS: 2385-85-
- Toxaphene CAS: 8001-35-2

1998 Aarhus Convention

The 1998 Aarhus Convention is then very confusing given the previous notation. Same year, same place name. However, the convention is about the right to know environmental information in Europe (European Commission, n.d.). Two of its main principles are the right to know environmental information and the right to be consulted.

This highlights the trend to name the treaty after the location it was developed in. And in case you wondering, Aarhus is the second city in Denmark. (Denmark, n.d.)

Gothenburg Protocol

The Gothenburg Protocol is designed to “Abate Acidification,

Eutrophication and Ground-level Ozone” according to the UNECE (UNECE, n.d.).

This protocol focuses on the nitrogen cycle. Although it has several documents that are related to nitrogen, there are many documents like “How to measure VOC” (UNECE, n.d.).

The Government of Canada states on its website that “Canada ratified in November 2017 the Gothenburg Protocol and its 2012 amendments under the CLRTAP. The amended Gothenburg Protocol is the first legally binding instrument to include a focus on black carbon” (Canada, 2022).

United Nations Economic Commission for Europe (UNECE) Protocol on Heavy Metals

This Protocol on Heavy Metals might also be listed as the 1998 Aarhus Protocol on Heavy Metals. It focused on emissions of mercury, lead, and cadmium (UNECE, n.d.)

An interesting component of this treaty is the use of the expression best available technology (BAT) to control emissions.

The agreement on mercury has since been overshadowed by the international agreement called the Minamata Convention on Mercury.

Stockholm Convention on Persistent Organic Pollutants (POPs)

The short name is the Stockholm Convention and was designed for countries who signed the Convention to reduce the emissions of POPs. It was signed in 2001 and was developed under the auspices of UNEP (UNEP, 2019).

It started with a list of twelve POPs that includes DDT and

Dioxins. Sixteen additional POPs have been added to the convention.

Minamata Convention on Mercury

Also developed by UNEP, the Minamata Convention on Mercury worked to limit global emissions of mercury. Sources for mercury emissions include coal combustion and also heavy fuel oil to a lesser extent (UNEP, n.d.).

Each of the 137 countries who are signatories must report in 2021 the efforts they have made to comply with the treaty (UNEP, n.d.).

Montreal Protocol on Substances that Deplete the Ozone Layer (Protocol to the Vienna Convention for the Protection of the Ozone Layer)

Often referred to as just the Montreal Protocol, this treaty requires signature countries to reduce and eliminate ozone depleting substances (ODS) from use (UNEP, n.d.).

The Montreal Protocol is often cited as an example of an international treaty that has produced tangible results. It has been amended several times to be current.

Ramsar Convention

The Ramsar Convention on wetlands, was joined by Canada in 1981. It currently has 172 countries signed to the Convention. It aims to protect internationally important wetlands across the planet.

(Ramsar, n.d.) There are currently, as of January 2022, 2,435 designated Ramsar Wetlands in the world.

Canada has 37 wetlands listed as Ramsar wetlands. (Ramsar, n.d.)

Section Conclusion

Environmental issues do not respect political boundaries, so often issues, like climate change, affect many countries. Through the United Nations, and sometimes directly, countries attempt to harmonize their rules or to try to establish new rules. Without a specific internal law, treaties then can be aspirational, rather than legally enforced. Canada has many laws and regulations to implement these treaties.

Learning Questions

1. What level of Canadian government can sign treaties?
2. Is a treaty legally enforceable?
3. Is a treaty a law within the countries that sign it?
4. Why would Canada have a treaty with the United States on long range transmission of air pollutants?

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PART III
CLIMATE

12. Climate Change

A good place to understanding climate change regulations in Canada begins with the constitution, which was not very clear on environmental issues in the first place, creating potential for overlapping jurisdictions. When an environmental issue like climate change occurs, it becomes complicated as it is global in nature (federal) but also related to the consumption of resources (provincial). So often legislators at all levels muddle along and Canada gets a hopscotch approach to environmental regulations. The following is a sketch of Canada's climate change regulations. It is not complete.

Pan-Canadian Framework on Clean Growth and Climate Change

The Pan-Canadian Framework on Clean Growth and Climate Change (the Framework) is intended as a pathway for both the provincial governments and the federal government to meet the requirement of a Nationally Determined Contribution (NDC) that is required for the Paris Agreement. The CCME is nominally the author of this work that outlines an agreed upon path for managing growth and climate change in Canada (Canada, 2022)

The document describes “pillars of action” as the following (Canada, 2022):

- Reduce emissions
- Adaptation to climate changes
- Build resilience
- Accelerate innovation
- Create clean technology

- Create jobs

A key element of the plan is carbon pricing to reduce consumption. Other elements of the framework are included in the National Determined Contribution chapter.

Pan Territorial Adaption Strategies

To review the list of regulations across Canada, is an endurance run. Not a marathon, more of an ultimate marathon thing. To understand how Canada regulates greenhouse gases and climate change implications will be vitally important if Canada is to meet its commitment and if the planet has a hope of limiting temperature increase to 2 degrees C. As we undertake the journey, we also will find many jurisdictions that have climate change policies and plans that have not become regulations yet. This makes defining what Canada is doing even harder.

Continuing the theme of Canada as a federation, climate change is a shared responsibility to regulate. Actions can be taken by each level as appropriate to their authorities. For example Canada's three territories, Yukon, Northwest Territories and Nunavut have concerns with thawing permafrost and are studying options for mitigation. But how do you regulate that?

Canadian Climate Regulations

Climate change is a dynamic component of Canada's environmental regulatory system. Rules and regulations are in a state of flux, sometimes driven by political issues, elections and international pressure. The following is **not** a complete rendition of applicable climate laws in Canada as the list is long and changing. This later

point reminds us that it is always vital to check your regulatory regime for the latest versions.

Federal

There are many acts that now have a greenhouse gas component to their language. Acts like the Impact Assessment Act have significant requirements for what must be included in an environment assessment. The following three acts are possibly the most important ones that have dedicated rules.

*Canadian Net-Zero Emissions Accountability Act, S.C. 2021,
c. 22*

The purpose of the Canadian Net-Zero Emissions Accountability Act, S.C. 2021, c. 22 is to align Canada's commitment to the Paris Agreement with its internal actions. It commits Canada to working towards net zero emissions by 2050. Additionally it establishes interim target years for 2030, 2035, 2040 and 2045 (Canadian Net-Zero Emissions Accountability Act, 2021, s2,4)

Greenhouse Gas Pollution Pricing Act (S.C. 2018, c. 12, s. 186)

The Greenhouse Gas Pollution Pricing Act is the federal governments mechanism for attaching a fee to the emissions of greenhouse gases. Some of the fee is returned to lower income taxpayers as a rebate. The act also allows the provinces to have an equivalent program. If a province elects to setup an equivalent carbon fee, they get to chose how the fee well be spent.

Several provinces tested the constitutionality of the act, and the supreme court agreed the act was valid.

Canadian Environmental Protection Act, 1999 (S.C. 1999, c. 33)

The Canadian Environmental Protection Act, 1999 (CEPA) establishes authorities for the federal government to regulate aspects of the environment considered in the scope of the act. For climate change there are several regulations written under the act. They include:

- Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector) Do Not Apply in Alberta, Order Declaring that the, Provisions of the Regulations Respecting, SOR/2020-233
- Carbon Dioxide Emissions from Natural Gas-fired Generation of Electricity, Regulations Limiting, SOR/2018-261
- Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations, SOR/2013-24
- Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector), Regulations Respecting [Not in force], SOR/2018-66
- Provisions of the Regulations Respecting Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector) Do Not Apply in British Columbia, Order Declaring that the, SOR/2020-60
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- Reduction of Carbon Dioxide Emissions from Coal-fired Generation of Electricity Regulations, SOR/2012-167
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An interesting element about this list is that for several federal regulations, the federal government has excepted a province from the rule because they have an equivalent regulations.

British Columbia

British Columbia is an appropriate place to start the cross Canada journey of climate laws. It has a set of climate laws that, in the authors opinion, most closely aligns with the national commitment. British Columbia's emissions have dropped from 2005 of 63.6 Mt to 61.7 Mt in 2020, about a 3% improvement (Canada, 2022). British Columbia operates its own carbon pricing scheme (Thurton, 2022). The following is a sampling of the active British Columbia carbon related regulations.

Carbon Tax Act (SBC 2008)

The Carbon Tax Act allows the BC government to place a tax on carbon rising to \$50 in 2022. The act has tables for various fuels and one example gasoline in 2022 will be taxed at \$can 0.1105 per litre (Carbon Tax Act, SBC 2008, Schedule 1). The Act also has a regulation that creates the details of the Tax.

Climate Change Accountability Act, SBC 2007, c 42

The Climate Change Accountability Act which was formerly the

Greenhouse Gas Reduction Targets Act allows BC to create targets for reducing greenhouse gas emissions by certain dates. Current as of February 20022, the targets are:

- 16% below 2007 levels by 2025
- 40% by 2030
- 60% by 2040
- 80% by 2050

The Climate Change Accountability Act has a regulation under it called the Carbon Neutral Government Regulation Reg. 392/2008. This regulation establishes that public sector organizations need to report CO₂e emissions and establishes the CO₂e standards.

Environmental Management Act (SBC 2003, c.53)

The Environmental Management Act establishes several provisions including setting emissions standards and manage emissions from waste management facilities. There is a Landfill Gas Management Regulation to detail the later provision.

Greenhouse Gas Industrial Reporting and Control Act (SBC 2014, c. 29)

The Greenhouse Gas Industrial Reporting and Control Act provides direction to greenhouse gas reporting by Industry. It provides for various punishments, but a maximum of \$500,000 fine for supplying false information (Greenhouse Gas Industrial Reporting and Control Act (SBC 2014, c. 29, s.1).

The Oil and Gas Activities Act (SBC 2008, c. 36)

The Oil and Gas Activities Act allows private citizens to launch a complaint about methane emissions. The act enables regulations to be written including the Drilling and Production Regulation BC Reg 282/2010 which further regulates fugitive emissions. The federal government has agreed BC regulations for methane are equivalent to the federal regulations (ECCC, 2021)

Zero Emissions Vehicle Act (SBC 2019 c.29)

The Zero Emissions Vehicle (ZEV) Act regulates auto makers to have an increasing share of ZEV (Zero Emission Vehicles). Targets include (BC, n.d.):

- 10% of light duty vehicles by 2025
- 30% by 2030
- 100% by 2040

Clean Energy Act (SBC 2010, c. 22)

The Clean Energy Act sets the expectations BC has to have clean energy including clean electricity. Among other targets this sets the province to generate at least 93% of its electrical energy from clean or renewable resources and to be a net exporter of clean or renewable electricity (Clean Energy Act SBC 2010, c. 22, s2(c))

BC Building Code

The code has energy efficiency standards for new buildings. One provision that communities can adopt is a requirement for new

homes to be solar water heating ready. BC offers access to the code without charge. (BC, n.d.). Another feature is the provision that communities can adopt the BC Energy Step Code for use in their jurisdiction.

The BC Energy Step Code

This is a voluntary standard for communities to adopt for new building regulations as an add on the building code. It sets performance standards (BC Step Code, 2021).

Vancouver Building Bylaw

Vancouver has its own bylaw that extends the building codes efficiency requirements (Vancouver, 2022). The bylaw sets expectations for higher efficiency and also sets a cap on greenhouse gas emissions from large homes (Vancouver, 2022).

Summary

B.C. has an integrated series of acts and regulations aimed at reducing greenhouse gas emissions in the province. From an editorial point of view, the author believes their targets and regulatory provisions are largely consistent with federal plans for greenhouse gas reductions.

Alberta

Alberta has not set an absolute reduction in emissions. Alberta's emissions have increased from 2005 of 237 Mt to 256 Mt in 2020,

about an 8% increase in emissions (Canada, 2022). Alberta has opted to use the federal carbon backstop carbon pricing (Thurton, 2022). Alberta has a web site on climate change. Alberta has set several targets for emissions but no overall greenhouse gas reduction goals have been established.

Emissions Management and Climate Resilience Act, SA 2003, c E-7.8

The Emissions and Climate Resilience act sets targets referenced to Gross Domestic Product which is not in the same format as either the IPCC format or Canada's. The act establishes reporting concepts and also establishes a fund. It authorizes 7 regulations, one is currently rescinded. Two of the regulations are the Carbon Competitiveness Incentive Regulation, Alta Reg 255/2017 and the Renewable Fuels Standard Regulation, Alta Reg 29/2010. The later establishes a 5% minimum content for alcohol to be in the gasoline that has a renewable label. A third important regulation under the act is the Technology Innovation and Emissions Reduction Regulation, Alta Reg 133/2019. This regulations has an extensive set of guides to help entities navigate the regulation.

Oil Sands Emissions Limit Act, SA 2016, c O-7.5

The Oil Sands Emissions Limit act defines an upper cap on emissions from the oil sands. In practice this allows significant expansion of the oil sands and does require lowering of emissions.

Methane Emission Reduction Regulation, Alta Reg 244/201

This regulation is written under the authority of the Alberta

Environmental Protection and Enhancement Act. It also authorizes the Alberta Energy Regulator to write methane reduction regulations.

Saskatchewan

Saskatchewan has many rules and regulations pertaining to greenhouse gases and climate change. They have an extensive guide on their plans which was developed in 2018, before the federal commitments were updated in 2021 (Saskatchewan, n.d.). In 2020, Saskatchewan's GHG inventory was 65.9 Mt (Saskatchewan, n.d.) and in 2005 its inventory was 70.3 Mt (Canada, 2022) for an 8% improved reduction of emissions compared to Canada's target of 40 to 45% by 2030. Saskatchewan has opted into the federal backstop carbon pricing system (Thurton, 2022). The following are some of Saskatchewan's GHG related regulations.

The Environmental Management and Protection Act, 2010, SS 2010, c E-10.22

The Environmental Management and Protection Act provides general authorities to the minister of the environment. The authorities cover environmental state of reports, waste management, beverage deposits, spills, air quality, and other environmental concerns. The act has 16 regulations written under it (Canlii, 2022). It explicitly excludes Greenhouse gases.

An Act respecting the Management and Reduction of Greenhouse Gases and Adaptation to Climate Change, SS 2010, c M-2.01,

The Saskatchewan Management and Reduction of Greenhouse Gases and Adaptation to Climate Change act establishes authorities for reporting and reduction from selected industries. In 2018 several provisions were removed from the act. The act has a number of regulations written with its authorization.

The Management and Reduction of Greenhouse Gases
(General and Reporting) Regulation

This regulation exists by authority of the Management and Reduction of Greenhouses act. It provides details on greenhouse gas reduction. This is considered an output based pricing system. It covers large emitters, but does not cover consumers. It has been deemed only partially equivalent to the federal regulation on pricing and therefore parts of the federal act apply in Saskatchewan (Osler, n.d.).

Management and Reduction of Greenhouse Gases (Standards and Compliance) Regulations, M-2.01 Reg 3

This regulation establishes general rules and compliance details for the empowering Saskatchewan Management and Reduction of Greenhouse Gases and Adaptation to Climate Change act.

The Management and Reduction of Greenhouse Gases (Baselines, Returns and Verification) Standard

This standard establishes details for completing baseline inventories, annual returns and how they should be verified for the empowering Saskatchewan Management and Reduction of Greenhouse Gases and Adaptation to Climate Change act.

Management and Reduction of Greenhouse Gases (Reporting and General) Regulations, M-2.01 Reg 2

This regulation establishes details for completing baseline inventories, annual returns and how they should be verified for the empowering Saskatchewan Management and Reduction of Greenhouse Gases and Adaptation to Climate Change act.

Canada-Saskatchewan – Equivalency Agreement

The Canada-Saskatchewan equivalency agreement on coal was developed for greenhouse gas emissions. The agreement means the detailed control of the emissions is under Saskatchewan rules rather than the federal regulation.

The equivalency agreement on coal sets the reduction targets as follows:

- 26 – 30% by December 31, 2021, and
- 30 – 34% by December 31, 2024, and
- 34 – 40% by December 31, 2027, and
- 40 – 50% by December 31, 2030

Manitoba

Manitoba has developed a “Made in Manitoba” strategy as their approach to climate change (Manitoba, 2017). In their strategy Manitoba has articulated a goal of “Manitoba will be Canada’s cleanest, greenest and most climate resilient province.” (Manitoba, 2017, p5). As with many strategies, the Manitoba strategy uses a pillar approach to construction. The pillars include; climate, jobs, water, nature (Manitoba, 2017).

The Manitoba government developed a carbon pricing plan as part of the plan, but it was found not to be equivalent to the federal plan. In Manitoba the federal carbon pricing plan is used (Osler, 2021). Manitoba’s 2005 inventory was 20.5 Mt compared to 2020 inventory of 21.7 Mt (Canada, 2022) for an improvement of about 6%. This compares to the Canada target of 40 to 45% reduction by 2030. The following are some regulatory highlights:

The Climate and Green Plan Implementation Act, CCSM c C134

The Climate and Green Plan Implementation act establishes a number of climate related provisions. The act require the Manitoba government to set five year plans with reduction targets for the five year plan (The Climate and Green Plan Implementation Act, 2018). This approach is different from other provincial approaches where targets are set, they will mirror the federal schedule of targets. The current five year plan expires in 2022. The act then requires the responsible minister to develop a report annually on the progress made on the plan. The act also allows for the appointment of an Expert Advisory Panel. The act also establishes a made in Manitoba climate and green fund. The act has authorized one regulations. Sustainability Guidelines for Local Governments, School Divisions, Universities, Colleges and Regional Health Authorities Regulation,

Man Reg 4/2004. This regulation sets guidelines for local governments and other entities responsible to the provincial government.

Ontario

In 2022, Ontario stated it had achieved 22% below 2005 levels of CO₂ equivalent emissions. According to Canada's latest inventory reports that 2020 levels of 204.4 Mt were compared to 149.6 Mt for 2005 for an improvement of about 26% (Canada, 2022). Ontario's plan is outlined in its Preserving and Protecting our Environment for Future Generations A Made-in-Ontario Environment Plan. Ontario exists under the federal backstop for carbon pricing (Thurton, 2022). Some of the Ontario regulatory initiatives include:

Greener Gasoline – Bio-Based Content Requirements for Gasoline, O Reg 535/05 – Repealed 2021

The intent of the greener gasoline law was to meet the NDC commitment to reduce the carbon content of gasoline. It was repealed in 2021 by the Ontario government.

