



# Clean Energy Production in B.C.

## An Inter-Agency Guidebook for Project Development

APRIL 2016



BRITISH  
COLUMBIA

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## Document Change Control

Version	Date	Brief Description of Change
Final	2008	<i>Clean Energy Guidebook</i> produced
Final	2010	Minor update to <i>Clean Energy Guidebook</i>
Final	2011	Update to <i>Clean Energy Guidebook</i>
Final	2014	Update to <i>Clean Energy Guidebook</i>
Final	2016	Minor update to <i>Clean Energy Guidebook</i>

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## An Inter-Agency Guidebook for Project Development

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## Contents

<b>Chapter 1: Using the Guidebook</b>	<b>1</b>
<b>Chapter 2: Clean Energy in B.C.</b>	<b>3</b>
Introduction to Clean Energy in B.C.	3
Types of Clean Energy Production	3
Clean Energy project proponents fall into two categories:	4
<b>Chapter 3: Coordinated Project Reviews</b>	<b>5</b>
Provincial One Process (1P) Initiative	5
Relationship to Other Processes	5
Concurrent Permitting	6
Coordination of Environmental Assessment & One Process	7
<b>Chapter 4: Summary of Roles and Responsibilities - Key Players for Clean Energy Projects in B.C.</b>	<b>9</b>
Summary of Provincial Stakeholders	9
Summary of Federal Agencies	16
Summary of Other Stakeholders	19
<b>Chapter 5: Stages in Successful Project Development</b>	<b>21</b>
Project Authorization and Review Process Overview	22
Stage 1: Application Preparation	23
Stage 2: Application Submission	24
Stage 3: Investigation and Monitoring	25
Stage 4: Development Plan Preparation	26
Stage 5: Development Plan Submission	27
Stage 6: Development Plan Review	29
Stage 7: Project Authorizations	30
Stage 8: Construction and Commissioning	31
Stage 9: Operations and Monitoring	32
<b>Chapter 6: Waterpower Projects</b>	<b>35</b>
How to Use This Chapter	36

Water Licensing .....	36
Special Requirements for Waterpower Projects .....	38
Working with Federal Agencies .....	39
Waterpower Common Authorizations - Quick View: .....	43
Waterpower Common Authorizations – Details: .....	44
<b>Chapter 7: Windpower Projects .....</b>	<b>57</b>
How to Use This Chapter .....	57
Special Considerations for Windpower Projects .....	57
Working with Federal Agencies .....	58
Windpower Common Authorizations - Quick View: .....	61
<b>Chapter 8: Ocean Energy Projects .....</b>	<b>73</b>
How to Use This Chapter .....	73
Special Considerations for Ocean Energy Projects .....	74
Working with Federal Agencies .....	74
Ocean Energy Common Authorizations - Quick View: .....	76
Ocean Energy Common Authorizations - Details: .....	77
<b>Chapter 9: Other Types of Clean Energy Projects .....</b>	<b>86</b>
Potential Sources of Biomass .....	87
Consideration of Project Planning for Biomass Energy Projects .....	89
<b>Chapter 10: Understanding Consultation .....</b>	<b>91</b>
Consultation with Stakeholders .....	91
Consultation with First Nations .....	92
<b>Chapter 11: Connecting to B.C.'s Power Grid and Selling Electricity .....</b>	<b>98</b>
<b>Appendix A .....</b>	<b>104</b>

### List of Acronyms used in this Guidebook

1P	One process	HADD	Harmful alteration, disruption or destruction of fish habitat
AIA	Archaeological impact assessment	IE	Independent engineer
AIR	Application information requirements	IEM	Independent Environmental Monitor
B.C.	British Columbia	IFR	In-stream flow requirements
BCEAA	<i>British Columbia Environmental Assessment Act</i>	IL	Investigative Licence
BCTS	BC Timber Sales	IRP	Integrated resource plan
BCUC	British Columbia Utilities Commission	LCC	Leave to Commence Construction
C&E	Compliance and enforcement	LCO	Leave to Commence Operations
CEA	Canadian Environmental Assessment	LoO	Licence of Occupation
CEAA	<i>Canadian Environmental Assessment Act</i>	MEM	Ministry of Energy and Mines
CEAP	Competitive electricity acquisition process	MoE	Ministry of Environment
CEBC	Clean Energy BC	MOTI	Ministry of Transportation and Infrastructure
CEI	Clean Energy Initiatives	MPB	Mountain Pine Beetle
CEP	Clean energy project	MPO	Major Projects Office
CFT	Calls for Tenders	MW	Megawatt
COD	Commercial operation date	NPA	<i>Navigation Protection Act</i>
DFO	Fisheries and Oceans Canada	OATT	Open Access Transmission Tariff
DP	Development Plan	OEMP	Operational environmental management plan
DPIR	Development Plan Information Requirements	OLTC	Occupant Licence to Cut
DSR	British Columbia Dam Safety Regulation	OPPR	Operating parameters and procedures report
EA	Environmental assessment	PCL	Permit over Crown Land
EAC	Environmental assessment certificate	RCEPT	Regional clean energy project team
EAO	Environmental Assessment Office	RFP	Requests for Proposals
EPA	Electricity purchase agreement	ROW	Right-of-Way
EPD	Environmental Protection Division	RSD	Resource Stewardship Division
EPP	Environmental protection plan	RUP	Road Use Permit
FFLTC	Fibre Forestry Licence to Cut	SDM	Statutory decision maker
FLNRO	Ministry of Forests, Lands, and Natural Resource Operations	SGIP	Standard Generator Interconnection Procedure
FN	First Nations	SUP	Special Use Permit
FSLTC	Fibre Supply Licence to Cut	VEC	Valued ecosystem component
FSR	Forest service road	WL	Water Licence
GALOO	General Area Licence of Occupation	WSD	Water Stewardship Division
GWh	Gigawatt hours		



# Chapter 1: Using the Guidebook


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The intent of the Guidebook is to provide proponents with enough information about the clean energy industry in the Province of B.C., to assist them in their project planning, and to help them progress their proposed projects from the initial application stage through to development and operations. The Guidebook includes information that applies to all clean energy projects (CEPs), as well as detailed information for the individual program areas, such as waterpower, windpower, and ocean energy. The following topics are covered:

- Clean energy policy and legislation;
- The provincial One-Process (1P) model, and the coordinated review and consultation for major projects;
- Roles and responsibilities for the various agencies involved in CEPs, including First Nations;
- How to take a CEP from the investigative phase through to development and operations;
- Detailed chapters on waterpower, windpower, ocean energy, and other types of CEPs;
- Consultation with communities and First Nations; and
- Information on BC Hydro and selling electricity.

Throughout the Guidebook there are direct links provided to policies, legislation, application forms, and best management practices. In addition, contact information is provided for the various FrontCounter BC offices around the province, so proponents can discuss their projects directly with provincial staff or be directed to other agencies as needed.

A link to the Development Plan Information Requirements (DPIR) is included in Appendix A at the back of the Guidebook. The DPIR is a consistent set of information requirements that must be addressed by the proponent in the project Development Plan, which is the main document used by Statutory Decision Makers to determine if a project will be authorized.



Average annual electricity consumption per BC household is 11,000 kilowatt hours or 11 megawatt hours or .01 gigawatt hours. The 13 clean energy projects currently under construction will provide enough electricity for approximately 214,091 homes.



## Chapter 2: Clean Energy in B.C.

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### Introduction to Clean Energy in B.C.

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To deliver a reliable supply of electricity, a balance is required between dependable capacity resources, such as large hydro storage projects on the Peace and Columbia River systems, and intermittent renewable resources. Due to B.C.'s climate and geography, the Province's clean and renewable energy potential is diverse, vast and enviable. Not only can power projects use water and wind to produce energy, they can also use biomass, waste wood, solar, tidal, wave, geothermal and other natural resources. Clean Energy projects have the potential to generate energy that meets and balances economic, environmental and social concerns. These projects contribute to the provincial energy objective that 93 percent of the electricity generated through BC Hydro be from clean or renewable resources.

On June 3, 2010, the [Clean Energy Act \(CEA\)](#), received Royal Assent in the B.C. Legislature. The Province of British Columbia now has a dedicated piece of renewable energy legislation. The CEA is a progressive law and the product of the government's long standing commitment to clean energy and reducing greenhouse gases. In essence, the CEA builds on the government's two [Energy Plans](#) (from 2002 and 2007) and its 2008 [Climate Action Plan](#). The CEA lays the foundation for British Columbia to become a leading North American supplier of low carbon energy and technologies and reliable, competitively priced power.

The *British Columbia Utilities Commission Act* encourages public utilities to use innovative energy technologies that facilitate electricity self-sufficiency and that support energy conservation or efficiency or the use of clean or renewable sources of energy. Further to that, some of the energy objectives in the CEA include: achieving self-sufficiency; a conservation target for BC Hydro of 66 per cent by 2020 (up from 50 per cent); ensuring that at least 93 per cent of the electricity generated through BC Hydro is from clean or renewable resources (up from 90 per cent); reducing greenhouse gas emissions consistently with the targets established and encouraging economic development and job creation and retention.

The CEA requires BC Hydro to submit an Integrated Resource Plan (IRP) to the B.C. Government for review and approval every five years. The IRP relays the actions that BC Hydro proposes to take over the next 10 years to ensure British Columbians continue to receive low-cost, reliable electricity over the long term. The latest IRP, submitted on November 26, 2013, includes: the current status of electricity supply and demand in British Columbia, anticipated future load demands, BC Hydro's approach to addressing any surplus or deficit in supply, how BC Hydro intends to implement the provincial energy objectives; and the results of public and First Nations consultations on the IRP.

### Types of Clean Energy Production

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Clean Energy Power Producers are often established as investor or operator-owned business corporations. However, BC Hydro can also look to other independent suppliers of electricity, such as:

- ▶ municipal and regional governments
- ▶ Columbia Power Corporation
- ▶ First Nations communities
- ▶ private individuals

## Clean Energy project proponents fall into two categories:

- 1) Power producers which generate electricity to sell to a load serving utility or to a power marketer. Power producers need transmission lines and connections to transmission or distribution systems.
- 2) Self-generators which produce electricity primarily for their own industrial use. Self-generators such as mines and pulp mills, would require transmission interconnections if they are unable to meet all of their demand from their own supply, or if they wish to sell power that is surplus to their use.

Broadly speaking, the main types of generation from clean energy projects are:

**Water power** - Waterpower projects use streams, rivers and other water sources. Project components may include a powerhouse, penstock, intakes, dams, tunnels, channels, roads, substation and the transmission line. These and other land uses, such as quarries, construction and spoil areas, staging areas and communication sites, are necessary for the production of electricity at a site and the conveyance of the electricity to a place of use.

**Wind Power** - Wind power projects require wind turbines, towers, maintenance buildings, other plant facilities, roads, substation, transmission lines and buffer zones of surrounding Crown land.

**Tidal Energy** – is the term used to describe the energy generated from power found in ocean tidal currents. The tides are created by the gravitational forces of the sun and moon, and their movement in relation to the earth. Tidal streams are currents in the ocean water column, created as the water of the ocean rises and falls with the movement of the tides. Tidal currents are strongest where the water passage is constricted, such as narrows, channels, around islands and headlands and fjords.

**Ocean Energy** – is the term used for energy generated from harnessing the ocean, and includes wave energy, tidal currents, temperature gradients and salinity gradients.

**Biomass Power** - Biomass energy projects use the natural abundance of biomass resources, including sawmill residues, mountain pine beetle-killed timber, logging debris and agriculture and municipal wastes.

**Solar Energy Power** - Solar power is a renewable energy generated by converting energy from the sun into electricity and forms the basis for SolarBC's solar hot water program. This is typically pursued on a small scale for self supply.

**Geothermal Energy Power** - Geothermal energy projects use the natural heat of the earth. This generally involves drilling deep into the ground to access hot water or steam. Geothermal resources do not include water that is less than 80 degrees Centigrade nor does it include hydrocarbons.

## Chapter 3: Coordinated Project Reviews

### Provincial One Process (1P) Initiative

“One Process” (1P) is a provincial initiative to coordinate the authorizations and consultation process for project reviews and permitting. The 1P initiative’s objective is to align authorizations and processes across the natural resource sector into a single process for major land management decisions in B.C.

The One Process framework:

- Is a proactive and integrated approach where consistent and complete information requirements are provided to the proponents at the front end of the process;
- Focuses on the “project”. A project manager or project lead (referred to as ‘project lead’ throughout this guidebook) is assigned to the project to guide the review process, lead a multi-agency project review team, liaise between the proponent and agencies, and oversee the First Nations consultation;
- Includes coordinated consultation on the “project” rather than each individual application. The Province will designate one person to serve as one point of contact for project consultation;
- Includes all information requirements in one project Development Plan. The Development Plan undergoes a coordinated review through a multi-agency and First Nations project review team, led by the project manager;
- Results in a single decision information package for all Statutory Decision Makers; and
- Includes ‘bundling’ multiple construction applications as much as possible into one package, encompassing all the information requirements being applied for.

### Relationship to Other Processes

#### B.C.’s Environmental Assessment Process

The *British Columbia Environmental Assessment Act* (BCEAA) requires that certain major project proposals obtain an Environmental Assessment certificate before they can proceed.

The BCEAA applies to public and private sector projects whether located on public (Crown) land or private lands. Reviews are directed by the Environmental Assessment Office (EAO) a neutral agency created under the BCEAA. There are three ways a project may be subject to review under the BCEAA.

1) Where the size of a project meets or exceeds a threshold established in the Reviewable Projects Regulation, the project automatically becomes reviewable under the BCEAA. For power projects the thresholds are:

#### Power Plants

- A new facility with a rated nameplate capacity of 50 megawatts or more of electricity that is (1) a hydroelectric power plant, (2) a thermal electric power plant, or (3) another power plant.
- Modification of an existing facility that results in the facility having a rated nameplate capacity that has increased by more than 50 MW of electricity.

<sup>1</sup> The maximum amount of electric energy that a generator can produce under specific conditions, as rated by the manufacturer.

- Dismantling or abandonment of an existing dam facility associated with an existing hydroelectric power plant of any size, if the dam is or was permitted under the *Water Act* to impound 10 million cubic metres of water or more.

### **Electric Transmission Lines**

- A new electric transmission line of 500 kV or higher and 40 kilometres in length or greater on a new right of way.
- Modification, extension or replacement of a facility with a voltage of 500 kV or higher and 40 kilometres or longer; or addition of a transmission line within the right of way occupied by the existing facility.

2) Secondly, if a project is not captured by the Reviewable Projects Regulation, a proponent may apply to the executive director of the EAO to have the project designated as a reviewable project.

3) Finally, the Minister of Environment has the power to designate a project reviewable where the project is not captured by the Reviewable Projects Regulation but poses a risk of significant adverse effects and an Environmental Assessment is in the public interest.

If a project is reviewable, EAO then selects the appropriate review path under section 10 of the BCEAA. The review path most frequently selected by EAO requires that a project undergo an Environmental Assessment and receive an Environmental Assessment certificate before the proponent can obtain any other approvals or permits required to construct and operate the project. In exceptional cases, where a reviewable project presents little risk of significant adverse effects, the executive director may order that an environmental assessment and environmental assessment certificate are not required. In these cases the proponent must still obtain all other necessary permits and approvals.

Harmonization of Federal and Provincial Processes – A federal/provincial agreement on Environmental Assessment harmonization was approved by the former Minister of Sustainable Resource Management and the federal Minister of Environment in March 2004. This agreement has reduced the overlap and duplication of federal and provincial Environmental Assessment processes. Further to the goal of reducing duplication and overlap, more recent progress has been made on a number of [initiatives](#).

For more information about the provincial Environmental Assessment process, refer to the [EAO User Guide](#) and other information on the [EAO website](#).

## **Concurrent Permitting**

The BCEAA allows a proponent of a reviewable project to apply for concurrent review of one or more applications for approvals under other enactments (e.g. *Water Act*). The application and review process is subject to the BCEAA Concurrent Approval Regulation. Under the Regulation, the proponent can apply for authorizations to include in a concurrent review and then the EAO must decide whether or not to accept the application.

A proponent's work plan and the timing of information collection may be a significant consideration in deciding whether to apply for concurrent approval. The early engagement



and streamlining offered by the coordinated authorizations process may be seen as an appropriate alternative to the regulated concurrent approval process.

If an application for concurrent approval is accepted, the EAO will decide on a project by project basis whether to lead the permit review process or whether to ask FLNRO to lead the process.

## Coordination of Environmental Assessment & One Process

Many of the issues and information requirements of the authorization process will also be examined at a strategic level during the environmental assessment process. However, the strategic level of information and assessment submitted to the environmental assessment process will usually not be at a sufficient level of detail to satisfy the information and assessment requirements for operational level authorizations.

Technically, applications for authorizations could be made while an environmental assessment is underway and outside of the regulated concurrent approval process. The only restriction is that authorizations decisions (other than investigative authorizations) cannot be made before an environmental assessment certificate is issued. Savings in time and money could be achieved by providing sufficient information to satisfy both the environmental assessment and permitting processes as long as a clear distinction is made between the two categories of information, and the ability to track them, is maintained. But in practice, it is usually best to complete the environmental assessment process before going too far into the authorizations process.

Although the actual application for authorizations will normally await the completion of the environmental assessment, early discussion about the coordinated authorizations approach can help streamline the eventual review of applications for authorizations.

### Federal Environmental Assessment Process

The *Canadian Environmental Assessment Act*, 2012 (CEAA 2012) and its regulations establish the legislative basis for the federal practice of environmental assessment in most regions of Canada.

The purpose of CEAA 2012 is to:

- **Protect components of the environment** that are within federal legislative authority from significant adverse environmental effects caused by a designated project;
- Ensure that designated projects are **considered and carried out in a careful and precautionary manner** in order to avoid significant adverse environmental effects when a federal authority is exercising a power or performing a duty or function required for the project to proceed;
- Promote cooperation and **coordination between federal and provincial governments**;
- Promote communication and cooperation with **Aboriginal peoples**;
- Ensure that opportunities are provided for **meaningful public participation**;
- Ensure that environmental assessments are **completed in a timely manner**;
- Ensure that proposed projects on federal lands or that are outside Canada and carried out or financially supported by a federal authority, are **considered in a careful and**

- **precautionary manner** in order to avoid significant adverse environmental effects;
- Encourage federal authorities to take actions in a manner that **promotes sustainable development** in order to achieve or maintain a healthy environment and a healthy economy; and
- Encourage further studies of the **cumulative effects of physical activities in a region** and the consideration of the study results in environmental assessments.

CEAA 2012 applies to projects described in the [Regulations Designating Physical Activities](#) and to projects designated by the Minister of the Environment.

When the Canadian Environmental Assessment Agency (the Agency) is the responsible authority for a designated project that is described in the [Regulations Designating Physical Activities](#), upon acceptance of a project description an analysis is undertaken by the Agency to decide if a federal environmental assessment is required. This step does not apply to designated projects regulated by the National Energy Board and the Canadian Nuclear Safety Commission for which conducting an environmental assessment is mandatory when such a project is designated.

A project may be designated by the Minister of the Environment if he or she is of the opinion that the carrying out of the project may cause adverse environmental effects, or that public concerns related to those effects warrant the designation. An environmental assessment under CEAA 2012 is required for each project designated by the Minister of the Environment.

The CEAA describes different types of environmental assessment that may be required:

- A screening may be carried out to document the environmental effects, determine the need to mitigate adverse effects, to modify the project or to recommend further assessment through mediation or a review panel.
- A comprehensive study will be required if the project is large enough to be captured under the CEAA Comprehensive Study List Regulation.
- Mediation can be used to address issues from an environmental assessment or it can be used in combination with an assessment by a review panel.
- The federal Minister of Environment may order a review panel of experts to review and assess a project with likely adverse environmental effects.

The Canadian Environmental Assessment Agency provides a leadership role in the review of major projects assessed as comprehensive studies and those referred to review panels. The Agency also coordinates the Government of Canada's aboriginal consultation activities during the environmental assessment process. More information about the Agency and the Canadian environmental assessment is available at: [www.ceaa.gc.ca/](http://www.ceaa.gc.ca/)

Clean energy projects triggering a screening, comprehensive study or panel review will typically trigger a requirement for a B.C. environmental assessment and then a harmonized process will be undertaken. If a project is non-reviewable under the BCEAA but requires an assessment under the CEAA, a proponent may voluntarily request to opt into the BCEAA process and request that the CEAA assessment be harmonized. More detailed information pertaining to provincial / federal relationships can be found here: [www.eao.gov.bc.ca/federal\\_relations.html](http://www.eao.gov.bc.ca/federal_relations.html)

## Chapter 4: Summary of Roles and Responsibilities - Key Players for Clean Energy Projects in B.C.

This chapter provides an overview of the roles and responsibilities of all the key stakeholders related to clean energy projects in B.C. The information below is organized by subject matter area and includes specifics relating to which entity holds responsibility in each case.

### ***Provincial agencies have a role in the following areas:***

- ▶ single window of service for authorization and permits for clean energy projects;
- ▶ single window of service for Natural Resource Sector Major Projects within the clean energy sector;
- ▶ environmental assessment;
- ▶ land authorizations and permits (Crown land tenure);
- ▶ water management and licensing;
- ▶ compliance and enforcement;
- ▶ forest, range, road authorizations and permits/tenures;
- ▶ archaeology assessment;
- ▶ environmental stewardship;
- ▶ road and highway permits; and
- ▶ energy policies.

### ***Federal agencies have a role in the following areas:***

- ▶ Federal environmental assessment
- ▶ Regulation of navigable waters
- ▶ Regulation of Air safety
- ▶ Funding of natural resource sector projects

### ***Other stakeholders have a role in the following areas:***

- ▶ Energy Purchase Agreements
- ▶ Industry Associations
- ▶ First Nations

## Summary of Provincial Stakeholders

### ***Single Window of Service for Authorization and Permits for Clean Energy Projects***

**FrontCounter BC** is the B.C. government's "single window service" for citizens and businesses seeking natural resource authorizations and permits for Crown resources. It provides services on behalf of provincial natural resource ministries and agencies, and works closely with the Major Projects Office in order to support project management of clean energy projects. FrontCounter BC staff can provide the following services for proponents of clean energy projects:

- ▶ Explain what's involved in getting the Provincial environmental, land and resource use approvals required to construct waterpower, wind, or other electricity generation projects in B.C.
- ▶ Help guide proponents through the application process by ensuring the required application forms are complete, taking payments for each application package, and then ensuring applications get to the right agencies for approval.



*Single window of service for natural resource sector major projects within the clean energy sector at FrontCounterBC.*

- ▶ Identify First Nations and other stakeholders with which proponents should consult.
- ▶ Monitor and track applications.
- ▶ Assist in the early identification of potential conflicts with overlapping tenures and other land use designations.

Because clean energy legislation, regulations, policies, and requirements are evolving, proponents are urged to contact FrontCounter BC to obtain up-to-date information about project requirements.