Greenhouse Gas Emissions Performance Standards, O Reg 241/19

This regulation is written under the authority of the Ontario Environmental Protection Act., this regulation sets greenhouse gas limits for entities that must be registered and procedures to register. This regulation will eventually take of the carbon pricing element for industries. However, the fuel component of carbon

pricing will continue to be regulated by the federal carbon pricing act.

Quebec

Quebec has had several climate related initiatives for nearly a decade. The longest standing initiative is the cap-and-trade market with California. Quebec has seen an approximate 12% decrease in GHG emissions from 2005 of 86.3 Mt to 2020 and 76.2 Mt. Quebec manages greenhouse gases under its Environment Quality Act, CQLR c Q-2, which has a stated goal of reducing emissions of greenhouse gases. Quebec has its own carbon pricing scheme that is considered equivalent to the federal system (Thurton, 2022). Quebec has some further acts and regulations that manage climate change:

Act respecting the Ministère du Développement durable, de l'Environnement et des Parcs, CQLR c M-30.001

This act creates the authorities for the Ministère du Développement durable, de l'Environnement et des Parcs to plan and enforce Quebec's ambitions to reduce emissions of greenhouse gases.

Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere, CQLR c Q-2, r 15

This regulation is also enabled under the Environmental Protection Act. It requires reporting of various emissions including greenhouse gases. The regulations set out the reportable gases

and also the global warming potential of each gas. As a reference methane is still listed as 25, which is from the fourth IPCC report.

Regulation respecting a cap-and-trade system for greenhouse gas emission allowances, CQLR c Q-2, r 46.

The cap-and-trade system has been operational in Quebec since 2014 and is authorized by the Environmental Quality Act. It covers the industrial sector and covers as much as 8% of Quebec's GHG emissions. It is open to brokers and traders as well. It also allows for trades with California's cap and trade system.

An Act mainly to ensure effective governance of the fight against climate change and to promote electrification, SQ 2020, c 19

This act, formerly called Bill 44, came into effect in October 2020 is to “ensure effective governance of the fight against climate change and to promote electrification.” The 2030 Plan for a Green Economy plans several steps to reach targets of:

- 37.5% of 1990 levels by 2030
- Net zero by 2050

Regulation respecting mandatory reporting of certain emissions of contaminants into the atmosphere. The purpose is to require reporting of emissions of acidic pollutants, greenhouse gases, and other toxics. The regulation is updated annual to confirm reporting requirement details.

The act also allow an Advisory Committee on Climate Change to be established under the authority of the minister of environment.

This is intended as a standing committee to provide independent advice to the minister of environment (Quebec, 2023)

Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions, CQLR c A-33.02

This act supports the goal of more zero emission vehicles (ZEVs). It requires any manufacturer who sells or leases more than 4500 vehicles in Quebec for three years to participate in the ZEV standard scheme.

Regulation respecting the application of the Act to increase the number of zero-emission motor vehicles in Québec in order to reduce greenhouse gas and other pollutant emissions, CQLR c A-33.02

This regulation was in effect in 2018 but is now in consultation for changes. The goal of the standard is to increase the number of ZEVs in Quebec. It requires manufacturers to participate in a credit system and is authorized by the similarly named act..

New Brunswick

New Brunswick has first developed a five year plan in 2016 to address climate issues. The five year period was completed in 2022 and an update report as well as the next five year plan (Our Pathway Towards Decarbonization and Climate Resilience New Brunswick Climate Change Action Plan) were produced. The review discussed some 118 initiatives that the government planned. They reported

that many of the commitments were completed. The government has committed to ending coal fired electricity generation and government carbon neutrality by 2030. New Brunswick has also committed to net zero by 2050. New Brunswick has its own carbon pricing scheme that is accepted as equivalent (Thurton, 2022).

New Brunswick mean annual temperature has increased by 1.1 C over the past 30 years (New Brunswick, n.d.). New Brunswick's emissions have dropped from 19.8 Mt in 2005 to 12.4 Mt in 2020. This represents an approximate 37% reduction in greenhouse gas emissions. Their regulatory efforts include:

Climate Change Act, SNB 2018, c 11

The Climate Change Act was passed in 2018 and enacts several of the initiatives included in the five year plan including targets. It should be noted the target for 2050 has since been changed to net zero, and the act has not been changed yet. The act establishes a climate change fund, and authorities for collecting fuel taxes. New Brunswick's carbon pricing has been deemed equivalent to the federal carbon pricing.

An Act to Amend the Climate Change Act, SNB 2020, c 3

This act appears to be an update to the previous act. A little clumsy to read and understand, it adds to the original in several areas. No regulations have been written against this act or the preceding act.

Clean Environment Act, RSNB 1973, c C-6

The Clean Environment Act is New Brunswick's omnibus environmental regulation. However, it has not mention of climate,

CO₂ or greenhouse gases in its text. So it is not of primary importance in understanding the regulatory environment in New Brunswick of climate change related regulations.

Nova Scotia

Nova Scotia's emissions have dropped from 2005 of 23 Mt to 14.6 Mt in 2020, about a 37% reduction (Canada, 2022). It outlines its approach to climate change in its website on the topic. From a lay perspective regulation on climate change in Nova Scotia is a bit confusing with a very recent Bill 57. It is speculated that Nova Scotia will use the backstop federal carbon pricing in July 2023 (Thurton, 2022). Nova Scotia from their website includes the following goals that have been copied and abbreviated here as (Nova Scotia, 2021):

- reduce emissions to at least 53 per cent below the levels that were emitted in 2005 by 2030;
- net zero by 2050
- 80% energy to be supplied by renewable energy by 2030
- 30% of (thought to be new vehicles) vehicle sales by 2030 to be zero-emission vehicles
- conserve at least 20% of total land and water mass. Perhaps mass is used instead of area.
- modernize the environmental assessment process;
- solid waste disposal rates lowered to 300 kilograms per person per year or better by 2030.
- Given the scope of goals, it is likely that Nova Scotia will implement more regulations on climate change.

Environmental Goals and Sustainable Prosperity Act, SNS 2007, c 7

This Environmental Goals and Sustainable Prosperity Act is current but may have been replaced by a very similar sounding act called the Environmental Goals and Climate Change Reduction Act, SNS 2021, c20. The later act was introduced to the legislature in 2021 and is consistent with the current Nova Scotia commitments on climate change. An interesting component of the later act is the incorporation of several Mi'kmaq words and definitions of them.

Environment Act, SNS 1994-95, c 1

The Nova Scotia Environmental Act is the main environmental act of the province. It provides the authority to regulate water works, environmental assessments, approvals for works, pesticides and drinking water among other items. It has authorized 99 regulations with several currently rescinded. For climate change they have one regulation; Regulations Respecting Greenhouse Gas Emissions, NS Reg 260/2009 that details the greenhouse gases and emissions caps. The act also authorizes a cap and trade greenhouses gas program under the regulation; Cap and Trade Program Regulations, NS Reg 194/2018

Prince Edward Island

Prince Edward Island's emissions have dropped from 2005 of 1.9 Mt to 1.6 Mt in 2020, about a 15% improvement in performance (Canada, 2022). Prince Edward Island has published a Climate Change Action Plan for the years 2018 to 2023. They have made several commitments including;

- emissions 30% below 2005 levels by 2030
- encourage practices that increase carbon sequestration
- net zero by 2040
- 2030 target: Net Zero Energy

The ambitious program includes many elements. It could be anticipated that elements of the program will eventually be backed by legislation. It is speculated that PEI will use the backstop federal carbon pricing in July 2023 (Thurton, 2022)

Net-zero Carbon Act, RSPEI 1988, c N-3.01

The Net Zero Carbon Act also includes definitions of Mi'kmaq words that are used in the act. The act requires the minister responsible to prepare reports on the status of the progress towards net zero. It also, requires periodic assessments of climate risk as would be appropriate for an island province as small as Prince Edward Island. Regulations have not been authored under this act in 2022.

Newfoundland and Labrador

Newfoundland and Labrador's (NL) emissions have dropped from 2005 of 10.5 Mt to 9.5 Mt in 2020, about a 10% improvement in performance (Canada, 2022). Newfoundland publishes a climate change plan called *The Way Forward on Climate Change in Newfoundland and Labrador*. In the plan a goal for greenhouse gas reductions is articulated as 30% reduction of 2005 greenhouse gas levels by 2030 (NL, n.d.). The plan also calls for a local NL specific carbon pricing there has been recent speculation that the federal backstop program will be adopted (Thorne, 2022).

Management of Greenhouse Gas Act, SNL 2016, c M-1.001

The Management of Greenhouse Gases act is designed for industrial facilities. It sets a threshold for participation but allows for facilities to opt-in. One interesting aspect of the is the reference to Innu rights in a final settlement agreement. The act has authorized 5 regulations which include the Management of Greenhouse Gas Regulations, NLR 116/18 and also the Management of Greenhouse Gas Reporting Regulations, NLR 14/17.

Nunavut

The legal authorities of Nunavut have been devolved from the Federal authorities. Some federal rules apply in some locations, but devolution has created a local focus. With respect to the carbon pricing Nunavut does not have its own pricing system and so the federal pricing system is in place. Nunavut's emissions have increased from 2005 of 0.58 Mt to 0.60 Mt in 2020, about a 6% decrease in performance (Canada, 2022). Nunavut has created a Climate Change Secretariat. It also has a strategy in place Climate Change Impacts and Adaptation in Nunavut. Neither document appears to set targets for greenhouse gas reductions, nor does it appear regulatory intervention is anticipated.

Northwest Territories

The legal authorities of the Northwest Territories (NWT) have been devolved from the federal authorities. Some federal rules apply in some locations, but devolution has created a local focus. NWT's emissions have dropped from 2005 of 1.7 Mt to 1.4 Mt in 2020, about

a 14% improvement in performance (Canada, 2022). The NWT has its own carbon pricing system (Thurton, 2022).

The NWT has created a 2030 NWT Climate Change Strategic Framework with 2019-2023 Action Plan. The framework outlines several reduction strategies including the Carbon Tax and a commitment to consider climate change in new or revisions of regulations (NWT, n.d.). The NWT also has an energy strategy in addition to the climate change strategy to lower carbon content overall of fuels (NWT, n.d.).

Petroleum Products Tax Act, RSNWT 1988, c P-5

This act introduces the carbon pricing system to the NWT. The final target is \$50 per tonne in 2022.

Yukon

The legal authorities of the Yukon have been devolved from the Federal authorities. Some federal rules apply in some locations, but devolution has created a local focus. With respect to the carbon pricing the Yukon does not have its own pricing system and so the federal pricing system is in place. Yukon's emissions have increased from 2005 of 0.58 Mt to 0.60 Mt in 2020, about a 3% decrease in performance (Canada, 2022). The Yukon has written a strategy published in 2020. It has a target of 30 per cent lower than they were in 2010 by 2030. This target may be usurped by the Clean Energy Act. The strategy has many elements and the Clean Energy Act could be the first of legislated actions.

Clean Energy Act

The Yukon has completed public consultation on this proposed act. The Yukon tabled the act as Bill No. 17 in the legislature in November 2022 and at the time of writing (2022) is not law. The act would set the Yukon's targets for net zero by 2050.

Section Summary

Most provinces and territories have had plans in place and supporting regulations for several years, from at least the date of the first pan-Canadian plan. The 2020 emissions are somewhat ambiguous because of the impact that COVID-19 had on the economy and life in general. But the summary table (Canada, 2022) presented shows that some jurisdiction are well on their way, others have in fact lost way and some are stagnant in achieving reductions of emissions.

In terms of regulations, again some jurisdictions are well on their way, others less so.

With ten years to go to meet the 2030 Canada goal of 40 to 45% reduction of greenhouse gases from the last inventory of 2020, the overall total of 9% achieved leaves a lot of work to be done.

Chart 1: GHG Emissions: Climate Change in Canada

Province	2005 (Mt)	2020 (Mt)	% Improvement
Newfoundland and Labrador	10.5	9.5	10%
Nova Scotia	23	14.6	37%
Prince Edward Island	1.9	1.61	15%
New Brunswick	19.8	12.4	37%
Quebec	86.3	76.2	12%
Ontario	204	150	26%
Manitoba	20.5	21.7	-6%
Saskatchewan	71.3	65.9	8%
Alberta	237	256	-8%
British Columbia	63.6	61.7	3%
Yukon	0.569	0.601	-6%
Northwest Territories	1.73	1.4	19%
Nunavut	0.584	0.603	-3%
Total	741	672	9%

Learning Questions

1) What makes some of Newfoundlands and Labradors laws unique in the provinces?

2) Why do you think that some provinces have not developed their own carbon pricing to retain control of revenues?

3) Is there any correlation between carbon pricing and success of carbon reduction? How would you go about trying to demonstrate a relationship?

References

The reference section takes a detour from standard approaches by organizing references on an alphabetical basis. The information in this section is referenced from the Framework document. (On *Clean Growth and Climate Change*, n.d.-b) retrieved from <https://www.canada.ca/en/services/environment/weather/climatechange/pan-canadian-framework.html>

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Quebec

A working note for these references. Direction with the URLs is

pointed to CANLIIs English translations. They are also available in the original language; French

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13. Nationally Determined Commitments

As noted in the Paris Agreement each signatory country must develop its own Nationally Determined Contribution (NDC) to reduce emissions of climate changing gases (UNFCCU, n.d.). As the NDC is Canada's commitment to a legally binding treaty, it is reasonable to assume some of these commitments will turn into regulations. The Government of Canada (Canada) has published the NDC and the United Nations holds them in a publicly available registry (UNFCCU, n.d.). The following sections reflect the document but have been shortened for brevity. Canada's NDC is based upon the Pan-Canadian Framework on Clean Growth and the Environment.

The following is the author's summary of the plan filed with the UN (UN, n.d.).

Canada's Nationally Determined Commitment

Canada's Nationally Determined Contribution (NDC) has a number of overarching goals established by the federal government. Contributing to those goals are local commitments that vary with the province or territory making the commitment. Canada has committed to:

- Net zero by 2050
- 40 to 45% reduction of 2005 GHG emissions by 2030
- Reduce methane emissions by 30% below 2020 levels by 2030
- Reduce methane emissions 75% below 2012 levels by 2030

Many plans and strategies use a concept called “pillars” to

categorize the types of actions they envision. The Canadian NDC considers the following “pillars” of action including:

Cutting Energy Waste

The section or pillar, as Canada labels it, is concerned with reducing energy consumption at personal residences. It aspires to reduce emissions by improving efficiencies. In terms of regulatory initiatives the most interesting ones are:

- Developing a retrofit building code for existing buildings by 2025
- Developing a net zero building code by 2024 (Lockhart, 2022)

Clean Affordable Transportation and Power

The Clean Affordable Transportation and Power section or pillar as Canada discusses it, is about electric vehicles (EVs), infrastructure, and low carbon electricity to power them. Some highlights from a regulatory perspective include:

- A target for zero emission light duty vehicles by 2035 and 2050
- A goal to work with the United States to align standards for vehicles

There are many other initiatives outlined in this pillar, but they are predominately investment rather than regulation in nature. Investment commitments include investing in \$150 million in infrastructure, mostly to provide EV public charging ports. As of July 2022, the federal government had a target of 50,000 zero emission charging ports (Canada, 2022). The number of ports is not included in the NDC.

The federal government has started to write the regulations to make the targets law. They are currently under consultation (Canada, 2023).

How many ports will be needed to support the larger goals of 100% new cars being EVs by 2035? The number of chargers forecast varies but one estimate is 650,000 by 2035 (Banks, Jarratt, 2020). Today, Canada has over 5,000 chargers according to the CAA (CAA, 2023).

Carbon Pricing

The carbon pricing section or pillar is a major strategy. Carbon pricing involves improving and continuing the current program of carbon pricing. As noted in an earlier chapter, carbon pricing was tested in the supreme court of Canada and found to be a federal responsibility. In terms of regulatory activity the most interesting targets are:

- Carbon pricing rising to \$170 per tonne by 2030

Industrial Emissions

The section or pillar of industrial emissions this is about reducing energy consumption in industries. In terms of regulatory the most interesting goals or targets are:

- Net zero investment tax credit
- Reduction of methane emissions (refer to the next chapter on methane regulations)

Resiliency

The fifth section or pillar is perhaps the most cryptic in the author's view. In terms of regulatory initiatives the most interesting commitments are:

- Develop a model climate action plans for farmers
- Protecting 25% of land and oceans by 2025 (see also the international biodiversity convention)
- Further increasing protection of lands and oceans to 30% by 2030
- Standardized inventory calculations based on IPCC guidance. Standards are required as otherwise calculations may result in varied reporting

Net zero by 2050

Additional to the five pillars of the NDC is Canada's commitment to net-zero by 2050. As an interim goal, Canada has set 2030 as the date to reduce carbon equivalent emissions by 40 to 45% below 2005 emissions.

Provinces

Canada is a federation and a constitutional democracy as noted previously. As a federation the provinces and territories have roles that will need to be in step with federal commitments in order for Canada to make its interim and final net zero goals. Despite a proliferation of "Made in (insert your favorite province here)" climate plans, in order for Canada to meet the net zero target, all sectors and all areas will need to contribute to the plan.