- FrontCounter BC's web address is: [www.frontcounterbc.gov.bc.ca](http://www.frontcounterbc.gov.bc.ca)
- Email is: [FrontCounterBC@gov.bc.ca](mailto:FrontCounterBC@gov.bc.ca)
- FrontCounter BC has 29 offices throughout B.C. To find the nearest FrontCounter BC office go to: [www.frontcounterbc.gov.bc.ca/locations/](http://www.frontcounterbc.gov.bc.ca/locations/)
- FrontCounter BC Call Centre 1-877-855-3222

### **Major Projects Office**

**Major Projects Office** is a single window service for Natural Resource Sector (NRS) major projects. It consists of a provincial oversight team in Victoria and eight regional teams responsible to lead and coordinate the authorization processes of NRS major projects. With the increase of activities on the land base, Major Projects Office provides a single team approach to manage multiple government interests and processes on new major project proposals for the NRS sector and partner agencies. It compiles information and tracks all major projects under its lead on its public website. Major Projects Office partners with FrontCounter BC to provide the single entry point or window by which NRS proponents can access information and authorization applications specific to their interests.

In 2008, the Clean Energy Initiatives (CEI) was established within the former Integrated Land Management Bureau. Its primary purpose was to enhance the effectiveness of ministries and agencies by coordinating the CEI portfolio province-wide in support of the B.C. Energy Plan (2007) greenhouse gas reduction goals and optimizing government resources. In 2012, the CEI became part of Major Projects Office within the Ministry of Forests, Lands and Natural Resource Operations.

With respect to CEPs, Major Projects Office's key business functions include: business development; stakeholder relations and engagement; data collection, monitoring and analysis, and reporting. In delivering on its purpose, the Major Projects Office will provide the following core services:

- Advise and work collaboratively with regional staff on policies, procedures, and issues related to CEP review and authorization;
- Continuously improve CEP authorization process and CEP portfolio administration;
- Maintain a productive working relationship with Stakeholders; and
- Guide provincial implementation 'One Process' model for CEPs.



Major Projects Office's web address is: [www.for.gov.bc.ca/major\\_projects/](http://www.for.gov.bc.ca/major_projects/)

Major Projects Office has offices throughout B.C. To find the nearest Major Projects Office go to: [www.for.gov.bc.ca/major\\_projects/contacts.htm](http://www.for.gov.bc.ca/major_projects/contacts.htm)

### **Environmental Assessment**

The **Environmental Assessment Office (EAO)** is a neutral agency that manages the review of proposed major projects in British Columbia, as required by the *Environmental Assessment Act*.

The environmental assessment process provides for the thorough, timely and integrated assessment of the potential environmental, economic, social, heritage and health effects that may occur during the lifecycle of these projects, and provides for meaningful participation by First Nations, proponents, the public, local governments, and federal and provincial agencies.

BC Environmental Assessment Office: [www.eao.gov.bc.ca/](http://www.eao.gov.bc.ca/)

The EAO has a policy document that provides guidelines for the selection of valued components. The guidelines present best practices for the selection of valued components and the assessment of potential effects. It has been prepared to inform the understanding and application of appropriate, standardized methods for conducting environmental assessments to meet the requirements of the B.C. *Environmental Assessment Act*.

Guideline for the Selection of Valued Components and Assessment of Potential Effects: [www.eao.gov.bc.ca/VC\\_Guidelines.html](http://www.eao.gov.bc.ca/VC_Guidelines.html)

### **Land Authorizations and Permits (Crown Land Tenure)**

The Province is responsible for issuing authorizations to use and occupy Crown land. Under the *Land Act*, the Province can issue approvals allowing proponents to investigate potential development sites, to construct roads and infrastructure such as buildings, transmission lines, and conduct commercial / industrial activities on Crown land.

- The Province is responsible for assessing the impact of clean energy projects on Crown lands.
- Proponents may work with staff to identify impacts and develop mitigation techniques or alternatives to limit or eliminate concerns including environmental and social impacts to the land, fish and wildlife and other stakeholders.
- Early discussion with staff is recommended to ensure concerns are identified, impacts are adequately assessed, and mitigation measures are developed during the early stages of the project development and approval process.
- Proponents may engage registered professional foresters, biologists, engineers and others specialists to assist with the evaluation of impacts and development of mitigation measures. Most, if not all issues, can and should be resolved before the Development Plan is submitted.
- *Land Act* tenures are issued by the eight regional offices located throughout B.C. These authorizations are required before the proponents may construct project works.
- After tenures are issued, staff may inspect proponents' work sites and operations to ensure proponents comply with stipulated terms and conditions. Proponents are responsible for understanding and meeting standards of practice expectations.

### ***Land Act Authorizations typically associated with Clean Energy Projects***

Issues and considerations may vary from project to project. The project lead can identify local Forests Lands and Natural Resource Operations staff that is familiar with issues associated with the area of the proposal. The proponent is encouraged to initiate these discussions as early as possible in the pre-application stage. Clean energy proponents required various *Land Act* tenures depending on the different types of land uses associated with the various stages of the project.

[Land Tenures Branch](#) – General information to assist you with your application:

### ***Other Natural Resource Sector Authorizations***

The Ministry of Forests, Lands and Natural Resource Operations is responsible for managing Crown forests and range lands. Legislation under its jurisdiction includes the *Forest Act*, *Range Act*, *Forest Practices Code of British Columbia Act* and *Forest and Range Practices Act*. Under these acts, the Province can issue approvals allowing proponents to cut, damage, destroy, and remove Crown timber. These acts also enable the issuance of permits that allow proponents to use roads and construct project works and install infrastructure.

- The Province is responsible for assessing the impact of independent power projects on forest and range lands.
- Proponents may work with staff to identify impacts and develop mitigation techniques or alternatives to limit or eliminate concerns including fire protection requirements.
- Early discussions with staff are recommended to ensure concerns are identified, impacts are adequately assessed, and mitigation measures are developed during the formative stages of the project development and approval process. Proponents are responsible for finding out who owns or has rights to use roads in the area they plan to build their project.
- Proponents may engage registered professional foresters, biologists, engineers and others specialists to assist with the evaluation of impacts and development of mitigation measures. Most, if not all issues, can and should be resolved before the Development Plan is submitted.
- Permits and licences are issued by FLNRO regional and district offices located throughout B.C. Typically, district offices issue or approve these authorizations after proponents have obtained required land and water licences and permission to construct project works, or as otherwise directed by the project lead responsible for the bundling of all potential authorizations required for the project.
- After a forest, range or road tenure is issued, staff inspect proponent's work sites and operations. All issued permits and licences are monitored to ensure proponents comply with stipulated terms and conditions. Proponents are responsible for understanding and meeting standards of practice expectations.

Further information on district contact numbers, forest legislation, applicable tenures/licences and current events can be obtained by accessing the website at: [www.for.gov.bc.ca/mof/regdis.htm](http://www.for.gov.bc.ca/mof/regdis.htm) Further, it is recommended the proponent review the following document: "Clean Energy Projects – Requirements for Planning, Design and Construction to Protect Forest Roads or Timber Tenures": [https://www.for.gov.bc.ca/hth/engineering/documents/publications\\_guidebooks/publications\\_reports/CEP-Planning-Design-Construction-Requirements.pdf](https://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/CEP-Planning-Design-Construction-Requirements.pdf)

### **Water Management and Licensing**

All freshwater in British Columbia is owned by the Crown on behalf of the residents of the Province. **Water Stewardship Division (WSD)** has the primary responsibility for management of the freshwater resources. The WSD applies a stewardship approach based on the principles of integrated water resource management. Authority to divert and use water is obtained by a licence or approval in accordance with the statutory requirements of the *Water Act* and the *Water Protection Act*.

With respect to CEPs, water licences are issued for purposes including power production, water storage, and industrial or commercial use.

The WSD structure consists of three branches as described below:

**Regional Operations** – Delivers WSD programs and services to clients throughout the province.

- Issues water licensing and approvals for short term use or changes in or about a stream
- Works with First Nations partners
- Source water protection
- Groundwater monitoring and protection
- Regulates water quantity
- Implements the dam and dike safety programs
- Conducts flood hazard investigations

**Management and Strategies** – Administers statutory responsibility for water rights and public safety.

- Oversee administration of legislation associated with floodplains and dikes
- Regulate private water utilities
- Statutory and public safety functions related to floods and droughts
- Lead the WSD dam safety program
- Coordinate participation in First Nations' treaty negotiations

**Science and Information** – Provide information, research and knowledge regarding B.C.'s water resources.

- Collect water-related data for government
- Provide scientific analysis and guidance in support of planning and stewardship
- Provide forecasts and models to support risk management and decision making
- Collaborate in water science research
- Conduct surveys

### [Water Management & Stewardship](#)

### **Compliance and Enforcement**

Compliance and Enforcement (C&E) is the monitoring of statutory obligations or standards and practices of any person or persons granted some right or authorization by government. It includes a range of functions and activities which define the C&E framework including setting requirements, review of standards, education, promotion, inspection, investigation and determination. The framework is an important part of government's obligation and responsibility to protect the environment, protect human health and safety, prevent the loss of Crown revenue and provide a fair and equitable environment for economic development and activity. C&E is based on the Rule of Law and works across criminal, administrative and contract law.

There are various programs across the Natural Resource Sector (NRS). The two largest are the C&E Branch within the Ministry of Forests, Lands and Natural Resource Operations (FLNRO) and the Conservation Officer Service (COS) within the Ministry of Environment (MoE). Others include Provincial Parks, Energy and Mines, Oil & Gas Commission (OGC), Environmental Protection (EP), Dam & Dike Safety, Agriculture and the Environmental Assessment Office (EAO). There is also a number of other program staff in NRS agencies that play a part in C&E by promoting compliance through education and liaison with clients during the management of authorizations.

The bulk of C&E staffing resources lay within the C&E Branch and the COS. Other staff resources of note are the OGC, Provincial Parks and Energy and Mines. Staff are located across the province in various field offices, resource district offices and regional offices.

The emergence of Clean Energy projects (CEPs) across the province has introduced a new scope of C&E functions and activities. CEPs are a priority inspection for C&E and include both threshold projects under the EAO and non-threshold projects and as the variety and scope of CEPs develop so does the experience and knowledge of C&E staff. Currently C&E staff interacts directly on a local level with project officers, resource district and regional program staff regarding CEPs. These relationships will continue to develop between CEPs and C&E.

### **Environmental Stewardship**

The **Resource Stewardship Division (RSD)** within the Ministry of Forests, Lands and Natural Resource Operations is responsible for strategic oversight to the development of resource stewardship policy and practices. Primary responsibilities include:

- set policy and standards for forest practices
- set policy and standards for water sustainability,
- water resource management

RSD and other agencies serve in an advisory role to Water Stewardship Division and Crown Lands Allocation. They help interpret guidelines and review those sections of proponent-submitted documents pertinent to the respective areas of interest and expertise.

#### Resource Stewardship Division

The **Environmental Protection Division (EPD)** within the Ministry of Environment is responsible for the *Environmental Management Act*. The EPD works to prevent pollution and promote and restore environmental quality. In addition to looking after air, land and water quality and the harmful effects of discharges, EPD designs, develops and implements legislative and regulatory guidelines, standards and instruments. Working with stakeholders and partners, the division fulfills its environmental



protection role using innovative tools and an “adaptive management framework,” meaning it sets standards and guidelines, checks for their attainment through monitoring and compliance, and adjusts requirements and guidelines as needed. Discharge permits are required.

#### Environmental Protection Division

**Parks and Protected Areas Division** (BC Parks), within the Ministry of Environment, is responsible for the *Park Act*. B.C. Parks is responsible for the designation, management and conservation of a system of ecological reserves, provincial parks and recreation areas located throughout the province.

By legislation, a permit is required for many types of commercial use, land use/land occupancy, and research activities that take place in parks and protected areas designated under the *Park Act*, the *Environment and Land Use Act* or the *Protected Areas of British Columbia Act*.

Park Use Permits and Ecological Reserve Permits: [www.env.gov.bc.ca/bcparks/permits/](http://www.env.gov.bc.ca/bcparks/permits/)

#### **Road and Highway Permits**

**Ministry of Transportation and Infrastructure (MOTI)** is responsible for building, maintaining and operating the Province’s highway system and ensuring that it operates safely and efficiently and for the benefit of the general public. Under the *Transportation Act* or the *Industrial Roads Act*, MOTI grants approvals required to temporarily or permanently use, impact or connect to highways, secondary roads or public rights-of-way. No work, construction or activity is allowed before a valid permit has been obtained.

The Ministry has policies specific to power lines, which govern the granting of permits for them. MOTI grants utilities permission to use highways and rights-of-way provided adequate controls are in place and proposed uses do not interfere with the public’s use of existing highways. MOTI’s prime responsibility is to ensure that public safety is not compromised. Proponents must ensure that existing highway facilities are not damaged or put at risk, other non-highway facilities are protected, and future highway development is not unduly restricted. Except where safety is concerned, the same policy, standards and procedures apply to all utilities whether they are owned by a public utility company, local government, or private individuals. Proponents use highway rights-of ways at their own risk. MOTI may issue permits allowing proponents to install equipment and facilities in highway right-of-ways where it is practical and safe to do so.

Proponents are only permitted to use highway right-of-way if they comply with policy and standards established by MOTI. Different districts may have different requirements for different projects. Proponents should contact local district offices for information and advice regarding their proposed projects. The Ministry’s Utilities Manual provides general information regarding MOTI permits, accommodation, coordination, design and location standards, installation and maintenance, relocation, etc. The manual is being updated to include information regarding power lines that exceed 60 kV phase to phase, so proponents should contact local MOTI district staff to obtain up-to date details.

Permit forms and contact information are available on the MOTI’s website at:

[www.th.gov.bc.ca/permits.htm](http://www.th.gov.bc.ca/permits.htm) or visit: [www.gov.bc.ca/tran/](http://www.gov.bc.ca/tran/).

### Energy Policies

The Ministry of Energy and Mines (MEM) is tasked with managing the responsible development of British Columbia's energy and mining sectors. The Ministry is responsible for administering all or parts of 39 statutes pertaining to the energy, mining, and housing sectors, and has policy responsibilities under the *Utilities Commission Act*. These statutes include: *Hydro and Power Authority Act*, the *Clean Energy Act* and the *BC Hydro Public Power Legacy and Heritage Contract Act*. It facilitates a climate for thriving, safe, environmentally responsible and competitive energy, mining and petroleum resource sectors. The MEM is responsible for four Crown Corporations:

1. British Columbia Hydro and Power Authority (BC Hydro);
2. Columbia Power Corporation;
3. Oil and Gas Commission; and
4. British Columbia Housing Management Commission (BC Housing).

The Ministry develops and implements British Columbia's policies with regard to electrical power generation and transmission. An overarching goal is to provide a secure and reliable supply of energy that contributes to economic growth and stability for British Columbians. The Ministry is responsible for the *Clean Energy Act*, which sets the foundation for a new future of electricity self-sufficiency, job creation, and reduced greenhouse gas emissions. It is responsible for initiatives to promote new energy technologies, energy conservation and alternative energy resources (i.e. biomass, biogas, geothermal, heat, hydro, solar, ocean, wind or any other prescribed alternative energy resource).

[The Electricity Group of the Electricity and Alternative Energy Division](#) provides advice on current and emerging electricity policy issues. The Group is divided into the Generation and Regulation Branch and the Transmission and Inter-jurisdictional Branch.

While the MEM is responsible for strategic electricity policy in the Province, the Ministry of Forests, Lands and Natural Resource Operations is responsible for operational policy for clean energy projects on Crown land. Crown land [operational policies for ocean energy, wind power and waterpower](#) are available.

## Summary of Federal Agencies

### Federal Environmental Protection and Regulation

**Fisheries and Oceans Canada's (DFO)** Pacific Region Habitat Management Program is responsible for protecting and conserving marine, intertidal and freshwater fish habitats in B.C. and Yukon. If you are planning "projects near water", please visit their website at: <http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>

Under the *Fisheries Act* no one may carry out any work or undertaking that will destroy fish or result in the harmful alteration, disruption or destruction (HADD) of fish habitat unless authorized by DFO.

It is important to note that in carrying out its responsibilities under the habitat protection provisions of the *Fisheries Act*, DFO must also ensure that the requirements of the *Species at Risk Act* (SARA) and the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) are also met.

Clean energy projects that have the potential to impact fish and fish habitat are often those that are proposed to occur directly within water, within 30 metres of water (which includes the riparian area), or those that may affect water quantity or quality (i.e. sediment deposition). For example:

- Construction and operation of intake weirs/dams and tailrace structures and any changes in water flow in the diversion reach or downstream of hydropower projects;
- Installation of equipment for tidal, wave power, or hydrokinetic generation; and
- Construction of access roads and transmission lines at watercourse crossings.

DFO has developed a process for the review of activities that are likely to pose a low risk to fish habitat. As part of this process, DFO provides upfront guidance on mitigation measures (e.g. Operational Statements, Guidelines and Planning Tools) to help proponents plan and design their activities to avoid harmful effects to fish and fish habitat. These documents that may pertain to your activities can be obtained at the Habitat Management Program's "projects near water" website: [www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html](http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html). When the advice in these documents can be followed it is not necessary for a proposal to undergo formal DFO review and approval.

As a general rule:

- Projects proposed upstream of fish-bearing waters that meet downstream flow requirements for fish will likely have reduced information and assessment requirements; and,
- The greater the risk of harming fish or fish habitat, the more involved the DFO regulatory review process will be. This means that if a proposal is likely to negatively affect fish or fish habitat, more information, time, and effort will be required to support the regulatory review and authorization process.

Authorization is considered only after all other options are exhausted. Proponents are responsible for developing appropriate compensation habitat for any authorized HADD as per the no net loss guiding principle under the DFO's habitat management policy.

Under the SARA, DFO protects aquatic species at risk, their residence and their critical habitat. Permits and licences are required under SARA.

### **Regulation of Navigable Waters**

Transport Canada (TC) is responsible for developing and administering policies, regulations and services for a transportation system in Canada that is recognized worldwide as safe and secure, efficient and environmentally responsible.

Clean energy projects have the potential to affect transportation systems in the air and on the water. For example, transportation systems can be affected with the construction and installation of project components where:

- equipment for tidal or wave power generation has the potential to affect navigable waters;
- intake weirs/dams and tailrace structures and any changes in water flow along diversion reaches for run-of-river hydro power generation have the potential to affect navigable waters; and
- towers for wind power generation have the potential to affect navigation in the air and on the water.

Other components associated with independent power projects, such as bridge crossings along access roads and transmission line towers and crossings also have the potential to affect navigation in the air and on the water.

Transport Canada's Navigation Protection Program is responsible for the administration and enforcement of the *Navigation Protection Act* (NPA) (came into force April 1, 2014). The Navigation Protection Program reviews clean energy project proposals to determine if they require approval under the NPA. Approval under the NPA is required for any works placed on, over, under, through or across navigable waters that is on the List of Scheduled Waters. The List of Scheduled Waters lists those navigable waters for which regulatory approval is required for works that risk a substantial interference with navigation. Determination of navigability is made by Transport Canada's Navigation Protection Program Officers only when an application has been received.

The requirement for an Approval under the NPA triggers the requirement for Transport Canada, as a responsible authority, to conduct an Environmental Assessment under the *Canadian Environmental Assessment Act*, 2012 (CEAA 2012).

More information is available from Transport Canada's Navigation Protection Program:

- Navigation Protection Program – Overview: [www.tc.gc.ca/eng/programs-621.html](http://www.tc.gc.ca/eng/programs-621.html)
- *Navigation Protection Act*: [www.tc.gc.ca/eng/programs-632.html](http://www.tc.gc.ca/eng/programs-632.html)

### **Regulation of Air Safety**

Transport Canada's Aerodromes and Air Navigation Branch is responsible for the regulatory program for aerodromes and air navigation services in Canada. Among other responsibilities, this branch reviews proposed projects to determine whether lighting or marking of structures such as antennas, towers, cable crossings, and buildings is required to meet standards for air safety. In some cases, lighting and/or marking of structures required by Transport Canada for air safety purposes can cause potentially adverse effects on other valued ecosystem components such as migratory birds. In such cases, the lighting/marketing requirements and measures required to mitigate these effects will be discussed by the proponent, Transport Canada and the federal department that has raised the concern so a resolution can be reached.

Transport Canada: [www.tc.gc.ca](http://www.tc.gc.ca)

Transport Canada's Environmental Assessment: [www.tc.gc.ca/eng/programs/environmental-assessment-ea-150.htm](http://www.tc.gc.ca/eng/programs/environmental-assessment-ea-150.htm)

### **First Nations**



First Nations typically have a critical role in the review and success of any CEP proposal. The Province has made a clear commitment to meaningfully involve First Nations in the review of all CEP proposals. Engaging with First Nations also provides an opportunity to build a relationship with the community. These relationships are important factors in any project proposal and are critical to the effective exchange of information. Good working relationships can complement or expedite Environmental Assessment reviews and Crown consultation requirements. In addition, First Nation communities may know of sites that are culturally important and may require special historic or archaeological protection—information which could be invaluable in the early stages of identifying the proposed project site.

In 1982 existing Aboriginal and treaty rights were recognized and affirmed in Section 35(1) of the *Constitution Act*. The courts have clarified what Aboriginal rights and Aboriginal title mean, and how they are proved. The Supreme Court of Canada's decisions in the Haida and Taku River cases clarified that even before Aboriginal rights and/or title are proven through a Court process, the Province has a duty to consult with First Nations when it has real or constructive knowledge of the potential existence of an Aboriginal right or title and contemplates conduct that might adversely affect it. The more recent Supreme Court of Canada decision in the Tsilhqot'in case has added additional clarity regarding aboriginal title. In addition, although it is provincial authorities who are duty-bound to consult with First Nations groups, the proponent is often better placed to share information with the First Nation and to address particular First Nations' interests or concerns.

First Nations expressing an Aboriginal right and/or title have a reciprocal duty to identify their Aboriginal interests and concerns once they have had the opportunity to consider the information provided and must make a reasonable effort to inform the Crown about any impacts of the proposed activity on their Aboriginal interests. First Nation communities' concerns typically relate to potential impacts on claimed Aboriginal rights and title, including traditional practices and cultural resources, and environmental concerns: potential impacts on the land, air, water, forests, fish and wildlife.

Chapter 10 of this guidebook includes information on consultation with First Nations. For additional information, please visit [Consulting with First Nations](#).

## Summary of Other Stakeholders

### **Energy Purchase Agreements**

BC Hydro's primary business activities are the generation and distribution of electricity. For years the transmission of that electricity had been facilitated by the B.C. Transmission Corporation on behalf of BC Hydro and other power providers in B.C.

The new *Clean Energy Act* consolidated BC Hydro and BC Transmission Corporation, as of July 5, 2010, to provide a single entity that plans and delivers the clean energy required to meet British Columbia's growing demand for electricity while fostering job creation throughout the province and helping reduce greenhouse gas emissions.

B.C.'s new *Clean Energy Act* is designed to strengthen B.C.'s legislated goal of electricity self-sufficiency by 2016 with a new regulatory framework for long-term electricity planning,

commitments to clean and renewable electricity generation, streamlined approval processes, and new measures to promote electricity efficiency and conservation.