British Columbia

British Columbia (BC) has set GHG targets under its Climate Change Accountability Act, SBC 2007, c 42 to be the following:

- 40% reduction below base year 2007 by 2030
- 60% reduction by 2040
- 80% reduction by 2050

They also have sectorial targets and have promised to update legislation for net zero by 2050 target. From a regulatory perspective BC also aims to achieve the following goals:

- Establish a low carbon fuel standard
- Support the introduction of zero emission vehicles with a Zero-Emission Vehicles Act, SBC 2019, c 29 which sets further goals
 - 26% of light duty vehicles to be no emissions by 2026
 - 90% of light duty vehicles to be no emissions by 2030
 - 100% of light duty vehicles to be no emissions by 2035
 - 10,000 public EV charging stations by 2030

Other BC targets include:

- Industrial methane reductions of 75% by 2030
- Virtual elimination of industrial methane emissions by 2035

Alberta

Alberta has committed to the actions that will reduce its GHG emissions, but it has not made any commitments to targets reducing GHG emission levels:

- 45% reduction of the base year 2014 methane levels by 2025
- 30% renewables mix of electricity generation by 2030
- Coal phased out for electricity generation in the province by a maximum of 2030
- A cap on oil sands emissions of 100Mt per year
- Geothermal regulations are projected

No overall commitment to reduce GHG emissions by the target years for 2030 or 2050 could be located in 2022. The cap of 100 Mt is set in an act, Oil Sands Emissions Limit Act, SA 2016, c O-7.5. This target was set prior to the NDC being set and had a cushion allowing for expansion from actual emissions in 2016. At the time the regulation was published the cap would allow oilsands to expand another 47% from 2014 levels (Hussey, 2017). To be clear it is not a reduction target, it is a growth target.

Saskatchewan

Saskatchewan's contribution to the NDC is published its document "Prairie Resilience". Some of the NDC targets include:

- Increasing protected areas
- SaskPower is a government owned utility and has announced targets of GHG reductions from electrical generation by at least 50 per cent below 2005 levels by 2030
- reduce methane emissions in the province by over 40 per cent between 2020-2025
- Sector specific output based performance standards on facilities emitting more than 25,000 tonnes of CO₂eq per year.

Manitoba

Manitoba established the Climate and Green Plan Act C.C.S.M. c. C134 in 2018. It requires targets to be set. From a regulatory perspective:

- modernizing building codes
- increased biodiesel and ethanol requirements for fuels
- review every five years

For more on Manitoba you can read its plan.

Ontario

Ontario has an interesting regulatory history. Its Climate Change Mitigation and Low-carbon Economy Act, SO 2016, c 7 was repealed in 2018 on the election of a new government. The Ontario government produced a “Made in Ontario” environmental plan including climate change. The strategic plan was revised in 2022, but was not legislated.

The government has committed to an “emissions reduction target of reducing GHG emissions 30% below 2005 levels by 2030”. Other elements of their plan include:

- performance standards for large, industrial emitters
- cleaner transportation fuels
- low-carbon hydrogen discussion paper
- increasing the capacity of public transit network,
- supporting clean tech and investing in retooling Ford of Canada’s Oakville complex into a hub for battery electric vehicle production.
- phasing out food and organic waste sent to landfill by 2030, reducing the amount of methane

- advance small nuclear reactors (SMRs) as a clean energy option
- expanding access to natural gas across the province

Quebec

Quebec manages its climate actions under the Environment Quality Act, CQLR c Q-2. Under this Act there are several regulations that pertain to climate change including how to set caps in their cap and trade system. Additional acts include “An Act mainly to ensure effective governance of the fight against climate change and to promote electrification, SQ 2020, c 19”. It may not be an easy translation.

Quebec has targets of reducing GHGs to 37.5% below 1990 levels by 2030. Interestingly the Quebec government has issued an order in council to be compliant with the Paris agreement. Quebec also has a cap and trade system for GHG linked to California (Quebec, n.d.)

New Brunswick

New Brunswick created its Climate Change Act, SNB 2018, c 1 in 2018. As part of the Act it set targets of emissions including the following targets:

- 14.8 megatonnes in 2020
- 10.7 megatonnes in 2030
- 5 megatonnes in 2050

New Brunswick issued its 2020 report on its progress. In the report progress is reported on its 118 specific commitments and it has

currently achieved 34% reduction of 2005 levels of GHG emissions. See the report [here](#).

Nova Scotia

Nova Scotia has established the Environmental Goals and Sustainable Prosperity Act, SNS 2007, c 7 to manage its climate change actions. It replaced that act with the Environmental Goals and Climate Change Reduction Act, SNS 2021, c 20. The later act lists Nova Scotia's commitment as :

“The Government’s targets for greenhouse gas emissions reductions are (a) by 2030, to be at least 53% below the levels that were emitted in 2005; and (b) by 2050, to be net zero, by balancing greenhouse gas emissions with greenhouse gas removals and other offsetting measures”

From a regulatory perspective an interesting component of the act is a reference to Indigenous knowledge. The following is excerpted from the act:

“the environment and economy must be managed for the benefit of present and future generations, which is in keeping with the Mi’kmaq concept of Netukulimk, defined by the Mi’kmaq as the use of the natural bounty provided by the Creator for the self-support and well-being of the individual and the community by achieving adequate standards of community nutrition and economic well-being without jeopardizing the integrity, diversity or productivity of our environment”

Prince Edward Island (PEI)

Prince Edward Island (PEI) aims to obtain Net Zero by 2040 under the Climate Leadership Act, RSPEI 1988, c C-9.1. PEI has a plan

but believes it can reach its targets with no further initiatives, so it is unlikely there will be many new rules associated with its contribution to the NDC.

Newfoundland

Newfoundland has set a GHG target of 30% below 2005 levels by 2030. They have a government motion for Net Zero by 2050. Newfoundland has passed the Management of Greenhouse Gas Act. It is listed as an Act to regulate greenhouse gas emissions from industrial facilities in Newfoundland. There are five supporting regulations as listed in Canlii:

- Advisory Council Regulations, NLR 2/22
- Management of Greenhouse Gas Administrative Penalty Regulations, NLR 72/17
- Management of Greenhouse Gas Regulations, NLR 116/18
- Management of Greenhouse Gas Reporting Regulations, NLR 14/17
- Opted-in Facilities Regulations, NLR 118/18

An additional Newfoundland commitment is that by 2021, 98% of Newfoundland's electricity will come from renewable energy.

Yukon

The Yukon has a climate change plan called "Our Clean Future: A

Yukon strategy for climate change, energy and a green economy” In the strategic plan, which is not a regulation, the plan commits to:

- reduce Yukon’s emissions
- reliable, affordable, renewable energy
- adapt to Climate Change
- a green economy

As part of the plan they have set targets including GHG emissions 30 per cent lower than they were in 2010 by 2030. Their regulatory issues might include

- building code updates
- developing intensity limits for mining sector
- requirements for zero emission vehicles to be 10 per cent of light-duty vehicles sales by 2025 and 30 per cent by 2030.

Their main act in support of climate change is the Clean Energy Act which is currently (SIC 2021) in consultation. It has not been passed yet. You can read more [here](#).

Northwest Territories

Similar to the Yukon, the Northwest Territories (NWT) has developed a strategic plan. Alone this is not a regulatory requirement. You can read more [here](#). The plan has three distinct goals repeated here from the plan.

- Reducing greenhouse gas emissions by 30% below 2005 levels by 2030.
- Increasing understanding of climate change impacts occurring in the NWT
- Building resilience and adapting to a changing climate

Currently (sic 2022) no legislated action can be found.

Nunavut

The government of Nunavut currently has no GHG reduction targets. They have informational resources available on their web site. In 2018 the Auditor General of Canada audited climate change issues in Nunavut and concluded there were strategies, but no specific implementation plans.

No regulatory activity could be found when the search was completed in 2022.

Section Conclusion

Canada's NDC has a clear vision, that is not clearly articulated by some provinces and territories. The notable province is Alberta with the largest emissions and no overall targets. With the disjointed approach where each jurisdiction makes their own rules there is opportunity for inequality and a reduction in probability that these overall targets will actually be met.

Learning Questions

1. Can you articulate a reason that Nunavut would not have climate change targets?
2. Articulate a reason that climate targets vary widely?
3. Can you determine why some provinces and territories have legislated targets and others just have a strategic plan?
4. What is the weakness of a strategic plan?

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14. Methane Regulations

Methane (CH₄) is a colourless, odourless gas that burns readily with oxygen (Britannica, T. Editors of Encyclopaedia, 2021). It is a potent greenhouse gas (GHG) that makes up 13% of Canada's greenhouse gas inventory (Canada, 2022).

Greenhouse gases are usually compared in potency to carbon dioxide over a reference period of time and often discussed as a multiplier of CO₂. This reference is called the global warming potential (GWP). Methane has GWP of 28 times the base of CO₂ over a 100 year time frame according to the IPCC's fifth assessment report (AR5). In the second assessment report (SAR) methane had a GWP of 1 and then in the fourth assessment report it was listed as a GWP of 25 (GHGprotocol, n.d.).

The international assessment reports reflected research that progressively increased the GWP of methane. This increase highlights a couple of important concepts:

- The actual GWP was subject to some scientific uncertainty, but with time the GWP rating has steadily increased, while the uncertainty has decreased.
- When using GWP in greenhouse gas inventories it is important to consider which GWP value is being used. A good practice is to cite the reference report that the GWP was obtained from.
- Methane is an essential GHG to consider in inventory reduction

With an understanding of the importance of anthropogenic methane emissions in climate science, it is appropriate, to consider Canadian regulatory actions and the associated regulations for methane reduction. As noted in Canada's Nationally Determined Contribution (NDC), methane reduction appears as an issue in many of the provincial commitments which is also driven by international agreements (UNFCCU, 2021).

As is common to the greenhouse gas and climate change concerns, is that it is an international issue, a national issue and a provincial issue. With the issue being defined by scientific work, the effort to reduce emissions starts globally, but often the arena that reductions must be made is the provincial one because of their constitutional authorities.

Global Methane Initiative (GMI)

The Global Methane Initiative (GMI) is an international collaborative effort, started in 2004, to encourage countries to reduce the amount of methane they produce. Their goal is to encourage sharing of best practices and technological progress across three sectors of industry; oil and gas, biogas, and coal mines (GMI, n.d.)

The Canadian federal department of Environment Canada and Climate Change has a representative on the oil and gas subcommittee (GMI, n.d.). The GMI website shows a forecast of Canada's methane emissions to be growing over the next thirty years given current trends (GMI, n.d.).

While they encourage methane reductions and highlight cases where there have not been reductions, they are neither regulator nor regulation.

See their web site: <https://www.globalmethane.org/about/index.aspx>

Global Methane Pledge

The Global Methane Pledge was established by the United States and the EU as part of the IPCC COP26 to further stimulate the commitment of countries to reducing methane emissions (The

White House, 2021). The pledge aims to reduce global methane emissions 30 percent from 2020 levels by 2030. Canada has made the pledge (Global Methane Pledge, n.d.). The pledge does not appear to be legally binding, but given the proponents of this initiative there is some peer pressure to perform.

NASA

When we consider the international pressures to implement methane reductions, NASA is an interesting agency. It is a United States agency and has no regulatory authorities including over international jurisdictions. They are influential in building awareness and subsequent regulations. NASA launched EMIT, which is a satellite to measure earth surface mineral dust (NASA, 2022). The satellite can register the spectral signature of methane emissions. Its sensors can highlight concentrated sources of methane emissions, which it calls super emitters (NASA, 2022). With this publicly available data, peer pressure will be exerted on methane emitters.

Canada

Canada's regulatory system records that in 2005, methane was declared toxic under the Canadian Environmental Protection and Enhancement, 1999 (CEPA, 1999) act under item 65. It was added to CEPA, 1999's Schedule 1 (Canada, 2015). With the declaration of methane being considered toxic under CEPA, 1999, further controls can be envisioned.

Canadian Commitments

In 2016, Canada published the Pan-Canadian Framework on Clean Growth and Climate Change which contained commitments to reduce methane emissions (Canada, 2022). In 2016, Canada and the United States pledged together to bilaterally work on reducing methane emissions. Their agreement at the time was to achieve 40 to 45% reductions of 2012 levels by 2025 (Gardener, 2016).

The federal government has committed to work with the provinces and territories to reduce methane emissions including promulgating regulations. The first sector to be actively regulated is the oil and gas sector.

Reduction in the Release of Methane and Certain Volatile Organic Compounds (Upstream Oil and Gas Sector) SOR/2018-66

This federal regulation to reduce methane emissions is written under the authority of the Canadian Environmental Protection Act, 1999 and establishes legal expectations for methane reduction from both the onshore and offshore oil and gas industry for methane emissions. In terms of enforcement, this regulation is replaced for certain provinces where the federal government and provincial government have agreed an equivalent regulation exists in the province.

How Do the Commitments Become Provincial Law?

It is now up to Canada and the provinces to cooperatively work

together to regulate methane for Canada to meet its international obligations. Will they be able to cooperate? With the oil and gas sector being the first to be regulated, we will look at the three largest anthropogenic producers of methane provinces looking at on land oil and gas producers.

Saskatchewan

Saskatchewan has developed a Methane Action Plan which commits to reduce methane emissions 40 to 45% of 2015 emission levels in terms of CO₂eq. The action plan declares support for the federal target of 30% reductions. However, the terms of the commitment differ between the federal commitment and the Saskatchewan commitment, which makes the direct comparison of the pledges to be challenging.

Saskatchewan's principal regulation for achieving this is The Oil and Gas Emissions Management Regulations, RRS c O-2 Reg 7 (Saskatchewan, n.d.).

Saskatchewan has an equivalency agreement in place with the federal government. This equivalency agreement allows the Saskatchewan oil and gas industry to follow Saskatchewan rules (Canada, 2020).

Alberta

It is helpful to examine Alberta's commitment to methane reduction with Canada's largest oil and gas industry. According to Alberta's website, they reference the AR4 GWP of 25. Alberta's commitment is 45% of oil and gas methane emissions from 2014 levels by 2025 (Alberta, n.d.). Once again, the targets set are different from the federal target with respect to baselines. The differences makes it harder to calculate the impact of methane reduction commitments.

Alberta has enacted the Methane Emission Reduction Regulation, Alta Reg 244/2018 which became effective January 1, 2020. It mandates the Alberta Energy Regulator (AER) to control methane emission under two AER regulations, Directive 060 and Directive 017.

The Alberta government then has designated the Alberta Energy Regulator (AER) to develop the detailed plans for the oil and gas sector. The AER lists their target as “45 per cent (relative to 2014 levels) by 2025” (Alberta Energy Regulator, 2022).

Alberta also has an equivalency agreement in place with the federal government. This equivalency agreement allows the Alberta oil and gas industry to follow Alberta’s rules (Canada, 2020).

British Columbia

British Colombia (BC) has set methane targets of 45% reduction of 2014 levels by 2025. While the baseline is different than the federal levels, by calculation it is a similar goal. As part of British Colombia’s commitment, the BC Oil and Gas Commission has issued regulations for controlling and reducing methane emissions over the next ten years in 2019 (Fugitive Emissions Management Guideline version 1.0) to be reviewed in 2022 (BCOGC, 2022).

With their regulations in place, British Columba has an equivalency agreement in place with the federal Government. This equivalency agreement allows the BC industry to follow just BC’s rules (Government of Canada, n.d.).

Does the Canadian pledge align between the NDC and provincial regulations?

The author’s opinion is that the commitments to date will probably not meet Canada’s external commitments. There are some issues

with pledges. In Alberta, the methane reduction regulation was written well before the NDC was written or the methane pledge in 2021 (Cusp network, n.d.). The Alberta base year is specified under the NDC as 2014, and the target dates are different. With the Alberta regulation authored prior to the commitment, this differential is not surprising.

In Canada's NDC filed with the UNFCCC, the overall methane pledge is not discussed, and the only other provinces mentioning methane include Ontario (landfills), Manitoba (landfills) and Saskatchewan.

To make comparisons, we would need to convert the base years back to tonnes of methane emissions and the yearly bases. Something only a researcher would find joy in.

Section Conclusion

The methane goals set by Canada, to be more than aspirational targets, need specific measures to reduce emissions. Canada established the initial rules with BC, Alberta and Saskatchewan developing equivalent regulations. Not all reviewers believe the current regulations have the needed rigour (Gorski et al, 2019) so time will tell if Canada can meet the methane targets.

But with climate change, the question is do we have time?

Learning Questions

1. Why is it important to reduce methane emissions?
2. Why would the different jurisdictions use different baselines?
3. Do you think a pledge has the same weight as a treaty?
4. What could be done to improve the actionability of methane reduction?

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PART IV
FEDERAL

15. Federal Regulations

Canada is a representative constitutional democratic monarchy. Canada is also a dominion of ten provinces and three territories. In Canada and the United States (US), our constitutions are the backbone of our respective legal systems. In Canada, the constitution bestowed certain authorities across the country. For example, the federal government was made responsible for defense, banking and all things interprovincial. The provinces are responsible for their natural resources.

While the Canadian constitution guarantees certain powers to the federal government and certain powers to the provinces, the territories do not have constitutionally guaranteed authorities. Their authorities are passed to them from the federal government. Cities receive powers from their provincial government, as cities are not included in the constitution either.

At the time of confederation (in 1867) environmental matters were not a concept as we understand them today. Unsurprisingly the constitution is mute to who should regulate environmental issues. For example: when the constitution was framed in 1867, little was understood about climate change. So, climate was not explicitly covered in the constitution.

Today the environment portfolio is a shared responsibility. This leaves overlaps and inefficiencies. For example, there are 10 provincial hazardous waste regulations, and three for territorial and a federal one for interprovincial or international movement of wastes.

By the constitution, if a matter is connected to resources, it is a provincial matter, but if connected, to international trade, interprovincial transportation, trade or peace, it is generally a federal matter (The Constitution Acts, 1867 to 1982, n.d.)

So where does air pollution fit? Generally, it is a provincial issue. But Canada has agreed on national air quality standards. They are

not written in an act. There are some federal regulations that are related to air quality including vehicle emissions and efficiency regulations; toxicity is also defined federally. However, there is no comprehensive federally regulated air emissions regulation.

So where would greenhouse gases fit? Due to international treaties, it is a federal matter. CO₂ also moves freely and it is a global problem. But most CO₂ is generated by burning fossil fuels which is a resource. Therefore, it is a provincial matter. In the end overlapping and sometimes conflicting priorities.

With climate change the federal government formally sets the targets in consultation with various entities, but the provinces have to meet them. It can get quite contentious. And it is also quite political. Some politicians still believe sewage is a bigger issue than climate change (it is not) (Tasker, 2021).

Follows is a brief look at some important federal regulations, presented in no particular order.

Impact Assessment Act (IAA) (Canada)

The Impact Assessment Act (IAA) is referred to in the scope of the Canadian federal government. This act regulates impact assessments which includes the environment of all projects under federal jurisdictions and selected major projects. The IAA was passed in 2019 and replaced the earlier Canadian Environmental Assessment Act (CEAA).

New projects that fall under this act and its regulations must include many environmental issues including air quality, fisheries, and climate change as mandatory components of the assessments (Canada, n.d.).

The IAA is enforced by the IAA. Confusing, yes. The enforcement agency is the Impact Assessment Agency (IAA) (Canada, n.d.).

Under the IAA, climate change must be considered. Details of what must be considered are listed in the Strategic Assessment of

Climate Change (Canada, 2020). For further information see also chapters on climate, environmental assessment, and case law.

Fisheries Act

The federal government's Fisheries Act is one of the oldest standing acts in Canada first passed in 1868. It has been updated many times, with the last update occurring in 2019 (Fisheries Act). This 2019 revision reversed some of the changes made in the 2012 version. In particular, the changes below are quoted from the Government of Canada website (2019); the updated act includes:

- *protecting all fish and fish habitats*
- *restoring the previous prohibition against “harmful alteration, disruption or destruction of fish habitat” (HADD)*
- *restoring a prohibition against causing “the death of fish by means other than fishing”*

The concept of HADD is a key element of the Fisheries Act

Its purpose is to protect fisheries and their habitat and is an important environmental act. Despite the strong link between oceans and climate, the Fisheries Act has no official link to air or climate change.

Fish are also a resource and there can be overlap between federal and provincial authorities as well. For fish bearing bodies of water, both levels of authority may need to be considered.

Canada Water Act, RSC 1985, c C-11

Under the federal system, water regulation is confusing so we need

to remember to be specific about which act or regulation we are referencing. Some of the federal water acts include:

- Canadian Navigable Waters Act
- Arctic Waters Pollution Prevention Act
- Canada Water Act
- Dominion Water Power Act
- NWT Waters Act
- Yukon Waters Act
- International Boundary Waters Act
- Safe Drinking Water for First Nations Act

But possibly the most relevant to the discussion is the Canada Water Act (R.S.C., 1985, c. C-11). It was proclaimed in 1970 and was updated in 1985. The Act allows the federal government to enter into agreements with the provinces and to conduct research and gather data.

This allows the federal Water Survey of Canada to operate and gather data from more than 2000 stations in Canada (*Water Survey of Canada*, n.d.).

Safe Drinking Water Act for First Nations

The Safe Drinking Water for First Nations Act, SC 2013, c 21 authorized the Minister to make regulations for the management of drinking water on Indigenous lands. The regulations could be varied to account for provincial variations. Interestingly, no regulations were written (sic 2022).

Further the government has consulted with Indigenous peoples and the act has proven to be problematic. The government withdraw the act and intends to replace it (Canada, 2019). It was repealed effective June 23, 2022 (Canlii, 2022).

Canadian Environmental Protection Act, 1999, SC 1999, c 33 (CEPA, 1999)

Canadian Environmental Protection Act was first passed in 1988 as an omnibus environmental bill at the federal level. It had a focus on toxic substances. The act today is often noted as CEPA, 1999, the year of its last major revision. It is still Canada's federal omnibus environmental act. It has authorized many federal regulations that are related to air pollution and other pollutants.

These regulations include emission standards for vehicles, ships and trains and off-road engines. For vehicles, standards are synchronized with United States regulations. CEPA, 1999 also authorizes toxicity investigations. The following are three of the toxicity provisions under CEPA, 1999 that affect many industries and institutions.

This major act is currently (sic 2023) under debate for modifications. It is currently (sic January 2023) before a House of Commons committee to undergo some significant changes (Canada, 2022). According to the Government of Canada the proposed modifications include the following list (Canada, 2022):

- A right to a clean environment
 - Mention of the United Nations Declaration on Indigenous Peoples
 - Cumulative effects of chemicals
- Protecting vulnerable populations
 - Canada (2022) defines vulnerable populations as “a group of individuals within the Canadian population who, due to greater susceptibility or greater exposure, may be at an increased risk of experiencing adverse health effects from exposure to substances.”
- Assessing real life exposures including cumulative effects of chemicals and synergistic effects
- A stronger “regime” for substances that are toxic under CEPA

and of the highest risk

- Supporting the shift to safer chemicals
- A new priorities plan
- Increased transparency in decision-making
 - Formal process for citizens to request toxicity information
 - Confidentiality will be considered similar to the United States Environmental Protection Agency and the *Toxic Substances Control Act (TSCA)*.
- Reducing reliance on animal testing
- Changes to the *Food and Drugs Act (FDA)* to strengthen the environmental risk assessment and risk management of drugs
- Other changes will be considered in conjunction with CEPA, the FDA and the *Canada Consumer Product Safety Act*, including:
 - Labeling and information for consumers
 - Updating the regulatory framework for products of biotechnology

As we consider the ambitions in this legislation, many are supported by a very emerging science on topics like cumulative effects. The author believes that while the sentiments are laudable, it is difficult to regulate without solid science to back the requirements.

National Pollutant Release Inventory (NPRI)

The National Pollutant Release Inventory (NPRI) is published under the Canada Gazette under the authority of CEPA, 1999 and contains the rules and requirements for reporting listed pollutants. The annual gazette has updated reporting requirements. It is a parallel regulation to the United States TRI.

The NPRI lists and reporting requirements are updated regularly and those who have to report need to stay current (Canada, 2022).

It requires the reporting of greenhouse gases, and the details of the program are announced annually in the Canada Gazette.

Priority Substances List (PSL)

The Priority Substances List (PSL) is established under CEPA, 1999 is a list of substances that were to be prioritized for study as to whether they should be considered toxic and regulated.

Where a substance is declared toxic under provision 64 of CEPA, 1999, there is an expectation of regulations that should follow (Canada, 2019)

See also the definition of CEPA Toxic in CEPA, 1999. (Canada, 2005).

Virtual Elimination List SOR/2006-298

The virtual elimination list is a regulation under CEPA, 1999. It lists those substances where toxicity testing has recommended these chemicals from virtual elimination from the Canadian environment. As of 2022 only two chemicals have been designated for virtual elimination (Virtual Elimination List SOR/2006-298).

Canada Consumer Product Safety Act (S.C. 2010, c. 21)

The Canada Consumer Product Safety Act (S.C. 2010, c.21) is designed to protect Canadians from unsafe goods. Sometimes this includes products that have environmentally toxic substances in their makeup.

As part of the act, flame retardant chemicals are discouraged but only a few are banned in some consumer goods. (Canada, 2021).

While there are protections against false claims, the regulation of products for reduced VOCs may not be as rigorous. Much of that work is left to standard setting organizations and green labels, like Ecolog by Underwriters Laboratories (UL Solutions, 2022).

Canadian Net-Zero Emissions Accountability Act, SC 2021, c 22

The Canadian Net-Zero Emissions Accountability Act, SC 2021, c 22 is the most recent legislation at the federal level for climate change. The act makes law the commitment to set net zero as Canada's target for 2050. It also requires plans and interim targets. The act defines net zero as the following (Canadian Net-Zero Emissions Accountability Act, SC 2021, c 22):

- *net-zero emissions means that anthropogenic emissions of greenhouse gases into the atmosphere are balanced by anthropogenic removals of greenhouse gases from the atmosphere over a specified period.*

The Government of Canada also committed to the 2030 greenhouse gas emissions target as being Canada's Nationally Determined Contribution (NDC) under the Paris Agreement, which will be 40-45% below 2005 levels, by 2030". (Canada, 2021)

Net Zero

Net zero is a goal of emissions reduction. It is still full of ambiguities. Net zero means that an entity, either small or large

like a country, emits no greenhouse gas emissions or it offsets those it does emit. Offsets can be planting trees or absorbing carbon or similar carbon sequestration.

Sometimes there can be a generic use of net zero, you should always look for the definition as to how net zero is being implemented. While an enviable goal, remember a goal is nothing if there is no plan behind it.

There is a temptation to look at net zero by just selling carbon sequestration. For this approach to be viable the sequestration has to be achievable and verified. To achieve net zero, we will need all the carbon reduction, elimination, and sequestration tools that we have and can invent.

Species at Risk Act, SC 2002, c 29 (SARA)

The Species at Risk Act, SC 2002, c 29 (SARA) is the federal act that allows for protection of threatened species in Canada. While it is a federal act, provinces may opt out with a regulated equivalent protection ?British Columbia, Saskatchewan and Ontario have equivalency agreements (Canada, 2022).

A committee called the Committee on the Status of Endangered Wildlife in Canada (COSWIC) on is established to consider what species should be included and the level of threat to them (COSWIC, 2021).

Migratory Birds Convention Act, 1994, SC 1994, c 22

The Migratory Birds Convention Act, 1994, SC 1994, c 22 is an interesting act as it was written to ensure compliance with a bilateral treaty with the United States originally signed in 1916

(Canada, 2022). The treaty is informally called the called Migratory Birds Convention, more formally called the Convention for the Protection of Migratory Birds in the United States and Canada (Canada, 2022).

The act's aim is to protect migratory birds in Canada and the convention aims for the same goal only on a continent basis. It is a federal jurisdiction because migratory birds can and do cross borders. It does not protect birds who do not migrate.

Migratory birds can also be considered a resource so they can be provincially regulated. Provinces then also have regulations about migratory birds in the form of hunting regulations. So, there can be overlap in jurisdictions for migratory birds

Is it a regulation?

Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials (NORM)

As their name suggests, the Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials, these are guidelines only but are issued within the scope of all of Canada. An interesting aspect is that most provinces participated. In Alberta they have been converted into regulation in the AER's Directive 058, Oilfield Waste Management Requirements for the Upstream Petroleum Industry as a requirement.

Section Conclusion

Federal environmental regulations are focused on those areas that are the interest of the Canadian government. That is they consider

cross-border, international, and big picture issues. The above listing is far from complete, as each act may have multiple regulations that the act authorizes.

Even with the clear scope of a Canadian interest, like things that move between borders, it is easy to see potential overlap with provincial authorities, as many environmental aspects can be seen as a resource as well. In some cases, federal and provincial governments have come to an understanding by signing equivalency agreements. But it is not always that clear.

Even industries that are covered by life cycle regulators provincially will have some federal regulations that are applicable. As with any regulatory review, check to see you have the most current advice.

Learning Questions

1. Does a product just have to be toxic to be listed as toxic under Canada; CEPA?
2. Was Canada the first country to have an air quality act federally?
3. Was Canada the first country to have a Right to Know act about toxic air emissions?

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16. Federal Regulators and Tribunals

Regulators are sometimes mistaken for a regulation itself. They are separate concepts. Regulators are generally not elected but have the authority granted to them in an act or regulation to enforce or write regulations. This authority generally allows them to also enforce those regulations

As the Canadian constitution sets authorities and jurisdictions for the federal government and provinces, we have to examine both levels of government. In the United States, its constitution also sets out different authorities for federal and state, but the authorities are quite different than Canada.

Federal (*Canada*)

The Canadian federal government authorities are set by the Canadian constitution. However, as noted earlier in this book, in 1867 environmental issues were not really defined. Therefore the 1867 constitution did not cover environment, so today in Canada there is overlap between the provincial authorities and the federal authorities.

Environment and Climate Change Canada (ECCC)

Sometimes listed by the acronym ECCC, Environment and Climate Change Canada is responsible for federal environmental regulations and their enforcement (Canada, 2022). They also are responsible for weather forecasting. Overall they may be the most important

environmental regulator in the federal government. They include in their scope:

- Waste management both interprovincial and working with the CCME on single use plastics
- Canada's commitment to many of the United Nations Sustainable Development Goals
- Canada's commitments to various environmental treaties
- Protection of Canada's coastlines
- Working with the provinces and territories on implementation of the Pan-Canadian Framework on Climate Change

There is a lot of scope to their operations and you could read more at their website.

Parks Canada

Parks Canada is a regulator of the national parks. The national parks protect 3% of Canada. Parks Canada is responsible for environmental protection in these areas (Canada, 2022). Parks Canada also have a role in climate change and advocate for natural solutions, and also to protect the parks from damage from a changing climate (Canada, 2022)

Health Canada

Health Canada has a mandate to protect the health of Canadians (Canada, 2022). This federal department works with the provinces and territories to manage health. One environmental product they produce is the Guidelines for Canadian Drinking Water Quality. It is

important to remember that this guideline is not the law. It is only a law if adopted in provincial or territorial regulations.

Check out their web page at <https://www.canada.ca/en/health-canada.html>

National Energy Board (NEB)

The National Energy Board (NEB) is now defunct, but was the federal regulator responsible for considering energy exports out of the country, interprovincial transport of oil and gas, and frontier oil and gas (Canada, 2019). It was a true life cycle regulator covering everything from assessment, Duty to Consult, and to reclamation.

The NEB was replaced by the Canadian Energy Regulator in 2018 (Canada, 2019).

Canadian Energy Regulator (CER)

The Canadian Energy Regulator (CER) is the federal regulator who regulates the inter-provincial transport of oil and gas in pipelines and also electricity in power lines. The CER also regulates the import and export of energy in the form of electricity, oil and natural gas. For these facilities, they are considered a life cycle regulator (Canada Energy Regulator, 2022). However, an important distinction is that the CER is not the agency responsible for major facilities impact assessments. That responsibility now rests with the IAA.

The CER also enforces orders under the National Energy Board Act that were made by the now defunct NEB. New regulations are made under the Canadian Energy Regulator Act, SC 2019, c 28, s 10 (CER, 2022). See also the chapter on oil and gas regulators.

Canadian Nuclear Safety Commission (CNSC)

The Canadian Nuclear Safety Commission (CNSC) regulates, under the authority of Nuclear Safety and Control Act (S.C. 1997, c. 9) the use of nuclear sources predominantly in nuclear power plants (Canada, 2022). While it is considered a life cycle regulator, the federal impact assessment agency is now responsible for impact assessments on large scale nuclear projects since the impact assessment act was enabled.

The CNSC does not regulate or deal with naturally occurring radioactive materials (NORMs).

Canadian Environmental Assessment Agency (CEAA)

The Canadian Environmental Assessment Agency (CEAA) is defunct since 2019, but was the organization responsible for reviewing all federal environmental assessments under the Canadian Environmental Assessment Act (CEAA) and Canadian Environmental Assessment Act, 2012 (CEAA, 2012) except for environmental assessments for oil and gas and for nuclear. These latter assessments were reviewed by the NEB and the CNSB respectively.

The CEAA, 2012 was replaced in 2019 by the federal impact assessment agency (IAA).

Impact Assessment Agency

The Impact Assessment Agency (IAA) which confusingly has the same initials as the act that created it, is responsible for overseeing all federal impact assessments. They replaced and inherited the

Canadian Environmental Assessment Agency files and continue to review those projects started under the old CEAA, 2012.

It replaced the CEAA in 2019. It also took over the project assessment duties from the National Energy Board and the Canadian Nuclear Safety Commission. This bit of piracy happened with the enactment of the Impact Assessment Act.

Fisheries and Oceans Canada (DFO)

The Fisheries and Oceans Canada (DFO), still affectionately known as the Department of Fisheries and Oceans, is responsible for protecting fish habitat and ocean health. They are one of the oldest Canadian government departments.

Their authority is derived from the Fisheries Act (R.S.C., 1985, c. F-14).

Coast Guard (Canada)

The Canadian Coast Guard is a special agency of the Department of Fisheries and Oceans. They are responsible for patrolling Canada's coasts, involved in search and rescue and will respond to environmental emergencies (Canada, 2022).

Canada's Coast Guard differs slightly from the United States Coast Guard which appears to be organized on a more militaristic basis and which has significantly cooler gear like Black Hawk helicopters.

The Canadian Coast Guard is currently acquiring or building new ships with ice breaking capability (Canada, 2022).

Indian Oil and Gas Canada (IOGC)

Oil and gas is regulated on Indigenous reserve lands by the federal agency, the Indian Oil and Gas Canada. Geographically the IOGC regions are south of the 60th parallel across all provinces.

The IOGC is a federal agency and considers both the regulation of the industry and fiduciary duty to the Indigenous peoples (Canada, 2022). See also the chapter on oil and gas regulators.

Section Conclusion

The federal government has many regulators. These listed are some of the more predominate of the regulators. Significant changes have occurred in the past 4 years as governments have added their agendas to the enabling acts. There is currently much emphasis on consultation across all federal regulators, in particular the Duty to Consult. Each regulator also have significant goals to achieve with respect to climate change.

Learning Questions

1. Consider the goal of implementing more electric vehicles. Which department might be concerned? (Hint it is not listed here)
2. Consider the goal of lower carbon fuels. Which department would be responsible for that goal?

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PART V
PROVINCIAL AND
TERRITORIAL

17. Provincial Regulations

Canada has ten provincial governments and another three territorial governments. Each one has authorities that are derived from either the Constitution or devolved from the federal Government. There are many parallels between the provinces, but no two sets of rules look the same. Each is structured slightly differently. Regulations on environmental issues like hazardous waste often have some commonality, but details can vary province to province. The following is a very brief look at some relevant provincial environmental regulations. The structure we have chosen is to discuss safety first, then water acts then the principal environmental acts in use in the province.

British Columbia

Starting west to east, British Columbia has two interesting acts in the Water Protection Act and the Environmental Management Act. They also have other acts discussed in other chapters including the Environmental Assessment Act. A full listing of environmental relevant acts can be found at the British Columbia's website.

Workers Compensation Act, RSBC 2019, c 1

The Workers Compensation Act is the overall Act that regulates health and safety in the workplace in British Columbia. One of the 12 regulations written under the act includes the health and safety regulations. Anyone working in British Columbia other than people working for a federal entity need to follow these regulations. Federally regulated employers must follow the Canada Labour Act.

BC's act differs slightly from other provinces in that health and safety is linked to workers compensation. Workers compensation is a form of insurance for workers in the province.