BC Hydro operates 30 hydroelectric facilities and three natural gas-fueled thermal power plants. About 80% of the province's electricity is produced by major hydroelectric generating stations on the Columbia and Peace rivers. BC Hydro generates between 43,000 and 54,000 gigawatt hours (GWh) of electricity annually, depending on prevailing water levels.

BC Hydro reports to the B.C. Ministry of Energy and Mines, whose energy policies are laid out in the 2007 B.C. Energy Plan. Several elements and targets included in that plan were updated in the *Clean Energy Act* of 2010. BC Hydro's vision is "Powering B.C. with clean, reliable electricity for Generations". This vision provides the context for its business decisions.

A strategy for acquisition of clean energy is outlined in Chapter 8 of BC Hydro's Integrated Resource Plan, November 2013:

[https://www.bchydro.com/energy-in-bc/meeting\\_demand\\_growth/irp.html?WT.mc\\_id=rd\\_irp](https://www.bchydro.com/energy-in-bc/meeting_demand_growth/irp.html?WT.mc_id=rd_irp)

### **Industry Associations**

Clean Energy BC represents power suppliers, power retailers and their supporting industries. The mandate of the Clean Energy BC is to develop a viable clean energy industry in British Columbia that serves the public interest by providing cost-effective electricity through the efficient and environmentally responsible development of the Province's energy resources. CEBC's vision is to promote an open and fair market for power suppliers in British Columbia's competitive electricity industry by:

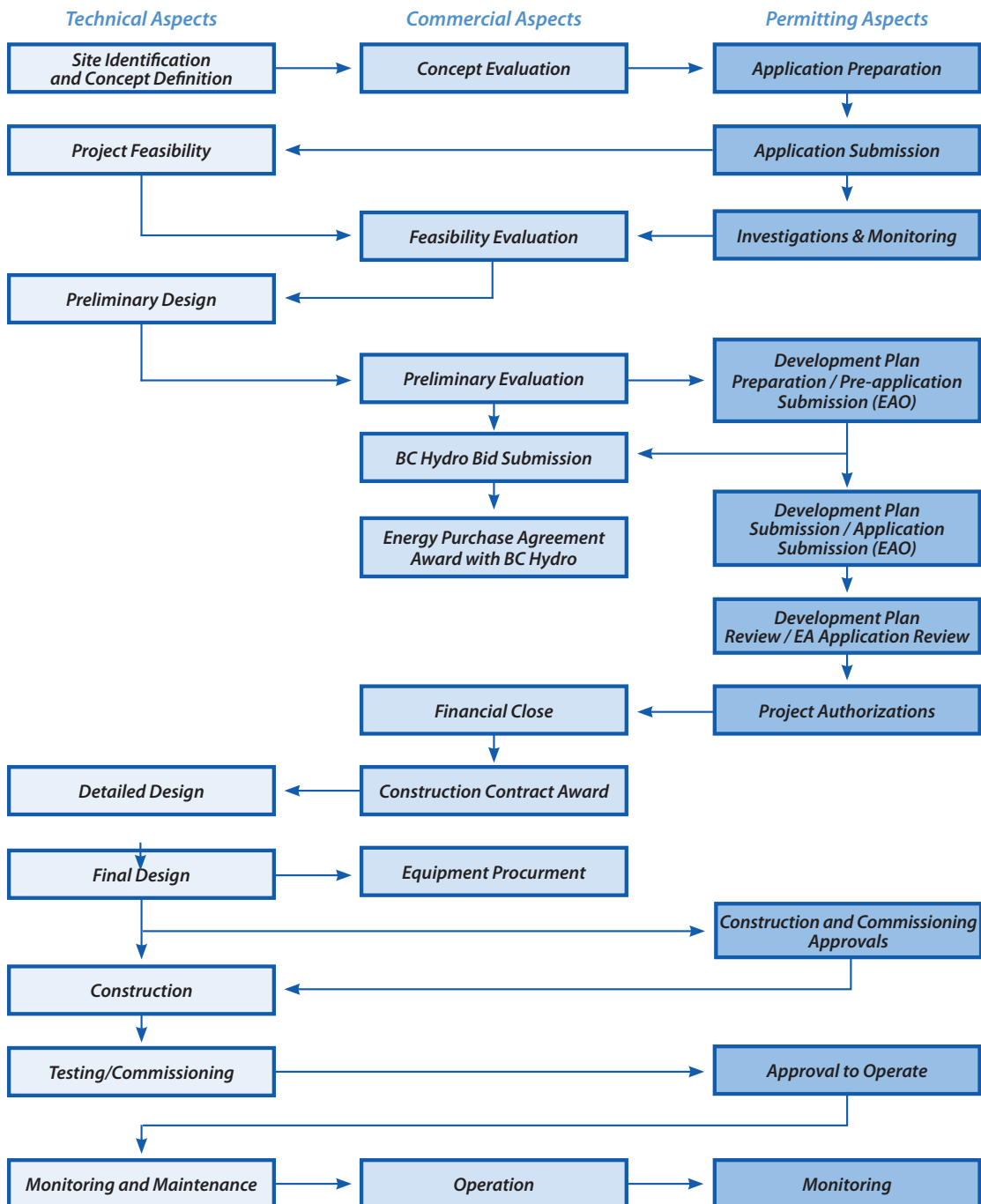
- Championing policy recommendations that are conducive to a viable market with many buyers and sellers
- Informing British Columbians of the benefits of a competitive electricity industry

CEBC has been the voice of proponents working with government and the public to develop the industry since 1992. CEBC provides guidance and advice to members such as the guidelines below explaining the steps involved in successfully developing an independent power production business.

Clean Energy BC: [www.cleanenergybc.org](http://www.cleanenergybc.org)

## Chapter 5: Stages in Successful Project Development

Proponents of clean energy projects must meet technical, commercial, and permitting requirements to develop a project. The technical aspects include all engineering and scientific studies for the project. Commercial aspects include all evaluations to demonstrate the viability of the project to potential investors as well as bid preparation and commercial contracts for project construction. Permitting requirements must be achieved throughout the development of the project to move forward. The figure below shows the technical, commercial, and permitting aspects of project development in three vertical columns.



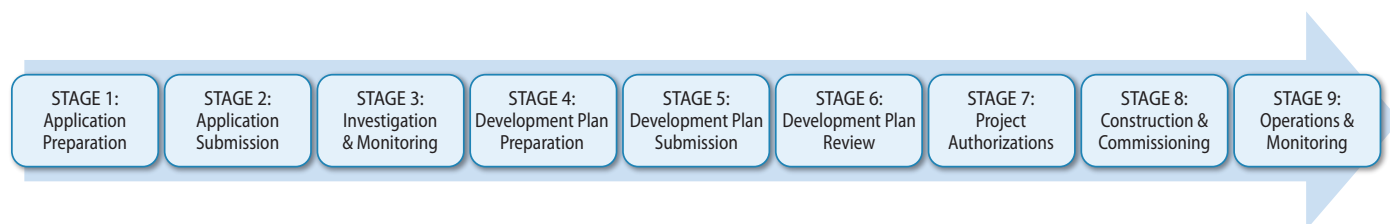
While all three aspects – technical, commercial, and permitting – are essential to develop a successful project, this chapter will focus on the permitting and authorization aspects of the project as these are the steps that involve direct proponent-government interaction.

## Project Authorization and Review Process Overview

Although each clean energy project is unique, the process involved in obtaining all the approvals required is similar for all projects. The following stages in project development are intended to provide proponents with an overview of how the application process proceeds and what specific requirements are expected at each stage. These stages have been developed in a way that acknowledges the uncertainty both clean energy project proponents and regulatory agencies must manage. Because of the uncertainty associated with clean energy project development – including technical and financial concerns – proponents often opt to invest relatively small amounts of time and money during the preliminary conceptual phase of a project's development process.

From a business point of view, it makes sense to wait until early studies demonstrate the project is viable before investing the substantial funds required to gather all the data required by approving agencies. On the other hand, regulatory agencies need fairly detailed information to review applications. Statutory Decision Makers tasked with issuing approvals need to be able to determine whether proponents of a specific project will be able to fulfill all the obligations stipulated in all the applicable legislation. The uncertainty which characterizes the clean energy project approval process leads to a situation in which both proponents and regulatory agencies need to work together to identify issues during the formative stages of the project development process. They can then study and discuss how best to manage these issues as the project proposal makes its way through the approval process.

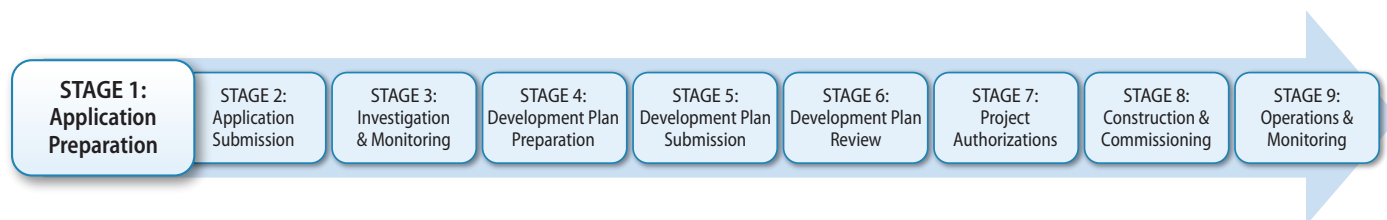
Stages outlined below are meant to serve as a guideline only. Specific stages and requirements can vary depending on the type of project being proposed, affected species and the type of impacts, and other project-specific details.<sup>2, 3.</sup>



<sup>2</sup>For projects that undergo an Environmental Assessment with the [B.C. Environmental Assessment Office](#) (EAO), stages 4 through 6 will be led by the EAO, and will follow the project review process.

<sup>3</sup>The [Canadian Environmental Assessment](#) process (if required) can occur between stages 2 through 5. However, proponents are encouraged to apply as early as possible.

## Stage 1: Application Preparation



Following the identification of a viable project site, the proponent will prepare an investigative phase application for a Clean Energy Project. Applications most often consist of a Crown land tenure application, an Investigative Plan, and waterpower projects may include a Water Licence application and associated requirements. An Investigative Plan that provides a project overview, project description, project maps, and an investigative schedule will also be required ([waterpower](#), [windpower](#), and [ocean energy](#)).

[Waterpower](#), [windpower](#), and [ocean energy](#) applications are available online at: [www.frontcounterbc.gov.bc.ca](http://www.frontcounterbc.gov.bc.ca).

### ***What's involved in Stage 1?***

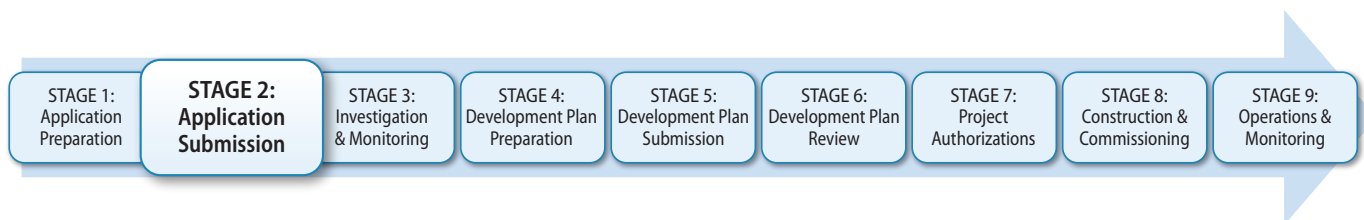
This is the stage in which proponents determine whether they are interested in developing a clean energy project. In this stage, a proponent can expect to:

- ▶ Evaluate the project's viability, including conceptual, technical and financial aspects.
- ▶ Consider potential environmental, social and permitting aspects of the project.
- ▶ Contact [FrontCounter BC](#) with any general questions, and meet with a Clean Energy project lead to discuss the project review process and any permitting questions that arise.
- ▶ Collect information regarding application forms and supplementary information as necessary.
- ▶ Read this guidebook, which will provide key information on the Provincial project review process.

By the end of stage 1, proponents should have a clear idea of whether or not to proceed with their investigative application. **It is important to note that General Area Licence of Occupation applications are not required at this stage of the process.**



## Stage 2: Application Submission



The goal of this stage is to provide FrontCounter BC with a complete investigative application so that your interest in developing a clean energy project can be formally acknowledged.

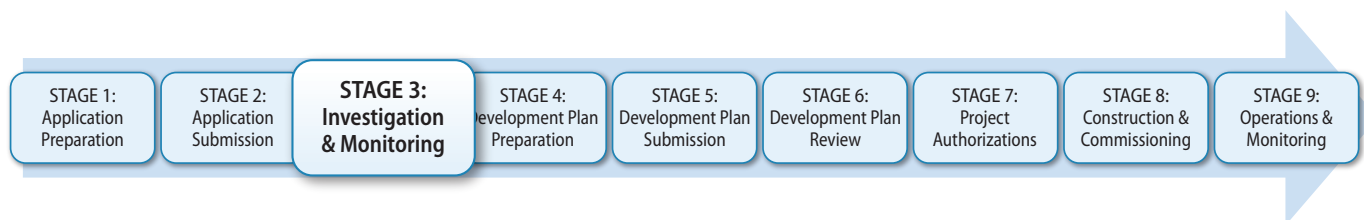
### ***What's involved in Stage 2?***

1. The proponent submits a complete application package to FrontCounter BC.
2. Staff at FrontCounter BC will check the application to ensure it meets specified quality standards and provides sufficient detail.
3. FrontCounter BC will enter the application proposal into the Crown Land database and complete a preliminary status report for the area under application, noting any known issues or conflicts. Basic application information will also be posted on Crown Land's [Applications and Reasons for Decision](#) webpage. Staking (if required) and advertising requirements will be provided to the Proponent at this time.
4. FrontCounter BC will then advise federal and provincial regulatory agencies, third parties, and First Nations with interests in the area that an application has been received. At this time a FLNRO project lead will be assigned to the application. The project lead is the primary point of contact for the proponent, and will manage the application review process from this point forward.
5. Upon receiving notification of the application from FrontCounter BC, agencies, First Nations and third parties may respond with approval requirements, information, concerns or requests for more information. These requests will be sent directly to the assigned project lead, who will coordinate all responses and relay the information to the proponent.

### ***Application Tip: Submitting complete applications***

- ✓ *Review the application requirements for all approvals by contacting FrontCounter BC.*
- ✓ *Ensure the application checklist has met all criteria prior to final submission.*
- ✓ *Contact FrontCounter BC or your project lead if there are project changes that may affect your submitted application.*
- ✓ *Monitor your application status by recording your file numbers and correspondence for status updates*

## Stage 3: Investigation and Monitoring



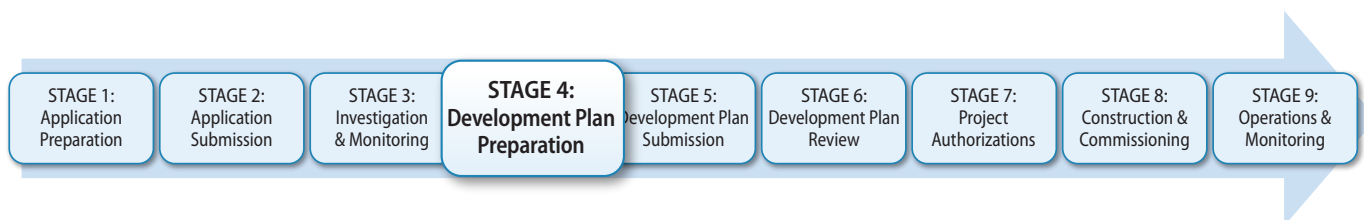
Investigation and monitoring is an essential stage in project development. During this stage, proponents will gather the data required to determine project feasibility, and begin preliminary project designs. A *Land Act* Investigative Licence of Occupation must be obtained at this stage to authorize initial investigation on Crown land and to conduct feasibility studies related to the project.

### What's involved in Stage 3?

1. A Land Officer will review the Investigative Plan submitted by the proponent. They will also review application referral/consultation comments and public advertising comments, to make a determination on whether or not to proceed with issuance of an Investigative Licence of Occupation for the area under application.
2. Once an Investigative Licence of Occupation is issued, the proponent will begin investigations to:
  - Conduct project feasibility assessments;
  - Validate the project concept;
  - Compile background information/baseline studies to identify critical regulatory and financial issues;
  - Develop a preliminary design to provide the basis for cost estimates from contractors as part of bid preparation;
  - Conduct a Feasibility Evaluation to estimate revenues based on typical unit costs for project components and initial resource estimates;
  - Conduct a Preliminary Evaluation to calculate revenues and costs based on the preliminary design of the project, including cost estimates based on site specific project costs; and
  - Develop a proposal to supply electricity under contract for a specific price (typically a BC Hydro bid submission), based on the best possible revenue and cost estimates.
3. Review the [Clean Energy Development Plan Information Requirements](#) (DPIR) document, available online and in Appendix A of this guidebook. The DPIR provides detailed information on what is required to be submitted as part of the development plan, and provides a host of links to provincial guidelines, standards and databases. Proponents may wish to meet with their project lead to discuss the process of building the Development Plan at this stage.

By the end of Stage 3, proponents should have an understanding of most critical issues entailed in the development of their envisioned project, including whether or not their project will require review by the [B.C. Environmental Assessment Office](#) and/or the [Canadian Environmental Assessment Agency](#).

## Stage 4: Development Plan Preparation



The goal of this stage is to provide proponents with the opportunity to discuss their project with agencies and reach a common understanding of what information is required as based on the development plan information requirements prior to formal submission of their comprehensive Development Plan.

A standardized set of provincially consistent [Development Plan Information Requirements](#) (DPIR) have been developed, and can be found in Appendix A of this Guidebook. The intent of the DPIR is to provide a consistent suite of information requirements that are typically needed to support provincial decision making for clean energy projects. It provides consistent use of terms, language, wording and format for all Development Plan submissions. The proponent will use the information requirements to build a project-specific Development Plan. Details on building a project-specific Development Plan are available in the ‘What’s Involved’ section below, or by contacting the assigned project lead.

By using the [DPIR](#) to build a project-specific Development Plan, and through dialogue with the project lead and other technical staff, proponents can identify what is needed to complete and deliver a comprehensive Development Plan.

### *What’s involved in Stage 4?*

1. Once the proponent has determined that the Crown land resources are sufficient to support a CEP in the location under application, they will contact their project lead to confirm that they are moving forward with the draft Development Plan. Proponents are strongly encouraged to contact their assigned project lead prior to drafting the Development Plan. This will ensure that the proponent is provided with the most up-to-date information and will provide an opportunity to discuss the project review process.
2. The project lead will identify the appropriate timing for the proponent to submit their General Area Licence of Occupation application for Crown land.
3. The project lead will notify other project team members that preliminary investigations on the project have been conducted and the proponent is prepared to move forward in the project review process.
4. The proponent, working with consultants and qualified professionals as necessary, will modify the generic [DPIR](#) into a project-specific Development Plan. Identification of valued ecosystem components (VECs) and proposed study methodologies are critical components of this step.

5. The proponent will submit the draft Development Plan to their assigned project lead. The project lead will circulate the draft to the project review team for review and refinement. Proponents and the project review team may need to refer the draft Development Plan to other parties to determine whether all necessary information requirements are adequately covered. At this time First Nations consultation will also be undertaken on the draft Development Plan, led by the consultation coordinator for the project.
6. Once the project review team is satisfied that all of the information required for the project is captured in the draft Development Plan, the project lead will inform the proponent that the draft Development Plan has been endorsed by the project review team. Prior to initiating studies, the proponent is responsible for engaging with agencies that are not members of the project review team (e.g. BC Hydro, Fisheries and Oceans Canada), local government, stakeholders and the public on the draft Development Plan. If there are any additions or changes resulting from these consultation and engagement activities, the draft Development Plan should be revised accordingly and shared with the project lead.
7. The proponent will then work to complete the final Development Plan for the project.

## Stage 5: Development Plan Submission



In this stage the final Development Plan is submitted. The Development Plan must identify, assess and address all impacts and contain all information required by staff to assess the project, as defined in the endorsed draft Development Plan (see Stage 4). The Development Plan must describe how the proposed project will meet legislated requirements, and must address, to the extent practicable, concerns raised during dialogue with the project review team during the draft Development Plan preparation process.

The Development Plan is one of the most important documents associated with the clean energy project application process as various agencies use the information in the Development Plan as the basis for review of related project authorizations.

From both provincial and federal government agencies' perspective, a Development Plan is a complete plan. A Development Plan does not contain questions such as "what type of invertebrate studies are required?" or loose ends such as "an archaeological study can be done if needed." It is expected that such issues have been identified and addressed during the draft Development Plan stage.

A thorough Development Plan describes a project in sufficient detail that regulatory agencies can concentrate on evaluating the proposed project. All Development Plans submitted for review should follow the format and guidelines provided in their endorsed draft development plan.

### **What's involved in Stage 5?**

1. A final Development Plan containing all required information is submitted to the assigned project lead. The Development Plan must provide adequate information for provincial statutory decision makers to adjudicate the application. The project lead will ensure that the information provided in the Development Plan is adequate for detailed review by conducting a completeness review. In a completeness review, the project review team evaluates the Development Plan against the endorsed draft Development Plan. Any discrepancies between the information requested in the DPIR and the information provided in the Development Plan will be communicated to the proponent. If this occurs, the proponent would be required to gather the requested information and re-submit the Development Plan. Target timelines for a 'completeness review' is 30 days.
2. The project lead coordinates the referral of the Development Plan to all relevant agencies, while the consultation coordinator manages the First Nations consultation. If the project is on or near First Nations traditional territory, proponents are encouraged to engage with First Nations to discuss potential impacts on Aboriginal interests.

### **A NOTE ABOUT REVISING GENERAL AREA LoO APPLICATIONS:**

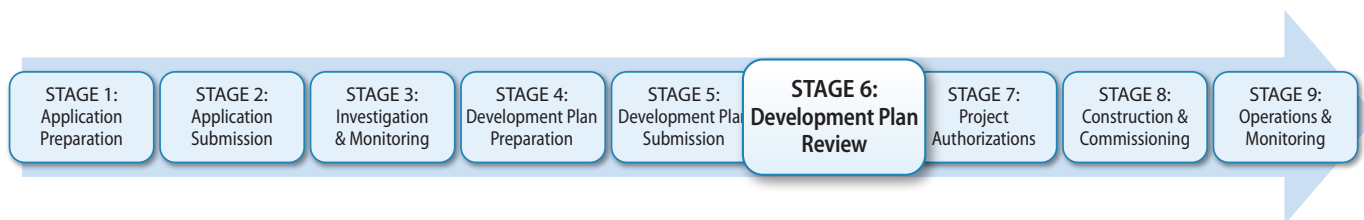
*Development of a clean energy project can at times require plan changes. Provisions exist that allow proponents to modify their plans as they discover and surmount challenges or find better ways of managing their projects. Proponents are encouraged to do careful research, including preliminary studies and assessments, to determine how much land they need for their project before applying for tenure because revisions and amendments are costly, time consuming, and confusing for stakeholders involved.*

*For **minor application revisions** (pre-tenure) that involve minor adjustments to the proposed works within the general area application there is no fee.*

***Major application revisions** are those that require new referrals to agencies and consultation with First Nations. Major revisions require a new application and payment of specified fees. Examples of major revisions would be the addition of new land, adding changing the alignment of the transmission line. Additions of new land outside of the original general area require a new status to check for existing tenure holders and potential land interest conflicts.*

*Proponents are encouraged to contact FrontCounter BC and/or their project lead before proceeding with the changes.*

## Stage 6: Development Plan Review



Once the completeness review is conducted, the detailed technical review of the Development Plan can begin. The technical review is one of the most critical stages in the process, as it is when technical staff, First Nations, and stakeholders assess the environmental and social impacts of the project and any proposed mitigation or compensatory plans are reviewed and considered.