Water Protection Act, RSBC 1996, c 484

The Water Protection Act focuses on ownership of water in British Columbia. It establishes that the province owns all surface water. This allows the province to license and manage water withdrawals. The act also prohibits major transfers of water between watersheds.

Environmental Management Act, SBC 2003, c 53

The Environmental Management Act is British Columbia's omnibus environmental bill. One of the chief concepts is the very broad definition of waste which includes effluent o air and water. There have been 55 regulations written against this act making it one of the most important environmental acts in British Columbia. Regulations vary from codes of practices for several industries to cleaner gasoline regulations. Anyone working in the environmental sector in British Columbia should review this act.

Alberta

Similar to British Columbia, Alberta has several important acts that regulate environmental issues. They also have several regulators who make specific rules and enforce them, each authorized by an act. An interesting regulatory element of Alberta is the land planning regulations.

Occupational Health and Safety Act, SA 2020, c O-2.2

Occupational Health and Safety in Alberta is often abbreviated as OHS. It is important to cite the province when mentioning these regulations as many jurisdictions have similar sounding names for similar legislation.

In Alberta it is divided into three components (*Alberta*, n.d.):

- The act
- The regulations
- The code

Professionals often focus on the code as it contains much of the detailed rules for occupational health and safety.

Alberta Land Stewardship Act, SA 2009, c A-26.8

The Alberta Land Stewardship Act is an overriding legislation that divides the province into distinct regions for environmental planning. Two plans have been completed, the remaining planning areas are in progress. Other environmental regulations must follow this planning act. It is a unique legislation in Canada.

Water Act, RSA 2000, c W-3

The Alberta Water Act is similar to the British Columbia water act in purpose. The Alberta water act concerns the management of water including the allocations of water as a resource. It defines activities that need authorization under the act.

The Water Act is also an old regulation in Alberta. It established how water would be allocated in the province.

Alberta Environmental Protection and Enhancement Act, RSA 2000, c E-12

Environmental Protection and Enhancement Act, RSA 2000, c E-12 (AEPEA) is the Alberta omnibus environmental regulation. It authorizes many regulations ranging from environmental assessment to the methane reduction regulation (Environmental Protection and Enhancement Act, 2021).

The Act authorizes Alberta Environmental and Parks as a regulator and establishes the penalties that can be used for violations of the act and regulations.

Saskatchewan

Saskatchewan also has many acts that relate to the environment. These include, from Saskatchewan's website the following:

- The Conservation Easements Act
- The Ecological Reserves Act
- The Environmental Assessment Act
- The Environmental Management and Protection Act, 2010
- The Fisheries Act (Saskatchewan), 1994
- The Provincial Lands Act
- The Wildlife Act, 1998
- The Wildlife Habitat Protection Act

Occupational Health and Safety Act, RSS 1993, SS

1993, c O-1.1

In Saskatchewan health and safety regulations were made under the authority of the occupational health and safety act. As in other provinces this act regulates workplace safety. It was repealed in 2014 and replaced with the Saskatchewan Employment Act.

The Saskatchewan Employment Act, SS 2013, c S-15.1

This act includes occupational health and safety considerations and is in art 3 of the act. This act is more inclusive of employment issues than pothor provides which have dedicated occupational and health acts.

Saskatchewan Watershed Authority Act, 2005 (S.S. 2005, c. S-35.03)

The Watershed Authority Act is the Saskatchewan equivalent of water act and is concerned with water allocation and not water quality.

The Environmental Management and Protection Act, 2010, SS 2010, c E-10.22

The Environmental Management and Protection Act is similar in scope to other provinces environmental act and covers contaminated sites, wastes and other areas of environmental concern

There are 16 regulations that are written under the authority of the Act. These regulations cover many different types of wastes.

Manitoba

Manitoba's regulations are perhaps not as complex as either Alberta or British Columbia. Environmental regulations including environmental assessment rules are consolidated in the omnibus environmental regulation.

The Workplace Safety and Health Act, CCSM c W210

In a similar vein to to other provinces, Manitoba has a separate act for regulating health and safety in the workplace. This too is must read for anyone working in Manitoba.

The Water Rights Act, CCSM c W80

Similar to other provinces, Manitoba has a water act that relates to water allocation. Water diversion are regulated under this act. Water quality is not included, similar to the other western provinces water acts.

The Environment Act C.C.S.M. c. E125

The Manitoba environmental act establishes the authority to ensure the environment "is protected and maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for this and future generations,"

This is a version of the definition of sustainable development.

The Act considers authorities of the Minister, establishes the Department and sets the authority to make further regulations. There are 29 regulations ranging from waste management, water management, to environmental assessment.

Ontario

Ontario, as arguably Canada's largest economy has a suite of environmental acts and regulations. Does this make it a stricter regime? With any act or regulation it depends a lot on the details. So experts vary on how effective the regulatory regime is in Ontario.

Occupational Health and Safety Act, RSO 1990, c O.1

In Ontario the health and safety of workers is governed by the Occupational Health and Safety Act, RSO 1990, c O.1 and its regulations. Over time over 40 regulations have been written with many of them now repealed. One interesting one is University Academics and Teaching Assistants, RRO 1990, Reg 858, which states that the act applies to university members and their teaching assistants. It is interesting to see what caused this to be written as a regulation. Certainly in Alberta the code applies to universities.

Environmental Bill of Rights, 1993, SO 1993, c 28

So far in our journey across Canada, this environmental bill of rights legislation is unique. While unique, it is, after understanding the general statement of intent, somewhat technical act.

Clean Water Act, 2006, SO 2006, c 22

The Clean Water Act, is concerned for protecting source areas of water. So the act is concerned about protection of the sources of drinking water. It also concerns water allocation, but is somewhat different from western Canada water acts which are predominately about water allocation. Ontario's Ontario Water Resources Act, RSO 1990, c O.40, is perhaps closer to the western Canada water allocation acts.

Environmental Protection Act, RSO 1990, c E.19

The Environmental Protection Act is Ontario's version of the omnibus environmental law. It does not include environmental assessment as that is a separate act for Ontario. It has been used to authorize over 100 regulations. Many of these have been rescinded. In force regulations vary from local air quality concerns to waste to discharge of sewage from pleasure boats. This act would be the predominate environmental act in Ontario.

Quebec

Quebec is different than other provinces in as much as civil law, descended from France in effect. The remainder of Canada uses common law which has descended from the English common law. Civil law is regulations focused rather than judge made law. It may be why each act tends to have more regulations under it than other provincial jurisdictions. Another element of the legislation Quebec is that it is written in french first then translated to english. CANLII has the complete works translated into english. However Quebec websites that explain the rules may only be partially translated.

Act respecting occupational health and safety, CQLR c S-2.1

The safety act of Quebec manages workplace health and safety. It has authorized 80 regulations, about half half have been rescinded. An interesting element of the acts regulations is a reference to building codes in its regulation Building Code – 1985 Regulation, CQLR c S-2.1, r 0.1.

Water Resources Preservation Act, CQLR c P-18.1

Similar to other provinces Quebec has a water act that claims ownership of water in the province. An interesting aspect of the act is the following provision for paragraph 2 of the act; “*From 21 October 1999, no water taken in Québec may be transferred outside Québec*”. There are several exceptions to this rule, including bottled water, but it is an interesting political statement in the act.

Environment Quality Act, CQLR c Q-2

The Quebec Environmental Quality Act states it is fundamentally to “Ensure that environmental protection, improvement, restoration, development, and management are of general interest.” There are 100 regulations under the act, with about half currently in 2022 rescinded. Current regulations include clean air regulations, greenhouse gas regulations, water quality regulations, waste regulations and many more.

One of the regulations is the Regulation respecting the regulatory scheme applying to activities on the basis of their environmental

impact, CQLR c Q-2, r 17.1 which sets out the process for environmental assessment in Quebec and includes specific provisions for including climate change. Environmental assessment is included in three regulations under the Environment Quality Act. Two are geographically restricted; one to northeastern Quebec and the other to the James Bay and northern region of Quebec.

Nova Scotia

Nova Scotia also has a suite of environmental acts and regulations. Some of these acts are quite specific. From Nova Scotia's government website some highlighted acts are:

- Anti-idling Act
- Environmental Goals and Sustainable Prosperity Act
- Importation of Hydraulic Fracturing Wastewater Prohibition Act
- Voluntary Carbon Emissions Offset Fund Act
- Wilderness Areas Protection Act
- Environment Act, SNS 1994-95, c-1

Occupational Health and Safety Act, SNS 1996, c 7

Workplace safety is governed in Nova Scotia is governed by the Occupational Health and Safety Act. The Act authorizes 16 regulations, 8 of which have been rescinded as of the writing of this book.

Water Resources Protection Act, SNS 2000, c 10

The Water Resources Protection Act is about protecting water sources, so is focused on allocation rather than quality. So it is similar to other water acts, but is not as prescriptive in water allocation rights.

Environment Act, SNS 1994-95, c 1

The Environment Act is Nova Scotia's omnibus environmental act. Over 90 regulations have been authorized by this act and about a third are rescinded as of the writing of this book. Regulations range from sewage treatment, used oils and environmental assessment. One regulation of interest is Regulations Respecting Greenhouse Gas Emissions, NS Reg 260/2009. This regulation provides for reporting requirements and emissions caps for greenhouse gases.

New Brunswick

New Brunswick has several environmental related regulations including environmental impact assessment. Some of their acts from their website include:

- Clean Air Act
- Clean Environment Act
- Clean Water Act
- Environmental Trust Fund Act
- Community Planning Act
- Pesticides Control Act
- Unsightly Premises Act

Similar in concept to other environmental regulatory regimes, the New Brunswick execution is slightly different in that there is not a clear environmental omnibus act.

Occupational Health and Safety Act, SNB 1983, c O-0.2

Workplace health and safety in New Brunswick is regulated through the Occupational Health and Safety Act. The act establishes employer responsibilities and requirements for safety and health programs. There are seven active regulations authorized by the act. Overall it is consistent with other provincial structures.

Clean Environment Act, RSNB 1973, c C-6

The Clean Environmental Act regulates elements of the environment including wetlands, contaminates and environmental impact assessment. There are currently no regulations authorized by the act. So the act itself must be reviewed to find the details that are sometimes reserved for regulations.

Clean Water Act, SNB 1989, c C-6.1

The Clean Water Act is similar to other provinces' water acts as it asserts ownership of water in the name of the crown. Where it differs from many other provincial water acts is the inclusion of water contamination in the scope of the act. The act authorizes ten regulations which range from potable water quality, to wetland protections.

Clean Air Act, SNB 1997, c C-5.2

The New Brunswick Clean Air Act is also a divergence from environmental acts in other provinces as it separates out air quality for regulation. It currently authorizes five regulations that include ozone depleting substances.

Community Planning Act (o.c. 2019-171)

The Community Planning Act establishes the Appeal Board that is used to appeal Environmental Assessment outcomes. The Assessment and Planning Appeal Board Regulation 2019-28 is published under the authority of this act. This regulation establishes the authorities of the Board and formats of appeal.

Prince Edward Island

Prince Edward Island is the smallest province in size and population. However it still has a similar structure of acts. One unusual one is the Environmental Tax Act which might otherwise be called a tire tax. One could speculate it is labeled this way to allow for expansion to other environmental issues.

Occupational Health and Safety Act, RSPEI 1988, c O-1.01

In Prince Edward Island safety and health in the workplace is legislate using the Occupational Health and Safety Act. It authorizes

5 active regulations including one on workplace hazardous materials information systems and another on harassments.

Water Act, RSPEI 1988, c W-1.1

The Water Act does discuss allocation but also is concerned about quality and intergenerational equity for access to waters. The act authorizes four regulations, including sewage, water well construction, water systems, and allocation.

Environmental Protection Act, RSPEI 1988, c E-9

The Environmental Protection Act is an omnibus act that comes many aspects of environmental protection. Some of the areas it covers are environmental assessment, litter, water wells, ozone depleting chemicals, and waste. The act has been used to authorize 26 regulations and about a third of those have been rescinded.

Environment Tax Act, RSPEI 1988, c E-8.3

The Environmental Tire Tax authorizes the collection of a tax on new tires sold in Prince Edward Island. Perhaps a better title might be Environmental Tire Tax. Tire taxes are not unusual and do occur in other provinces including Alberta.

Newfoundland and Labrador

Newfoundland and Labrador have a similar structure to other provinces. Similar to Alberta and several other provinces it has selected sector regulators, each authorized by their own act, that can write sector specific regulations. Newfoundland and Labrador (NL) also has a final agreement with the Inuit of northern Labrador which influences regulation making in the province.

Occupational Health and Safety Act, RSNL 1990, c O-3

This occupational safety act has been active since 1990. This is quite a long span of time. Occupational health and safety rules generally get update more frequently, but perhaps the act gives them the framework to write current rules. The act authorizes five current regulations and five others have been rescinded. One of the rescissions was WHMIS which was replaced by an updated WHMIS.

Water Resources Act, SNL 2002, c W-4.01

Similar to other provinces the focus of the Newfoundland water resources act is to manage and control distribution of water in the province. It has a couple of interesting caveats. One is that water must also be managed in reference to the Labrador Inuit Land Claims Agreement Act, SNL 2004, c L-3.1. The land claims agreement takes precedent where there is a conflict. This interesting development will be echoed in the territorial regulatory regimes. The other caveat is the water demand for the Churchill Falls power

project. The Churchill Falls (Labrador) Corporation Limited (Lease) Act, 1961, SNL 1961, c 51 is mentioned directly in the water act.

Environmental Protection Act, SNL 2002, c E-14.2

The Newfoundland and Labrador (NL) Environmental Protection Act is also an omnibus environmental bill encompassing environmental topics that include waste management, spills, air emissions, contamination, and pesticides. Similar to the water resources act the Labrador Inuit Land Claims Agreement Act, SNL 2004, c L-3.1. is referenced directly in the NL environmental act. As with other provincial environmental acts it authorizes many regulations. It has authorized 32 regulations with the majority still being effective.

Section Conclusion

This brings us to the brief end of our tour of the provincial regulations. The key to this section is that it is just a sampling of regulations. Hopefully you start to see some parallels. For example many provinces have water acts that contemplate water rights. They also have very similar names, so when referencing them, a reference like the water act, would not be helpful unless it is more specific.

A note on structure is that it is common place to have rescinded regulations. A excellent example of a rescinded regulation is for workplace hazardous management information systems (WHMIS). This is due a new version based on international standards largely replacing the older versions.

As emphasized elsewhere it is essential to work with the most current regulations to ensure compliance.

Learning Questions

- What makes BC's approach to health and safety acts slightly different to other provinces?
- What is an interesting element of Newfoundland's and Labrador's environmental acts?
- How many provincial environmental acts can be abbreviated as EPA?
- Given that methods to protect the environment transcend boundaries, why are there so many variations on the theme?

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Water Act, RSA 2000, c W-3
Water Resources Act, SNL 2002, c W-4.01
Water Act, RSPEI 1988, c W-1.1
Water Resources Protection Act, SNS 2000, c 10
Workers Compensation Act, RSBC 2019, c 1
University Academics and Teaching Assistants, RRO 1990, Reg 858

18. Provincial Regulators and Tribunals

As defined in the Canadian constitution, each province has a defined set of responsibilities. These authorities include resources, private property, and health care and education (Parliament of Canada, n.d.). Resources can mean the fish wildlife, soils, water, minerals, oil and gas, waste, and air in the province. So, by extension the provinces can regulate environmental issues.

It is well beyond our scope to discuss all the regulators and tribunals in every province and territory. There are so many. So we will take Alberta and examine some interesting ones there. These are presented in no particular order and is far from being complete.

Alberta

Alberta Environment and Parks (AEP) – Defunct

Alberta Environment and Parks (AEP) regulated provincial environmental issues. Their purpose was stated as “works to protect and enhance Alberta’s environment and ecosystems to ensure a sustainable future, making life better for Albertans” (Alberta, 2022).

The AEP created regulations under the auspices of the Environmental Enhancement and Protection Act (EPEA). Regulations include Codes on Continuous Emissions Monitoring and Stack Sampling Code (Alberta, n.d.).

A government entity called Alberta parks has been engaged in park management since 1932 (Dixon, 2021).. During that period,

parks has been a distinct government ministry and sometimes it has been part of another ministry like Alberta Environment and Parks. AEP itself was called Environment, Sustainable Resource and Development (ERSD) in the past, but still included Alberta parks (Dixon, 2021). With a change in political leadership in 2022, the AEP became the Alberta Environment and Protected Areas (Dryden, 2022). Parks was shed from the portfolio.

Alberta Environment and Protected Areas (AEPA)

In 2022 the AEP was reorganized and parks changed ministries. They officially became Ministry of Environment and Protected Areas and the Ministry of Forestry, Parks and Tourism (Dryden, 2022). Government leaders indicated at the time they thought forestry is a precursor to parks and forestry trunk roads were part of recreation so they should be grouped together (Dryden, 2022).

Natural Resources Conservation Board (NRCB)

The Natural Resources Conservations Board (NRCB) is responsible for reviews of natural resource projects in Alberta. They have a motto of “balanced decision making in the public interest” (NRCB, 2023). They review projects based on Albert’s Environment Protection and Enhancement Act. The NRCB are also the regulator for confined feed operations.

The NRCB is authorized under the Natural Resources Conservation Board Act RSA 2000, c N-3. The feedlot authorization responsibility was added in 2022 under the Agricultural Operations Act, (NRCB, n.d.).

Alberta Energy Regulator (AER)

The Alberta Energy Regulator (AER) has a long history of regulating Alberta resources dating back to 1938. It is currently funded 100% by industry fees. The AER is a life cycle regulator that covers oil and gas and coal production in Alberta from initial design to final reclamation and closure. See also the chapter on Oil and gas regulators.

The current version of the energy regulator was created in 2003 by the Responsible Energy Development Act, SA 2012, c R-17.3. The AER has been previously known as Petroleum and Natural Gas Conservation Board, Oil and Gas Conservation Board, Energy Resources Conservation Board (ERCB), and Alberta Energy and Utilities Board (AER, 2022).