### ***What's involved in Stage 6?***

1. Once a Development Plan passes the completeness review, the project lead will refer the Development Plan to the project review team and other relevant agencies for review.
2. The consultation coordinator for the project would provide the Development Plan to any potentially impacted First Nations and proceed with consultation on the project. Any comments or concerns that emerge as a result of the consultation activities will be provided to the proponent via the project lead.
3. The project review team will review the Development Plan, and may request additional preventative, mitigation or compensatory plans and/or provide supplementary information and detail. The project lead will coordinate all review comments and provide the proponent with a comment log.
4. Proponents then review the comments from staff and submit a Summary Report documenting how they have addressed all agencies' concerns.
5. During this time, proponents may be required to advertise their project publicly through the hosting of an open house or other public forum.
6. Once the project team is satisfied that the information provided in Development Plan provides sufficient detail to conduct a full assessment on the project application (including First Nations consultation), the Development Plan is deemed complete and a decision can be made on primary project authorizations.

### **Tips for CEP Proponents for an efficient project review**

1. **Use Provincial Guidelines and Provincial Resources**  
Proponents are requested to follow current provincial guidelines. These guidelines may include but are not limited to Provincial Fish Guidelines, Clean Energy Guidebook, and the DPIR. The DPIR is now a requirement; proponents with applications prior to this process are requested to refer to the DPIR for development plans currently being prepared. Ensure project budget accounts for adequate baseline studies as indicated in



Provincial guidelines. When submitting requirements such as studies, the information package should be signed by qualified resource professional and meet all Provincial requirements. Proponents may ensure guidelines are current by speaking with their project lead.

## 2. Communicate with Project Lead

Establish a relationship with the assigned project lead and/or the local Major Projects Office. Assign one point of contact for the project. Ensure project lead is made aware of all application submissions so that they can prioritize them accordingly and follow-up as required. Discuss the project schedule with the project lead on a regular basis. Keep the project lead aware of changes to the schedule and expectations around timelines. Confirm with project lead if the most current guidelines are being applied. Timely and thorough responses from proponents aid in more timely reviews by the Province. Proponents are asked to work with the project lead and not address project requirements with other agency staff.

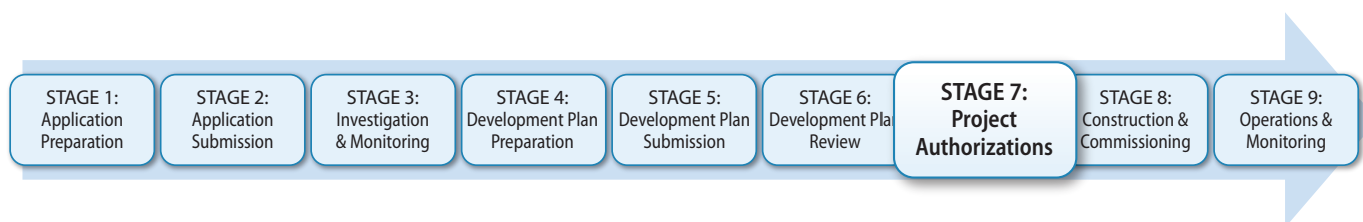
## 3. Work Collaboratively with First Nations, Stakeholders, and Other Tenure Holders

Initiate information sharing with First Nations, community groups, and other stakeholders. Seek letters of support for the project from those that have a stakeholder interest. First Nations and other groups should be familiar with the project prior to initial agency referral letters.

## 4. Concurrent Permitting with the Environmental Assessment Office and FLNRO

Proponents who intend to apply for EAO concurrent permitting are requested to: (1) notify the FLNRO as early as possible in the process and (2) work with the FLNRO through its assigned project lead to ensure they know what information outside of the EAO process is required for FLNRO's permitting purposes. This is particularly critical in the case of data that must be collected over multiple years and seasons. Proponents may use the DPIR to compare what is required through EAO and FLNRO permitting requirements. The Development Plan index within the DPIR is also a valuable resource for this purpose.

## Stage 7: Project Authorizations



At this stage provincial agencies are able to offer tenures, permits and other authorizations. This would include the issuance of primary project tenures such as a General Area Licence of Occupation under the *Land Act*, and for waterpower projects, issuance of a Water Licence allowing the use or diversion of water or approval for other works near waterways. It may also include other authorizations such as an Occupant Licence to Cut (OLTC) for the project

footprint and authorizations to use existing roads or to construct new ones.

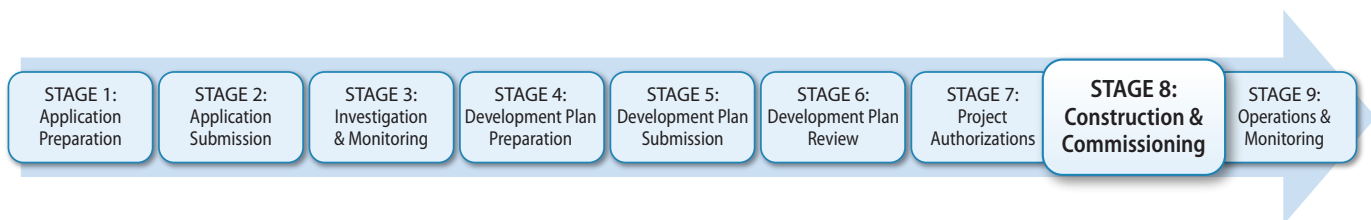
Any projects being reviewed by the B.C. Environmental Assessment Office will require certification before provincial agencies will make decisions on any project development authorizations.

### ***What's involved in Stage 7?***

A decision package is prepared by the project lead for the statutory decision makers. The decision package includes the First Nations consultation record, the stakeholder engagement record and the technical assessment of all required authorization documents into one complete package for the decision makers.

Decisions are then made on the primary project authorizations which typically include the Crown land tenure (i.e. General Area Licence or Multi-tenure Instrument) for all CEPs, and for waterpower projects, a Water Licence. Secondary authorizations will be assessed and issued as required. This can occur at any point after the primary authorizations are issued, including during the construction and commissioning phases. It is recommended that the project lead discuss these authorizations with the proponent to avoid unnecessary delays.

## **Stage 8: Construction and Commissioning**



Typically, there are various authorizations that will be issued during the construction phase of the project. The project lead will work with the proponent to try to 'bundle' the authorizations for processing as much as possible.

The requirement for oversight of the construction phase by independent qualified professionals may be required in the project permits or by EA project conditions. Typically, waterpower projects require an independent engineer (IE) and an independent environmental Monitor (EM) as per the project Water Licence. While other CEPs do not require an Independent Engineer, conditions of the EA Certificate may require an Independent Environmental Monitor to oversee construction activities.

For all CEPs, the final working version of the Operational Environmental Management Plan (OEMP) will be submitted during this stage. The OEMP is a long-term plan for 'effectiveness' and 'response' monitoring, following initiation of power generation. The OEMP builds on the collection of pre-project baseline data. Effectiveness monitoring reviews the effectiveness of operational practices on specified valued ecosystem components (VECs), and reviews the ability of the monitoring parameter to accurately predict changes to those VECs. Response monitoring is the long term monitoring of parameters or VECs to determine the project's

effect on the environment. The OEMP will outline the Proponent's effectiveness and response reporting requirements to government.

### **What's involved in Stage 8?**

1. Work plans for the IE and IEM (if required) will be submitted to the Province for review and acceptance.
2. Construction level permits will be to the Province for review and decisions.
3. The final working version of the Operational Environmental Management Plan (OEMP) will be reviewed and accepted during this stage.
4. Proponents will be expected to deliver on their specific project commitments that were identified during the project review.

Further requirements during this stage will be dependent upon the type of CEP that is being developed. For further information, please see the detailed chapters on waterpower, windpower, ocean energy, or other types of CEPs.

### **Land Tenure Tip:**

**General Area Licence Tenure:** *Tenure holders of a general area licence may request separate tenures for various improvements at any time during the term of the general area licence to reduce the footprint of the general area licence tenure. There is a cost for the tenure conversions. If multiple tenures are requested, the general area licence should be amended to exclude these areas. After construction is complete, the size of the general area licence tenure should be reduced to eliminate additional land that is not required for future expansion. Structures with longer-term tenures such as a lease, Crown Grant, and Statutory Right-of-Way must be legally surveyed at the applicant's expense.*

## **Stage 9: Operations and Monitoring**



Ongoing compliance monitoring and associated reports based on commitments of the Development Plan, OEMP, Operating Parameters & Procedures Report (OPPR) (waterpower only), EA certificate and other project commitment reports continue through the years of project operation. This phase of the project encompasses operation to decommissioning.


1. IEM is released of duties after final clean-ups are completed.
2. Interconnect to electricity grid for commercial operation.

3. Proponent submits annual OEMP report for review.
4. Ongoing compliance monitoring and associated reporting based on commitments of Development Plan, OEMP, OPFR (waterpower only), EA Certificate, etc.
5. Five years prior to termination of licence, proponent either applies for extension or prepares decommissioning plan.
6. At the end of the project life space, clean-up and site remediation will be completed.

### **Decommissioning**

Clean energy projects are expected to have a life span of 10 to 50 years. If a project is not completed, is shut down, or needs to be decommissioned, proponents are legally liable and responsible for site remediation. In the event that any tenures are not renewed, the site must be decommissioned by the tenure holder as per the terms and conditions of the tenure document, unless different arrangements are negotiated with the Crown. The length of time required to complete the decommissioning is project specific. Decommissioning of authorized instream works under the *Water Act* will also require approval of the *Water Act* engineer or a dam safety officer, if a dam is involved.