Alberta Utilities Commission (AUC)

The Alberta Utilities Commission (AUC) is a quasi-judicial arms length regulatory agency board that considers utilities in Alberta. The AUC has been in operation since 1915. The AUC regulates gas utilities and other utilities that deliver retail gas, electricity and water utilities. It is also concerned with wind powered electricity and solar produced electricity (AUC, n.d.)

The AUC is authorized in its current responsibilities since 2008 by the Alberta Utilities Commission Act, SA 2007, c A-37.2.

Alberta Land and Property Rights Tribunal (ALPRT)

The Alberta Land and Property Rights Tribunal (ALPRT) is also a quasi-judicial board, formerly known as the surface rights board. Its purpose is to “makes decisions about land planning, development,

right of entry, compensation and assessment matters”. (Alberta Land and Property Rights Tribunal, n.d.)

The ALPRT is authorized by the Alberta Land and Property Rights Tribunal Act, SA 2020, c L-2.3. The current form of the tribunal came in to existence in 2021.

Section Conclusion

This section presents a sampling of regulators and tribunals based solely in Alberta. Most provinces and territories have similar regulators and tribunals. Regulators and tribunals have a significant role in enforcement and development of the details of the regulations so they are important bodies to be familiar with. They are unelected and so cannot set the acts. Acts must be set by the elected legislative body in the province or territory.

Tribunals generally have an act that authorizes their existence and authorities.

Learning Questions

- Pick a province other than Alberta and look for the that provinces equivalent agency to the AEP.
- Pick a tribunal from another province and find its authorization act

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19. Territorial Regulations

The North

Canada's contemporary north consists of three territories: the Yukon, the Northwest Territories (NWT) and Nunavut. The contemporary north is also geographically defined by the 60th parallel. Over the centuries the borders and names have evolved as has the most current definition of the north as north of the 60th. From the late 1790s to modern times, the boundaries have changed. A very, very brief post contact history (Canada, 2020) (Nicholson, 2015):

- 1791 – Ruperts land is declared by the king of England. This later becomes owned by the Hudson Bay Company
- 1873 – NWT covers most of Canada including Alberta, Saskatchewan, most of Manitoba and the northern parts of Ontario and Quebec
- 1880 – The United Kingdom as it is know today transfers ownership of the arctic islands archipelago to Canada
- 1898 – The NWT is comprised of eight districts. Also the Yukon is created
- 1905 – Alberta and Saskatchewan are created, Manitoba expands and the NWT has four districts
- 1949 – Ontario, Manitoba and Quebec have grown to their present size and the NWT now consists of three districts
- 1999 – Nunavut is created as part of a land settlement agreement

As Canadian territories, the Yukon, NWT, and Nunavut do not have constitutionally guaranteed authorities. Their authorities are devolved from the federal government. As Indigenous land claims

have been settled, territorial authorities also reference the land claims agreements.

As the NWT and Nunavut used to be one territory, some of their laws have remained very similar. Neither NWT nor Nunavut have a political party system. However, the Yukon does have a political party system

Nunavut

Nunavut is an interesting development of the Canadian legal systems. On July 9, 1993 the land claims settlement was ratified by both Canada and the Indigenous peoples of Nunavut. Nunavut was created and the name translates to “our land”. Nunavut adopted a consensus style of government and there are no political parties. Representatives are elected and the premier is picked by consensus of the representatives. A simple majority is required to pass legislation (Kulchyski, P., 2017).

Acts and regulations often refer to the lands claims settlement. Also, interestingly Nunavut and the Northwest Territories share some of the same legal structures and history of their acts. The environmental act, Environmental Protection Act, RSNWT (Nu) 1988, c E-7 is one of those with a shared history. The wildlife act, Wildlife Act, SNu 2003, c 26, is one that refers extensively to the settlement agreement concepts.

Nunavut has a Commissioner who completes the ceremonial duties as the King’s representative that might be completed by the the similar position of the Lieutenant Governor in the provinces (Commissioner, 2021).

Yukon

Yukon's government today is an elected legislated assembly. The Yukon has a political party system with the current three main political parties being the Liberals, the Yukon Party and the NDP. The electoral system is a first past the post system as elsewhere in Canada (Yukon, 2022).

Yukon also has a Commissioner. The Commissioner's role is largely ceremonial with similarities to the Lieutenant-Governor of the provinces. The Commissioner signs all legislation that has been approved by the legislative (Commission of Yukon, 2022)

The Yukon has an environmental act, Environment Act, RSY 2002, c 76, that covers many things from storage tanks to waste. The latest regulation, Reduction of Single-use Bags Regulation, YOIC 2021/131 is to reduce the amount of single use plastic bags in the Yukon (Yukon, 2022).

Northwest Territories (NWT)

The NWT is also an interesting regulatory regime. Its legislative assembly is similar to Nunavut as it a consensus model. All members of the assembly are elected as independents, as there are no political parties. On election the members meet in caucus and the speaker is elected by caucus. The premier is then elected by caucus after those interested in being premier make speeches. Cabinet members are elected in a similar fashion. A simple majority is required to pass legislation. The premier or a cabinet minister can be removed by a vote of no-confidence.

Many authorities have been devolved to the NWT government. from the federal government Other authorities are linked to Land Claims Settlement.

Environmental assessment is divided into two areas: The

Inuvialuit Settlement Agreement area (sometimes called the western Arctic) and the rest of the territory.

The NWT also has a Commissioner as well. The Commissioners duties are very similar to Lieutenant Governor of the provinces (NWT, n.d.).

The NWT has an environmental act, the Environmental Protection Act R.S.N.W.T. 1988,c.E-7, to manage permits, wastes and spills. And similarly to Nunavut, the NWT has a wildlife act, Wildlife Act, RSNWT 2013, c 30 (which was a renewal in 2013 and replaced the 1988 act) , that is heavily constructed from constitutional rights.

Inuvialuit Settlement Region

The Inuvialuit Settlement Region (ISR) was created in 1984 when the federal government and the Inuvialuit signed the Inuvialuit Final Agreement (Inuvialuit Regional Corporation, n.d.). The ISR is interesting as it has many self governing authorities and straddles both the NWT and part of the Yukon.

International Tensions

The Canadian north is also interesting because it has several international tensions, some more serious than the others.

Hans Island

This dispute was over a tiny island between Canada and Greenland. While the jurisdiction of territorial waters between Canada and Denmark in name of Greenland (Kalaallit Nunaat) have full

agreement, the rock did not have agreement. For many years successive Danish or Canadian expeditions, occasionally military patrols, would raise their respective flag and leave a bottle of whiskey for the next visitor. In 2022, the conflict was resolved and a line drawn down the middle of the island (Hofverberg E, 2022). Will practice of leaving the whiskey continue?

Yukon/Alaska Border in the Beaufort Sea

Canada and the United States have disagreements over the calculation of the border between Alaska and Yukon in the Beaufort Sea. The dispute became relevant as oil and gas companies were interested in offshore drilling the Beaufort Sea (Griffiths, S. 2010).

The dispute centers on the difference in calculation of the border. Canada relies on a contract drawn up by Great Britain and Russia, the Anglo-Russian Treaty of 1825 (Breese, 2013).

The Northwest Passage

Perhaps the most serious dispute is an international dispute over the fabled northwest passage. The northwest passage, if feasible would reduce shipping traffic from China by up to 7000 kilometers (Fu and Jiang, 2020). To current times said in context of 2022, the dispute has been a moot point because ice prevents the route from being feasible. But with climate change, ice patterns have changed significantly and it recedes quicker with the extent being significantly less. Thus making the passage likely to be relevant in the near future.

Under international law, the passage could be declared an international strait, which would allow ships of any country to pass through the islands with no claim of Canada on rights of passage

or fee. Essentially this would allow ships to pass through Canada's archipelago of islands in the north with no Canadian oversight. The key to the claim is understanding whether the continental shelf is located between the islands of the archipelago. If the continental shelf is there, more weight is given to Canada's claim the passage is in Canadian waters. To prove or disprove the claim, Canada and the United States have been working on surveys of the waters (Griffiths, S. 2010).

Two distinct areas of environmental concern exist if the NWT passage is an international strait;

- Carbon black, emitted as soot from passing ships. In open international water, ships tend to burn the cheapest fuel which is a heavy bunker oil. Bunker burns with a high content of carbon soot. As the soot settles on ice or snow pack, the snow albedo, or its ability to reflect light, is changed, adding another feedback loop to the climate change of the arctic.
- Emergency response and oil spills. The Canadian arctic is not prepared with either infrastructure or trained response teams to respond to large scale oil spills. Should more traffic become a reality, spill response will be a major issue.

Section Conclusion

In the Canada's north, land claim settlements dominate the jurisdiction and any regulatory discussion. Land claims are mentioned in many major legislative works. The regulatory regime can become confusing, with a different political system (consensus based) in NWT and Nunavut, while Yukon resembles provincial arrangements. The territories have some structural parallels in law and government, but overall navigating the rules can be complex. There is also a number of legacy issues in the North including military bases and contaminated sites from past mining activities.

In the near future two issues may dominate regulatory discussions; defense and climate change.

Learning Questions

- Can you find a wildlife management act in all three territories
- in 2023 what is an international stressor on the Northwest passage?

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PART VI
REGULATORY
MANAGEMENT

20. The Professionals

Being a professional is a state of mind, education, and experience. As professionals we need to conduct our work with a sense of ethics, including understanding safety issues, regulatory requirements, and applicable standards. Perhaps though it is more than this. In provinces and territories being a professional is regulated. We will examine what is involved for being a professional from the perspective of wetlands in Alberta, but the principles apply anywhere in Canada and to many tasks required under legislation.

Wetlands are regulated in Canada in a complex manner. As one of the ongoing themes, Canada has some overlapping environmental jurisdictions. This is true with wetlands. In Alberta you can find the Alberta official wetland policy at the following website. It indicates that the following acts are all applicable (Alberta Wetland Policy, 2020). The following guide is inspired by the Alberta Wetland Policy website but with links to the actual legislation:

- Canadian Navigable Waters Act, RSC 1985, c N-22
- Migratory Birds Convention Act, 1994, SC 1994, c 22
- Water Act, RSA 2000, c W-3
- Environmental Protection and Enhancement Act, RSA 2000, c E-12
- Municipal Government Act, RSA 2000, c M-26
- Public Lands Act, RSA 2000, c P-40
- Surveys Act, RSA 2000, c S-26
- Fisheries (Alberta) Act, RSA 2000, c F-16
- Responsible Energy Development Act, SA 2012, c R-17.3

In Alberta, the Wetland Policy was established by Alberta Environment and Parks (AEP). Under this policy AEP has issued several directives. One of the key elements to the policy is to establish the value of a wetland that might be impacted by a project. The wetland must be assessed using a specific tool under the

directive. One of the essential items of the wetland assessment is that it must be signed by an **authenticating professional** (Alberta Wetland Policy, 2020).

Authenticating Professional

So what is an authenticating professional?

Well that is a great question. It turns out it is a very specific with the answer depending on where you work. In Alberta an authenticating professional is a registrant with one of 10 professions that are regulated by the Province of Alberta. The Wetland Policy mentions specifically biologists and engineers, but we are going to only look at Agrologists (Wetland Policy, n.d.).

The authenticating professional is registered to an Alberta association that has a requirement to follow a **code of conduct** or **code of ethics**, depending on the terminology used by the association. The authenticating professional must have the experience and competency to complete the task being authenticated. Under the wetland policy, they describe the specific items that are needed to be consider an authentication professional (Wetland Policy, n.d.).

One of the key elements is that you must be registered with an Alberta Professional Organization. So for example a registration for a national certification service, like ECO-Canada, is not regulated provincially and is therefore not eligible to be an authenticating professional unless they are also a member of one of the 10 Alberta regulated associations (ECO Canada, 2021).

Agrology

To dig further we will examine the agrology profession, again only

in Alberta. Agrologists are registered to the Alberta Institute of Agrologists (AIA). The AIA is provincially regulated to the following Acts and regulations (AIA, n.d.):

- Agrology Profession Regulation, Alta Reg 71/2007 and
- The Agrologists Act, CCSM c A50 which authorizes the regulations in Alberta
- Interpretation Act, RSA 2000, c I-8 (which applies to many acts)

The acts and regulations set the conditions for the AIA to regulate the agrology profession with bylaws. These bylaws set up the requirements for an agrologist to be considered registered and competent. The requirements include formal education, experience and continuing education (AIA, 2020).

The AIA has a requirement to declare practice areas. And if we turn to the topic at hand, the Wetland Authenticating Professional, one of the practice areas is wetland and riparian areas (AIA, 2020).

Section Conclusion

Using our example of a wetland assessor in Alberta, an assessor needs to be considered a professional in the area. This means they must be a member of one of Alberta's 10 regulated professional organizations. You must have the experience and competency to complete the work. If you are an agrologist, you must be registered with the AIA and have a declared area of practice of wetland and riparian Areas (AIA, 2020).

This is just one qualification as an example. But it serves to illustrate some of the typical things a regulation may have on your own practice.

Learning Questions

- Which professional organization does your degree take you to?
- What does your professional organization need you to do?
- If someone was only registered to Eco-Canada could they be an Authenticating Professional?

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2I. Management Systems

Management systems are not necessarily a requirement for compliance or required by legislation. But without them it can be a challenge to stay in compliance in a every complicated world. There are many management systems, some are defined in standards like ISO, others are proprietary to large corporations. They may seem unwieldy, but they do not need to be. In this book we are only going to discuss one system that has been around for a long time.

It is the simple Plan-Do-Act-Review cycle. It has also been called the Deming cycle and can trace roots to the scientific method dating back to the 1600s (Deming, 2022). Here we will show it modified for environmental compliance:

Plan

Planning is itself a two step process. The first part is the gap analysis. In the gap analysis an entity looks at where there is a gap between what a law requires and what the entity is doing. IT may also consider just gaps in knowledge. We ask questions like:

- What regulations apply to us?
- Do we collectively understand them?
- Do we follow them?
- Do we have the tools to make compliance?
- Do we have any examples of non-compliance?

With the gap analysis we can then develop a compliance plan. Elements of the plan should include:

- Priorities established for action on improvements
- Responsibilities assigned

- Establish performance measures
- Budgets in place for the improvements needed
- Training
- Supervision expectations
- Timelines for completion of actions

We can illustrate this with an example of a tank of fuel in Alberta on an oil battery. We know that this falls under the AER, and in particular Directive 055. The directive states for the size of our tank, we need secondary containment and regular inspection. So on inspection, we find the tank does not have secondary containment (gap analysis). The compliance plan then involves budgeting of secondary containment, training of the requirements of Directive 055 and how to inspect needed for the local operator.

Do

The “Do” phase is the implementation phase. This means that the entity completes the compliance plan.

Following on with the example of the tank; the actions needed are engineering and installation of the secondary containment, Training of the operator and regular inspections.

Check

The “Check” phase is to then make sure that the compliance plan has been followed. This may occur periodically or annually depending on the priorities established during the planning. Checks can include some of these concepts:

- Workplace inspections (daily, weekly, monthly, annually as

defined by the priority or the legislation)

- Audits – these involve a systematic review by parties who may not be involved in the day to day operations. Sometimes the audit may be undertaken by external parties
- Performance reviews – this considers individual responsibilities to deliver the plan
- Management reviews of documentation

Following on with the example of the tank; an inspection of the tank shows that the secondary containment was put in place. The performance of operator was reviewed and they completed the inspections. But they had not been trained yet and the records were not consistent.

Act

Based on the information gained from the “Check” phase, the entity must act to correct the deficiencies. Following on with the example of the tank; the deficiency noted was that the operator had not been trained. Management needs to ensure the operator gets the training.

Section Conclusion

On completion of the actions after the review, the process will start again with another planning cycle. This system is just an example of a compliance management system. There are many ways to do compliance systems with more steps, but rarely fewer steps. Much of a system is going to be defined by the type of operation and jurisdiction. But some form of plan-do-check-act is essential to achieving consistent compliance.

Learning Question

1. If you were the operator what could you do to ensure that you could do to stay in compliance?
2. If you were the operators supervisor?
3. If you were the Management?

References

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22. Legal Databases

A recurring theme of this book is that we are presenting only a brief snapshot of regulations and laws. They do change with time including during the time this book was written. For selected regulations the quickest way to get an updated regulation is to go the official sources to provide the latest version. Official sources exist in most jurisdictions. For example Alberta's laws are officially available from the Alberta Kings Printer. Federal regulations are readily available from Justice Canada in either English or French.

But if you were going to do a comparative study of climate laws across the provinces this would be a tedious way to go. You would need to search 10 or more different official outlets. So, we want to search something like a database.

The following databases may be useful.

CANLII (Canada)

The Canadian Legal Information Institute (CANLII) is one of those great ideas you wish you had. CANLII contains all the acts, regulations, and many court cases of Canada under one website.

CANLII may not include all the cases, but it is an impressive database. It is run for lawyers and the public and is funded by lawyers (*CanLII*, n.d.). This book uses CANLII extensively.

Try it at: <https://www.canlii.org/en/>

VLEX (United States)

Air quality management in Canada today is heavily influenced by the United States. So, it makes sense to follow CANLII, with a note on

VLEX. This is a United States version of a legal database. It also has news alerts on legal events as well as an artificial intelligence (AI) to help find legal precedents (VLEX, n.d.).

Try it at: <https://ca.vlex.com/>

ECOLEX (International)

Environmental issues like air quality are clearly local, national, and international issues. So, it can be helpful to know world regulations. The UNEP, supported by FAO and IUCN have developed and operate a similar idea of a database to only focus on environmental law. According to the ECOLEX website much of the funding was from the Dutch government (ECOLEX, n.d.).

Try it at: <https://www.ecolex.org/>

BAILEE (United Kingdom)

Air quality regulations started in the UK in our modern era in 1956 with the UK Clean Air Act. Compared to VLEX and CANLII, this database appears a bit dated from a technology perspective. But where else are you going to be able to look at laws as old as 1215. Yes, the Magna Carta with annotations is there.

An interesting feature is a set of links to similar databases around the world including CANLII (BAILEE, n.d.).

Try it at <https://www.bailii.org/>

London School of Economics (LSE) (International)

This one seems a bit odd for an entry, but in one of the London School of Economics (LSE) “schools” they hold a world database of climate laws grouped according to country. This database gives you the ability to track climate initiatives across the world (Grantham Research Institute on Climate Change and the Environment (n.d.).

It will overlap with other databases but is an interesting source for world view on climate change. When looking up Canada, you will note it only covers federal laws.

Try it at <https://climate-laws.org/>

Section Conclusion

It is important to use the most current regulations in regulatory management, whether for compliance or research. By using these databases we can improve our efforts at understanding the most current laws and then ensuring compliance.

Learning Questions

1. Use the databases to find a law on sulphur emissions from as many countries as possible.

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PART VII
CROSS CANADA

23. CCME

The Canadian Council of Ministers of the Environment (CCME) is composed of the ministers of environment from the federal government, the ten provinces, and three territories, plus the civil servants who support them (Canadian Council of Ministers of the Environment, n.d.). The CCME also encourages cooperation between regions. The CCME goal is to work on “collective action on environmental issues of national and international concern.” (CCME, n.d.).

The CCME is not a regulator, but it does produce standards, like soil standards which are referenced in regulations. Specifically they work on:

- Air
- Climate Change
- Water
- Waste
- Guidelines

The CCME also sets aspirational goals; for example waste reduction targets. The aspirational targets have no legal status. An example of a CCME aspirational statement is this one from 2014 ” Canada is a world leader in waste management.” Sometimes we need to be careful with aspirational statements as they represent a desire, not necessarily a fact. The Conference Board of Canada in an undated graphic described Canada’s rank in terms of domestic waste as 17th of 17 countries, with our domestic waste volumes actually increasing instead of decreasing. The Conference Board of Canada graded Canada a “D” (Conference Board of Canada, n.d.).

Currently the CCME is working on three waste management goals:

- Zero plastic waste (said in context of single use plastics). It has

been working this initiative since 2019 and has not yet made a specific recommendation for regulation.

- Aspirational goal of reducing waste. The target is to reduce domestic waste to “490 kg per person (a 30% reduction) by 2030”. According to the Conference Board of Canada this would put Canada about par with Norway and still behind Japan (Conference Board of Canada, n.d.). Perhaps it is not really a world leading performance.
- Extended producer liability.

Clearly the CCME is not a regulator, and the standards are not regulations, and aspirations have little substance unless backed by regulation. The standards may become legally enforceable if they are referred to in regulations. For example, Alberta refers to CCME Soil Standards in its soil criteria.

Possibly the most useful things from the CCME are the chemical standards for soil and water. They provide a scientifically defensible basis for regulating contamination. CCME standards are freely available on the internet.

One of the most recent activities of the CCME is publishing the Pan-Canadian Framework on Clean Growth and Climate Change (CCME, 2016).

Section Conclusion

The CCME is a leader in producing chemical based standards. The CCME has standards that go a long way to encourage environmental protection minimums across the Canada. It works well with a philosophy that all Canadians deserve similar protection, no matter where you live in this country.

Aspirational goals must always be considered in context of the question: Is there regulation to back them up?

Learning Questions

- What would make a CCME standard enforceable in Canada?
- Is drinking water a CCME standard in Canada?

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24. Oil and Gas Regulators

Oil and gas in Canada represents a significant contribution to the Canadian economy. NRCan's 2021-2022 Energy Fact Book states that energy accounts for 8.1% of Canada's GDP (NRCan, 2022). It also states that energy production and consumption represents 81% of Canada's GHG emissions.

So whether you consider the economics or the environmental impacts of the sector, regulations are needed. In Canada, major oil and gas operations occur in Alberta and Saskatchewan and British Columbia. Newfoundland is also an important producer, with Manitoba and the Northwest Territories having more modest productions.

So it is not surprising that there are several dedicated regulators for oil and gas in Canada. Many organizations are changing their names to be energy regulators. The challenge of course is what is included in the scope of "energy", as each jurisdiction is defining it differently.

Federal

Federally the constitution considers Indigenous issues and inter-provincial transportation in context of oil and gas in pipelines as a federal responsibility. Federally there are two regulators dedicated to oil and gas.

Canadian Energy Regulator (CER)

The Canadian Energy Regulator (CER) replaced the National Energy Board in 2018. The CER is a life cycle regulator and considers

energy regulations in interprovincial pipelines and inter-provincial power lines. It also considers oil and gas activities in the frontier areas of Canada. The CER's responsibilities and areas in frontier areas gets a bit complicated as geographic areas, local considerations, and different acts are complicating factors. Its areas of responsibility include (CER, n.d.).

- In Nunavut and northern Canadian territorial waters the CER is the regulator operating under COGOA (Canada Oil and Gas Operations Act R.S.C., 1985, c. O-7)
- In the Northwest Territories of the Inuvialuit Settlement Region (ISR) the CER regulates under agreement with the ISR and under the OGOA.
- In the Norman Wells Proven Area of the Northwest Territories the CER regulates and operates under COGOA
- In the St. Lawrence river mouth the CER is regulator under the Canadian Quebec Joint Accord Area and under COGOA.
- On the west coast of British Columbia the CER regulates any offshore activities. Although technically there is a moratorium on exploration (CER, n.d.).

The CER is based in Calgary, Alberta.

Indian Oil and Gas Canada (IOGC)

The Indian Oil and Gas Canada (IOGC) is a division under the federal department of Indigenous Services. It is considered a separate employer (IOGC, 2022). It is dedicated to regulating oil and gas activities on First Nations lands. The IOGC has a joint role to ensure the industry is regulated but also to ensure fair royalties are paid to the First Nations on whose land the oil and gas is produced (IOGC, n.d.).

Technically the IOGC environmental regulations mirror Alberta

regulations fairly closely. The IOGC is located on Tsuut'ina First Nation lands near Calgary.

Joint Provincial Federal Boards

Offshore, on Canada's east coast, there are several major oil and gas developments. Offshore is generally the responsibility of the CER, but in the cases of Nova Scotia and Newfoundland, joint provincial and federal administration boards have been appointed.

Offshore Newfoundland: Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB)

The Offshore Newfoundland: Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB) is an independent agency that makes and enforces regulations for the offshore of Newfoundland and Labrador. It was created in 1986 and has representation from both federal governments and provincial government. While it is an independent agency, it operates within authorities created by several acts and also reviews selected decisions with government ministers (C-NOLPB, n.d.).

A search, using the C-NLOPB website, looking for greenhouse gases rules results in no links (C-NLOPB, n.d.).

Canada-Nova Scotia Offshore Petroleum Board (CNSOPB)

The *Canada-Nova Scotia Offshore Petroleum Board (CNSOPB)* is similar to Newfoundland's C-NLOPB in that its responsibility is the

safe management of oil and gas assets offshore of Nova Scotia. It too is a joint board of the federal and provincial governments and was established in 1990. It operates under a variety of acts that were established to provide the board with its authorities.

There is a difference though between Nova Scotia and Newfoundland industries in that the Nova Scotia oil and gas industry is largely decommissioned. Also, land sales in recent years have resulted in no bids.

In April of 2022 a joint announcement by the federal and provincial governments have indicated the boards jurisdiction will be extended to include offshore wind turbines. Offshore wind has largely been absent from Canada's shores but it is expected that this will change in the near future. The board will be "modernized" and change its name to Canada-Nova Scotia Offshore Energy Board (CNSOEB) to reflect this new mandate (CNSOPB, 2022)

Provincial and Territorial Dedicated Regulators

British Columbia, Alberta, and the Northwest Territories have dedicated oil and gas regulators. Similar to the offshore and the federal regulators, these are independent regulators.

Alberta Energy Regulator (AER)

The Alberta Energy Regulator is an independent life cycle regulator of the "crude oil, natural gas, oil sands, and coal resources, and an extensive pipeline" (AER, n.d.). It covers a range of resources from oilsands to conventional oil and gas. The AER does not regulate renewable energy and as would be expected it does not regulate inter-provincial pipelines or operations on Indigenous land.

Although in the latter case there is cooperation between the IOGC and AER.

The AER has long historical roots in the Province and has evolved over the years. Arguably the most sophisticated regulators of oil and gas in Canada. The AER has a series of regulations, which are called directives, that cover almost every aspect of the industry.

And in an effort to be transparent, the author has participated in the development of Directive 058, Waste Management as an industry representative on the committee reviewed the directive in the 1990s.

Alberta has extensive regulatory coverage from waste to flaring, with two areas being currently problematic;

- Abandonment liabilities. Technical directives exist on how to abandon facilities and reclaim the land, but there is still controversy over the timing.
- Climate change. Two initiatives that are requiring the attention of the AER are carbon capture systems and fugitive methane emissions.

The AER has a long and fascinating history. Their web site tells the story of how things are regulated today and you can also find some of the story from 1938 until today under previous mandates as the Energy and Utilities Board (EUB) and the Energy Resources Conservation Board (ERCB).

BC Oil and Gas Commission (BCOGC)

The BCOGO is due to be changed in 2023. Currently (sic 2022) the BCOGC is an independent regulator in the province of British Columbia which cites itself as a single window regulator. This is similar to the life cycle concept of regulator found in other jurisdictions. Also, similar to other regulators, the Commission

regulates all aspects of the industry in British Columbia (BCOGC, n.d.).

The BCOGC is currently concerned about trending topics include orphan liabilities, caribou recovery plans, climate change and separately methane emissions, fracking, and induced seismic events.

BC Energy Regulator

The BC Energy Regulator will replace the BCOGC in 2023. According to the BC government (BC,2023) it will be modernized with a larger board of directors and will now include hydrogen in its mandate. In BC then energy will include oil and gas and hydrogen.

OROGO – NWT

The Office of the Regulator of Oil and Gas (OROGO) is a relatively new regulator in Canada and considers oil and gas operations in the Northwest Territories except for in the Inuvialuit Settlement Region (ISR) and the Norman Wells historical reserve. As a new regulator in an area with significant geography, the regulator has been busy establishing their unique controls (OROGO,n.d.).

One of the interesting aspects for the regulator is the combination of a vast geography and many suspended wells. The OROGO has a program where communities can provide observations on the wells in their area and should follow-up be required, the communities have a direct linkage with the OROGO.

Oil and gas activity in the NWT has gone through several surges of exploration, and today exploration or development is minimal with the exception of Norman Wells which is an active producer of oil.

Provincial and Territorial Departments

Both Saskatchewan, Manitoba and Yukon do not have separate regulators for their oil and gas activities, but regulate the industry as part of government departments..

Saskatchewan

The Ministry of Energy and Resources is responsible for the development of oil and gas in Saskatchewan. It too has many regulations of the industry (Saskatchewan, n.d.) which have parallels with Alberta's industry. Arguably, Saskatchewan regulations are not as sophisticated as Alberta and the Ministry of Energy both regulates and promotes oil and gas which could be seen as a conflicting interest.

Manitoba

Manitoba's oil and gas industry is the smallest of the western provinces. It is regulated by a section of the Department of Agriculture and Resource Development of the Manitoba government (Manitoba, n.d.).

Yukon

In the Yukon, oil and gas is regulated by the territorial government with the Oil and Gas Act RSY 2002, c. 162. which was empowered by the Canada-Yukon Oil and Gas Accord Implementation Act S.C. 1998, c. 5. The oil and gas industry is regulated by a division of the

Yukon government. Although Yukon has produced oil and gas in the Liard region, a current listing of wells shows no active oil or gas wells currently in the Yukon (Yukon, n.d.)

Section Conclusion

Although the environmental issues do not vary much with geography, the regulatory regimes do. It is critical to learn the regulations in the jurisdiction that the oil and gas company operates in. The rules can be quite complex, and there is no defence to non compliance called “I did not know”.

Learning Questions

1. Given that greenhouse gases are a problematic issue for the global environment, try the following searches on both the AER and C-NLOPB web sites: Greenhouse gases. How many hits do you get?
2. Consider the role of the regulator; does it make sense to have an independent regulator?
3. What are the advantages of an independent regulator?

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25. Life Cycle Regulators

A life cycle regulator is a regulator who is responsible for regulations over the life of a project from conception to final reclamation. The life cycle concept is relatively new and described as a single entity that will regulate over the entire life span of a project in selected sectors. Sometimes a life cycle regulator is discussed in terms of “red tape reduction”.

As with any regulator, the authorities of a life cycle regulator must be defined in an Act.

A Canadian federal example of a life-cycle regulator is the Canadian Energy Regulator (CER). The CER is responsible for everything in an oil and gas development that is either a frontier project (as defined by regulations) or one that crosses borders like a pipeline. The CER does not cover the original impact assessment of large defined projects (Canada Energy Regulator, 2022).

Another federal example of a life cycle regulator is the Canadian Nuclear Safety Commission (CNSC). They regulate all aspects of nuclear power in Canada no matter where the power plant is located. They also do not cover the original impact assessment of large projects (Canadian Nuclear Safety Commission, 2022).

A Canadian provincial example of a life cycle regulator is the Alberta Energy Regulator (AER) who are responsible for everything in the life cycle of oil and gas and coal development in Alberta. Their exception is the Duty to Consult which is held by the Alberta Consultation Office (ACO) (Alberta Energy Regulator, n.d.).

Are life cycle regulators the only regulator for a sector?

No. This seems confusing and perhaps even contradictory. With the

authorities set by the Canadian constitution for provinces, and the federal government, it would be almost impossible for an entity or sector to fall strictly under one regulator.

For example in Alberta, oil and gas facilities must still follow regulations enforced by Environment Canada and Climate Change for NPRI, even though there is a life cycle regulator for the Alberta oil and gas sector.

Do life cycle regulators set standards?

It is complicated. A life cycle regulator will set standards for the sector. But a life-cycle regulator generally does not set independent ambient standards. In air quality, the ambient air standards are province wide and not sector wide. So, for example there is not an air quality standard for the oil and gas sector and different standards for the rest of industry. Similarly for soil and water contamination.

The role of the life cycle regulator is to make and enforce regulations that help maintain the provincial or federal standard. So, for example, the AER has a regulation on methane (Directive 060) (Alberta Energy Regulator, n.d.), that is designed to meet the provincial air quality standards.

Section Conclusion

A life cycle regulator can become the dominant regulator in a sector. They can influence other sectors, but outside of the defined scope, they have no authority.

It is important to understand when other regulators have jurisdiction even in a sector that has a life cycle regulator.

Learning Questions

1. Why do we have a national nuclear regulator without provincial equivalents, but provincial and federal oil and gas regulators?

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26. Impact Assessment Acts

Impact Assessment in Canada

When considering environmental assessment or perhaps the wider scope of impact assessment in Canada it is important to remember Canada is a federation with a constitution. The constitution sets out authorities for different levels of government and in doing so was not clear on environmental issues, so there is overlap.

Federal legislation affects federal projects (in national parks, buildings etc.), interprovincial projects, and federally regulated aspects of the environment for selected large impact projects. Additionally, each province has its own set of environmental assessment regulations and rules for projects that are set within the province. The territories also have environmental assessment regulations. As a territory does not have constitutional authorities, the regulations are passed at the federal level, for local administration.

For major projects, there can be overlapping jurisdictions. The federal government does have a process where they can enter into an agreement with a province and designate that the provincial process is equivalent. At the current time (sic 2022) only British Columbia has a working agreement on equivalency with the federal government. The goal of these agreements is to have one assessment process per project.

So there are as many as 14 different assessment processes in Canada. Each has their unique aspects, but there are some common underlying principles. One of these underlying principles is the “Duty to Consult” that applies to any government review of a project.

Federal

Canadian Environmental Assessment Act, 2012, SC 2012, c 19, s 52

The Canadian Environmental Assessment Act, SC 2012, c19, s52 (CEAA, 2012) had a major revision in 2012. Its scope was to assess selected projects within the scope of federal responsibilities. It was replaced in 2019 by the Impact Assessment Act SC 2019, c 28, s 1. CEAA (2012) is still relevant in 2022 as many projects undergoing review were grandfathered under the CEAA rules.

Impact Assessment Act SC 2019, c 28, s 1

The federal Impact Assessment Act (IAA) was published in 2019 as a result of a commitment by the newly elected government to make the rules more transparent, fairer and include stronger commitments to consultation with Indigenous peoples.

In the IAA there is strong commitment to action on climate change. Among the mentions of climate change are the following:

- From the preamble, “Whereas the Government of Canada recognizes that impact assessment contributes to Canada’s ability to meet its environmental obligations and its commitments in respect of climate change;”
- From Section 22, Factors; “(i) the extent to which the effects of the designated project hinder or contribute to the Government of Canada’s ability to meet its environmental obligations and its commitments in respect of climate change;”
- From Section 66, Factors – Public Interest: “(e) the extent to which the effects of the designated project hinder or contribute

to the Government of Canada's ability to meet its environmental obligations and its commitments in respect of climate change."

- From Section 95, Ministers Power; *"(2) The Minister may deem any assessment that provides guidance on how Canada's commitments in respect of climate change should be considered in impact assessments and that is prepared by a federal authority and commenced before the day on which this Act comes into force to be an assessment conducted under this section."*

Under the IAA there are five current regulations:

- Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations, SOR/2021-25
- Designated Classes of Projects Order, SOR/2019-323
- Information and Management of Time Limits Regulations, SOR/2019-283
- Physical Activities Regulations, SOR/2019-285
- Transitional Regulations for the Purpose of the National Energy Board Cost Recovery Regulations, SOR/2019-300

The IAA is administered by the Impact Assessment Agency of Canada. Which is very confusingly abbreviated as the IAA. It offers guidance on process, recommendation to decision makers and also holds a publicly available database on projects that have been assessed or are being assessed (IAA, n.d.)

British Columbia

British Columbia has recently (2019) changed its assessment act

to the Environmental Assessment Act SBC 2018 Chapter 51. The older Environmental Assessment Act, SBC 2002, Chapter 43 is still relevant as many projects were grandfathered under it.

Greenhouse gases is mentioned in the act and assessments must consider British Columbia's Climate Change Accountability Act, SBC 2007, Chapter 4 (Environmental Assessment Act SBC 2018, Chapter 51,s 25 (2) h). British Columbia's climate change provisions are the most compatible with the federal climate change provisions.

The Environmental Assessment Act is administered under the British Columbia Environmental Assessment Office abbreviated as EAO. As with other environmental assessment regulatory offices, the EAO maintains a public database, issues instructions and guidelines and evaluates assessments sent to it (BCEAO, n.d.)

Alberta

The need for Environmental Assessments in Alberta is defined from the Environmental Assessment Regulations 112/93. This regulation is written under the authority of the Alberta Environmental Protection and Enhancement Act (AEPEA). Also written under the authority of the AEPEA is the Environmental Assessment (Mandatory and exempted Activities) Regulation 112/1993. This later defines which activities are mandatory, which activities are excluded. Activities that are not on either list are discretionary and require a screening review to determine if a full environmental assessment is required.

In Alberta there are two distinct streams of assessments, oil and gas and coal facilities are regulated and approved by the Alberta Energy Regulator. Other projects that need assessment under the regulations are reviewed under the Alberta Environment and Parks umbrella. Both streams must meet the intent of the regulations.

The regulations do not expressly mention climate change or greenhouse gases.

All environmental assessments must be conducted in accordance with the Duty to Consult as articulated by Alberta's Consultation Office. (ACO). The ACO finalizes the decisions on Duty to Consult for both Environmental Assessments reviewed by AEP and also by the AER.

Saskatchewan

Saskatchewan manages environmental assessments using its Environmental Assessment Act SS 1979-80, c E-10.1. The Environment Assessment Act (EAA) provides the Saskatchewan government the authorities to conduct Impact Assessments. The EAA establishes Minister's authorities, procedures and requirements of what projects might require an assessment. There are no subservient regulations (Canlii, 2022).

The government of Saskatchewan maintains a public database of projects within the province (Saskatchewan, n.d.). There is no mention of climate change or greenhouse gases in its EAA.

Manitoba

Manitoba does not have a dedicated environmental assessment act, instead they include environmental assessment in their The Environment Act, CCSM c E125. Although similar to Alberta, the Manitoba act has significant discussion of the assessment process.

Manitoba's act also has an explicit discussion on climate change and a requirement that it must be considered in the assessment (The Environment Act, CCSM c E125. Section 12.0.2).

The Manitoba government has a bureau (Environmental Approvals Branch) that administers the process (Manitoba, n.d.). They also maintain a public registry of projects. The Classes of

Development Regulation Man Reg 164/88 establishes those projects that requires an assessment.

In addition to regulations of an administrative nature, Manitoba also has a regulation called the Joint Environmental Assessment Regulation, Man Reg 126/91, which allows for joint environmental assessments. Manitoba does not have a current (2022) agreement with the federal government on equivalencies for the Impact Assessment Act.

Ontario

Ontario has a dedicated environmental assessment act; Environmental Assessment Act, R.S.O. 1990, c. E.18 Ontario has had environmental assessment requirements since 1975, but like everywhere else in Canada, the details have changed with time. Current changes (sic 2020) include using a list based approach to determine when a detailed environmental assessment is required.

The act does not specifically mention climate change or greenhouse gases. Climate might be considered due to other criteria listed in the act. Additionally there are various guides to help proponents with a complete analysis. One of these is the Ministry of Transportation Air Quality & Greenhouse Gas Guide.

Ontario also has an environmental registry. Its scope is much larger than similar registries as Ontario does not limit searches to environmental assessments. This larger scope may have the potential effect of looking for a particular project more challenging,

Quebec

In Quebec, environmental assessments are completed under the authority of the Environment Quality Act, CQLR c Q-2. In the

preamble the act states one of its aims it “*promotes the reduction of greenhouse gases as well as adaptation to climate change and makes it possible to take into consideration the evolution of knowledge and technologies as well as the issues related to climate change*” (Environment Quality Act, CQLR c Q-2, Preliminary Provision)

Quebec also has a registry that was established on March 23, 2018. The search engines is listed in French.

Under the Environmental Quality Act there are 102 regulations (CANLII, 2022). Perhaps one important regulation for environmental assessment is Regulation respecting the environmental impact assessment and review of certain projects, CQLR cQ-2, r23.1 This regulation sets the process for environmental assessment in Quebec and includes specific provisions for including climate change.

New Brunswick

The Environmental Impact Assessment Regulation 87-83 is written under the authority of the New Brunswick Clean Environment Act, RSNB 1973, c C-6. The regulations establishes the authorities of the minister to set the assessment process and remedies for non-performance. The regulation was originally written in 1987.

No mention is made of climate change or greenhouse gases. New Brunswick has a website dedicated to environmental assessments. As with other jurisdictions they maintain a public database of projects. They also have various guides, including “A Guide to Environmental Impact Assessment in New Brunswick“. The guideline does mention climate change, but refers to a federal guideline and website that is no longer active. (Department of Environment and Local Government, 2018).

Nova Scotia

Nova Scotia also includes environmental assessment in their environment act (Environmental Act, SNS 1994-95, c 1, Part IV). In addition to the act there is also a regulation, Environmental Assessment Regulation N.S. Reg. 221/2018, which defines how the province will review new projects.

The regulation has the following clause that could be used to ensure climate is taken into account (Environmental Assessment Regulation N.S. Reg. 221/2018, S12(i)):

12 (i) such other information as the Minister may require.

The Environmental Assessment Board Regulations, NS Reg 27/95 establishes the environmental review board. The Nova Scotia government also has a web page where more information can be found on their process. It also includes a public registry of projects under assessment (Nova Scotia, n.d.)

Prince Edward Island

Prince Edward Island authorizes and requires environmental assessments through its Environmental Protection Act, RSPEI 1988, c E-9, section 9. It is a relatively short legislative authorization. The designated minister has the authority to add conditions to any approval issued after an environmental assessment (Environmental Protection Act, RSPEI 1988, c E-9, section 28).

The government department of Environment, Energy and Climate Action administers the environmental assessment process. PEI has no dedicated regulations, but do have an extensive guideline (PEI, 2010). The department maintains a public database of projects under review (PEI, n.d.).

The guideline makes no mention of climate or greenhouse gases.

Newfoundland and Labrador

Newfoundland authorizes the requirement for environmental assessments under its Environmental Protection Act, SNL 2002, c E-14.2. It further defines environmental assessments with regulation Environmental Assessment Regulations, 2003, NLR 54/03.

The government department that is authorized by the regulation and act maintains a database of projects that dates from March 2000 (Environment and Climate Change, n.d.). The regulations do not discuss climate change, nor does the referenced guide “Environmental Assessment ... A guide to the Process”.

Interestingly the Department of Municipal Affairs and Environment conducted a public engagement into updating the environmental assessment process. One of the suggestions was to incorporate climate change and targets for reduction. The results of the engagement were published in 2020. (Department of Municipal Affairs and Environment, 2020)

Territories

As noted regularly, Canada’s three territories do not have authorities defined in the Canadian constitution. Territorial authorities are derived from authorities devolved from the federal government.

The federal Impact Assessment Act does not apply to the territories themselves, as each territory has a dedicated assessment act passed for the them by the federal government. There is a dedicated assessment act for each territory. With all territorial assessment acts, any Indigenous settlement agreements must also be respected.

Nunavut

Nunavut environmental impacts are authorized under the Nunavut Planning and Project Assessment Act S.C. 2013, c. 14, s. 2. This is an act of the Parliament of Canada with reference to the Nunavut land claims settlement. The act creates the Nunavut Impact Review Board and the Nunavut Planning Commission to work on or with impact assessments.

The Nunavut Impact Review Board also keeps a public database for projects under its review (NIRB, n.d.).

An impact assessment created for the purposes of this act must include climate change in its scope. The review board must include climate change as part of its considerations.

The Review Board can recommend a federal review of a project if it feels one is needed. Criteria for the federal assessment also includes consideration of climate change.

Northwest Territories

Environmental assessment is divided into two basic areas: The Inuvialuit Settlement Agreement area and the rest of the Territory which is covered by several review boards.

Inuvialuit Settlement Region

The Inuvialuit Settlement Region is a unique regulatory part of Canada. The settlement region is the result of the final settlement agreement by the Inuvialuit and the Canadian Government. It covers both land and ocean. It also covers parts of both the Yukon and Northwest Territories. Although most of the area is in the Northwest Territories. This is unique as in addition to the

Indigenous government structure it also covers two territorial governments and the federal government.

The Inuvialuit Settlement Region (ISR) has a screening committee to review projects. The Environmental Impact Screening Committee (EISC) conducts an initial screen to determine if the project is exempt, approved by the screening or needs to be referred for a full assessment.

If a project is referred, the Environmental Impact Review Board (EIRB) conducts the detailed review. The detailed review uses the federal rules and in the case of the oil and gas development would also engage the federal Canadian Energy Regulator (CER). The CER is on contract with the ISR. It is the only land based area in the North that follows this process.

Both the EISC and the EIRB are joint committees or co-management with members nominated from various governments and the Inuvialuit Settlement Region.

Southern Northwest Territories

The Mackenzie Valley Resource Management Act (S.C.1998, c. 25) creates several boards that cover the remaining part of the territory. The water boards provide the review process for new development.

The review boards include the following:

- Gwich'in Land and Water Board
- Sahtu Land and Water Board
- Wek'eezhii Land and Water Board
- Mackenzie Valley Land and Water Board

These boards review and authorize permits for industrial land and water use. All boards and screening committees refer to the land settlement agreements.

Yukon

Assessments in the Yukon are regulated under the Yukon Environmental and Socio-economic Assessment Act S.C. 2003, c. 7 (YESAA). The YESAA is administered by the Yukon Environmental and Socio-economic Assessment Board (YESAB), which provides guidance on process, the recommendations on the assessment to the decision makers and a public database on projects that are being assessed (YESAB, n.d.). The board is resident in the Yukon, but the enabling act is a federal act.

The act's regulations provides a list of projects that are mandatory for an assessment, those that are excepted and those that need further guidance on whether a project needs an assessment (YESAB, n.d.).

The current YESAA does not explicitly include climate change or greenhouse gases in the wording.

An interesting project the YESAB is currently working on is the "Evaluation of the Effects of Industrial Activities on the Personal Safety of Indigenous and Non-Indigenous Women and Girls and LGBTQ2S+ Persons in Yukon" (YESAB, 2021). This project sounds similar to the requirement of gender plus assessment under the federal Impact Assessment Act.

Section Conclusion

Whew, there is a lot of regulation on environmental assessment! They each have slightly different takes on environmental assessment. Some jurisdictions have dedicated acts, some just a regulation authorized by a variety of environmental acts. Most jurisdictions have historical roots of at least 20 years, some much older. Some have been substantially updated, others have had only

minor changes. In common, they all require transparency, in that there are public databases to look up the details of various projects.

Some assessment processes have been updated and consider climate change in their regulations. Canada, Quebec and British Columbia are the most visibly aligned on the topic. But the majority of jurisdictions do not mention climate change in their legislation. Most jurisdictions have guides to their processes, and some of the guides do tackle climate change.

In reviewing jurisdictions across Canada there is such diversity of approaches. While all aspire to protecting the environment and natural resources, the differences are confusing. With environmental science rapidly evolving, and societal priorities changing, it would seem overall we could do better.

Learning Questions

1. Using the public databases, find a project from a jurisdiction and consider:
 - Where is it in the process? Is it approved?
 - If approved, can you find the proponents' report as well as the approvers' report?
 - What was the time span between the first entry for the project and final approval if received?

References

We have diverted from the strictly alphabetical reference list as there is similarity in names of documents and can be quite confusing to find the reference. So instead we have grouped them

by jurisdiction in a somewhat random order, except that we put Canada at the federal level on the top of the list.

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PART VIII

CONCLUSION

27. Environmental Policy

Policy

Policy is an interesting thing. There are whole schools of thought about policy. Policy is like a direction but we should always ask “is there the will to go in that direction?”. For a simple example; a restaurant may have the familiar policy “no shoes, no shirt, no service”. This is not a law, but their policy. The only consequence for not wearing a shirt is that you won’t be served.

Policy’s are easily reversed or double reversed. Take an Alberta example, there was a policy dating from the 1970s (Livingston Landowners Group, n.d.) to be no coal mining in the southern Rockies part of Alberta. Quietly the policy was reversed in 2021, and then after much controversy and discussion the reverse was itself reversed.

Policy is probably more than aspirational, there is usually some intent to go in the direction suggested by the policy. Sometimes policy does become law, then there can be consequences. Many countries have a net zero by 2050 policy. Some countries, like the United Kingdom, have created law to establish the net zero goal as having consequences if not met.

From a compliance perspective, you should follow policy, but you must follow a law.

Strategy

You may also hear about strategies. This is more of the road map to get to the goal, whether it is a policy or a legal goal. Strategies can have many elements to them including the use of regulations.

So a climate change strategy may have a variety of elements. In the United Kingdom they have a climate change strategy including one that focuses on the international markets. Their international markets strategy includes five broad areas (UK Export Finance, 2021):

- Clean growth and climate adaptation
- Reducing greenhouse gas emissions
- Understanding and mitigating climate financial risks
- Transparency and disclosure
- International leadership

It is always a good idea to have a strategy to go with a policy.

Framework

A framework, is well, mostly like a strategy. Perhaps it is just another term for a plan? An example is Canada's Pan-Canadian Framework on Clean Growth and Climate Change (Canada, 2022). This is authored nominally by the CCME, and will have had extensive direct input from the provinces and federal governments. But is a framework legal binding. Is the Pan-Canadian Framework legal binding? To the later, the answer is no. But elements of it might be as they are adapted into new or revised legislation.

However, with a word like framework, you need to ensure the context. Another framework example is the United Nations Framework Convention on Climate Change. This framework convention is much closer to a treaty than a strategy. There are consequences for not following the convention.

Standard

A standard is different from a policy as standards can be very technical. Sometimes standards can become so influential or seem so logical, that we think it is a law. It is important to note that like a policy, standards don't have regulatory weight unless referenced in a regulation, rule or act.

This relationship to law is very similar to CSA standards that are available for legislators to incorporate in laws or regulations. An example of a standard is the Canadian Ambient Air Quality Standards (CAAQS). These are Canada's air quality standards set by the CCME and includes a standard for ground level ozone, SO₂, NO₂ and PM 2.5. The standards are agreed by the federal and provincial governments, but do not hold the weight of law unless a law references them.

Guidelines

A guideline is, well, maybe it sounds like a standard. It even sounds like it might be a bit voluntary. The AER when it was called the EUB had a set of regulations called guidelines. They were legal enforced. Nothing voluntary about it. They later changed the name to Directives.

But other environmental guidelines include the Guidelines for Canadian Drinking Water Quality. This is a guideline for Canada's drinking water guideline. It is not a regulation and does not apply to all Canadians. (Canada, n.d.). It was developed by Health Canada, a federal department, in consultation with the provinces and territories. It is only law if a province or territory enacts enabling legislation for using the criteria. Water quality for Canadians will depend on where you live. Clearly the guidelines for Canadian drinking water are not a regulation.

Canada and Australia are the only two Organisation for Economic Co-operation and Development (OECD) member countries that do not have national legislation mandating water quality (Dunn et al., 2014).

Section Conclusion

The point of this brief section is that there are many things that sound like a regulation, but are not. They all have importance and may actually be referenced in legislation. So it is important to be aware of their context. Is policy important? Yes. Is it the law? No.

Learning Questions

1. Consider the difficulties to make each of these a Canadian regulation?
2. Is it reasonable to have different standards across the country?

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28. Conclusion

Without doubt, change is one of the biggest factors in the environmental field. Possibly the only thing we can reliably predicted is that things will change.

Today environmental science has advanced rapidly, both in technology and comprehension. The public has become more engaged in environmental issues. Understanding and expectations are higher. And with climate change, the threats are global in nature. Environmental regulations are influenced by international treaties and requirements.

It follows that environmental regulations have been changing and will continue to change. Few regulations are static.

The challenge for any environmental work, with out limitations, is to stay current. It requires continuous education.

Presented in this eBook are some fundamentals of Canadian environmental regulation. They are current as of 2022, but the specifics will become obsolete with time. So a reader is recommended to understand the basics. Canadian law can be complicated, no one around in the mid 1800s (well those writing laws anyway) really understood what environment was and never incorporated it into the constitutional framework. Canada, today, has a mixed bag of who is responsible for what. Often the supreme court having to sort things out.

We have international agreements, federal laws and provincial laws. Each has their jurisdiction and despite some populist notions each has their place under the constitution and must be complied with.

Climate change will prove to challenging to work through our regulatory system. Who is responsible for what. When the hard decisions have to made there will be disagreements and the courts will be solving our challenges again.

For now understanding the fundamentals will stand environmental scientists in Canada good stead.

Terms and Abbreviations

AER	Alberta Energy Regulator
BC	British Columbia
CCME	Canadian Council of Ministers of the Environment
CER	Canadian Energy Regulator
CSA	Canadian Standards Association
EV	Electrical vehicle – fully battery operated
EU	European Union. Depending on the date, this may include the United Kingdom
EUB	Energy and Utilities Board in context of Alberta
FAO	Food and Agricultural Organization of the United Nations
IAA	Impact Assessment Act said in context of Canada
ISR	Inuvialuit Settlement Region
ODP	Ozone Depleting Potential
ODS	Ozone Depleting Substances
OECD	Organization for Economic Cooperation and Development
OHS	Occupational health and safety. May also be listed as OH&S
GOA	Government of Alberta
GOC	Government of Canada
GHG	Greenhouse Gases
NEB	National Energy Board
NDC	Nationally Determined Contributions
NWT	Northwest Territories
NOx	Oxides of nitrogen
NPRI	National Pollutant Release Inventory
POP	Persistent Organic Pollutants
PSL	Priority Substances List
SO2	Sulphur dioxide
SOx	Oxides of sulphur
TRI	Toxic Release inventory said in context of the USA

UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNECE	United Nations European Commission on Environment
UNEP	United Nations Environment Programme
UK	United Kingdom
USA	United States of America
VOC	Volatile Organic Compounds
WHO	World Health Organization