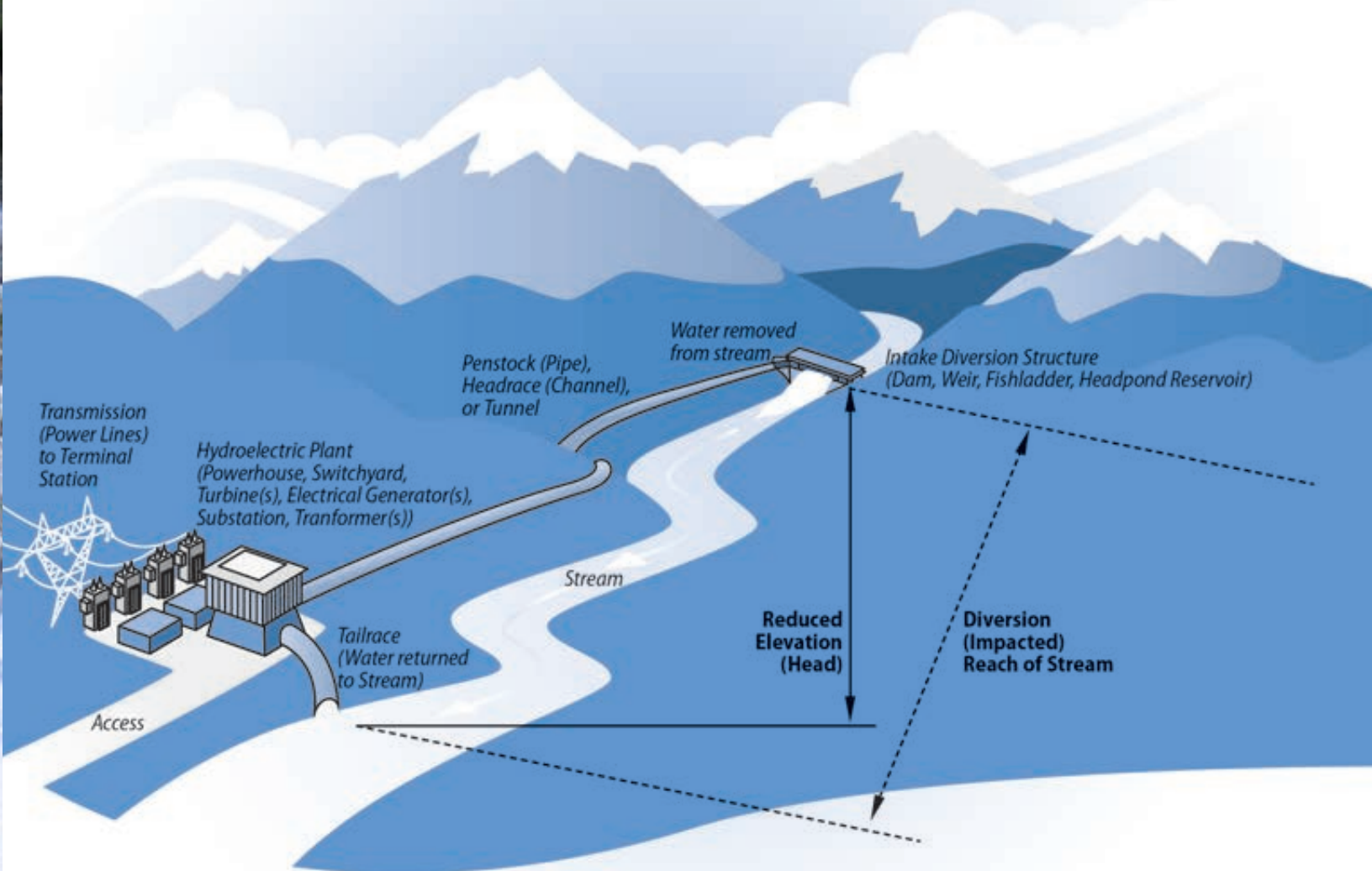
A typical 26 megawatt (MW) run-of-river power plant producing 80 gigawatt hours (GWh) of green energy annually would displace approximately 47,000 tonnes of carbon dioxide, the equivalent of taking 9,000 cars off the road.

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## Chapter 6: Waterpower Projects

Of the renewable energy sources that generate electricity, water (hydro) power is one of the most important in B.C. The following sketch shows the typical layout of a waterpower project.



Waterpower plants capture the energy of falling water to generate electricity. A turbine converts the kinetic energy of falling water into mechanical energy. Then a generator converts the mechanical energy from the turbine into electrical energy. Water is removed from a stream and transported through a pipe, or penstock, then pushes against and turns blades in a turbine to spin a generator to produce electricity. The water is returned to the stream via a tailrace. The electricity produced may be delivered to the provincial electrical grid (distribution) system via a transmission (power) line, or sent to the facilities of a self-generator.





*Installation of Penstock at McNair Creek  
Hydroelectric Project*

## How to Use This Chapter

This chapter includes information that is specific to the waterpower program and is more detailed in nature than what was provided in previous chapters. In this chapter you will find the following:

- ▶ Information specific to Water Licensing
- ▶ Provincial requirements that are specific to the waterpower program
- ▶ Information on Federal triggers for waterpower projects
- ▶ A summary table of common authorizations for waterpower projects, sorted by project phase
- ▶ Detailed information on project authorizations, sorted by agency

## Water Licensing

### ***Water Rights & the Water Act***

Access to use water from a stream in British Columbia will require a Water Licence under the *Water Act*. The *Water Act* vests ownership of the water in streams in B.C. to the Crown through the provincial government. The *Water Act* regulates the diversion, use and storage of water from streams, as well as changes (works and activities) in

and about streams for which an approval is required unless otherwise covered by the Water Regulation (Under the *Water Act*, springs, lakes, swamps and other surface water sources are defined as streams). Water rights follow “a first in time, first in right” principle and applications for water rights are adjudicated in a priority order.

### ***Acquiring a Water Licence***

In order to obtain a priority date for a source, you must first submit a Water Licence application to FrontCounter BC (stage 2 of the process). In order to apply for a Water Licence you must have an interest in the appurtenant land, and therefore, an Investigative Licence application must also be made. The Investigative Licence is a sufficient form of Crown land tenure to apply for a Water Licence; however, it is not considered a substantial enough interest to hold a Water Licence.

As identified in Section 7 of the *Water Act*, only qualified persons can acquire a Water Licence. In most cases, to be qualified, the person must be an owner of land or have a substantial interest in the land to be used for the project at the time of issuance of the licence. This may involve becoming the owner of the private land, under the *Land Title Act*, on which the powerhouse is to be located or, in the case of provincial Crown land, acquiring tenure under the *Land Act*, such as a General Area Licence of Occupation, and eventually a Lease or Crown Grant for the powerhouse site. Once the project reaches the Development Plan stage, you will need to apply for the General Area Licence of Occupation.

If private or First Nations’ lands are to be used to satisfy the land ownership requirement to qualify for a Water Licence, a written agreement is required from the landowners, including in

the case of reserve lands the requisite Federal authority under the *Indian Act* and from the First Nation Band Council.

The onus is on the proponent to identify, assess and address impacts with third party interests. Public safety, protection of the environment, and protection of other water users, including Aboriginal rights and title interests, are major concerns that must be addressed.

Waterpower projects that generate commercial electricity for sale are classified as general waterpower projects under the province's Water Regulations. Waterpower licences are issued for a 40 year period (that may be renewable). Water licences are appurtenant to the land on which the powerhouse will be located. It is important to note that a transfer of the appurtenant land triggers the transfer of the water licence to the new land owner. Water licence application fees are based on generation capacity of the proposed project and the amount of water that will be stored. Annual water rental fees are based on reported energy production and installed and under-construction capacities.

### **Storage Purpose Water Licence**

A storage purpose Water Licence may be required in addition to the waterpower purpose Water Licence. Storage or storage purpose means the collection, impounding and conservation of water in a stream or water from a stream. The decision to require a storage licence is made by WSD based on a number of considerations. A dam is defined as a barrier constructed across a stream or a barrier constructed off-stream and supplied by diversion of water from a stream. Additional application and rental fees will be applied when a storage purpose is required.

The British Columbia Dam Safety Regulation (DSR) may apply to the dam if project headworks are dimensionally large enough. Information provided in the project Development Plan will help Water Stewardship staff to determine if structures are considered to be a regulated dam. The DSR applies to dams which meet certain dam height or impounding capacity combinations as described in Section 2, DSR. The calculation of impoundment under the DSR is different than the calculation of storage for a storage purpose licence. The DSR also applies to all dams, no matter the size, that have a consequence of failure classification of significant, high, very high or extreme, as defined under Schedule 1 of the DSR.

All applicants are encouraged to review the *Water Act* – British Columbia Dam Safety Regulation for clarification, available online at

[http://www.bclaws.ca/EPLibraries/bclaws\\_new/document/ID/freeside/10\\_44\\_2000](http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/10_44_2000).

### **Flooding on Crown Land**

A Crown land tenure is required whether a project is determined to have a headpond area or a reservoir (storage). If the project is considered to have a headpond area, with little fluctuation in water level, a Licence of Occupation under the *Land Act* will be required. The headpond area is typically included in the same tenure as the intake. If the project has stored water, then a Permit over Crown Land (PCL) under the *Water Act* is considered to be the appropriate authorization for the flooding of Crown land. The PCL forms part of the project Water Licence.

### **A NOTE ABOUT INSTREAM FLOW DATA COLLECTION FOR WATERPOWER PROJECTS:**

The collection of appropriate data for the Instream Flow Analysis is critical to avoiding delays in the review of a project application. The Ministry of Forests, Lands and Natural Resource Operations has developed guidelines for the collection, analysis, and presentation of data for Water Licence applications and approvals associated with small hydro power projects. These data standards are an integral part of the Instream Flow Guidelines for B.C. Details are available at [www.for.gov.bc.ca/hts/risc/pubs/aquatic/index.htm](http://www.for.gov.bc.ca/hts/risc/pubs/aquatic/index.htm). Additional documents on assessment methods and instream flow thresholds include:

- [\*"Assessment Methods for Aquatic Habitat and Instream Characteristics in Support of Applications to Dam, Divert, or Extract Water from Streams in British Columbia". Lewis et al. \(2004\)\*](#)
- [\*"Guidelines for the collection and analysis of fish and fish habitat data for the purpose of assessing impacts from small hydropower projects in British Columbia. Hatfield et al. \(2007\)\*](#)
- Draft Ramping Study Requirements are available – contact the Major Projects Office's Senior Project Manager - Clean Energy (<http://dir.gov.bc.ca/gtds.cgi?show=Branch&organizationCode=FLNR&organizationalUnitCode=MPO>).

The Instream Flow Guidelines listed above provide direction on data collection and its presentation, including

1. Description of the proposed project;
2. Description of the natural hydrology, geomorphology, and biology in the watershed;
3. Assessment of how the hydrology, geomorphology, and biology will be affected by the proposed project;
4. Description of other land and water uses in the area that may interact with the project.

Further information on how to conduct a detailed flow assessment can be found at the Instream Flow Council's site: [www.instreamflowcouncil.org](http://www.instreamflowcouncil.org)

Timing windows for instream works can also be found online: [www.env.gov.bc.ca/wld/instreamworks/regionaltimingwindows.htm](http://www.env.gov.bc.ca/wld/instreamworks/regionaltimingwindows.htm)

## **Special Requirements for Waterpower Projects**

### **Requirements for Independent Engineer and Independent Environmental Monitor**

Waterpower Water Licences include conditions for the proponent to retain an Independent Engineer (IE) and an Independent Environmental Monitor (IEM). Both the Independent Engineer and Environmental Monitor are qualified professionals that report to government during the construction and commissioning phases. The IE and IEM will be required to submit work plans and resumes to Water Act Statutory Decision Maker for their approval.

### **Independent Engineer**

The Licensee will be required to retain an Independent Engineer, who will provide [information and reports](#) under the direction of the *Water Act* Engineer or Regional Water Manager regarding the design and construction of Works as identified in the Water Licence.

The IE will also review detailed engineering plans for the Works and will make recommendations to the *Water Act* Engineer or Regional Water Manager with respect to issuance of Leave to Commence Construction (LCC) and Leave to Commence Operations (LCO) authorizations.

### **Independent Environmental Monitor**

The Licensee will be required to retain an Environmental Monitor (EM) who will provide [information and reports](#) on construction activities in relation to the requirements outlined in the Construction Environmental Management Plan and associated Environmental Protection Plans.

Typically, the IEM works closely with the IE to address any environmental concerns associated with the issuance of LCCs. The IEM has delegated Stop-Work Order authority under the *Water Act*.

### **Operating Parameters & Procedures Report**

The Operating Parameters & Procedures Report (OPPR) is a life-of-project plan for describing the facility, operating procedures, and monitoring and reporting requirements (e.g. instream flow requirements, ramping, etc.). The OPPR is a living document that is typically submitted prior to commissioning and then is amended repeatedly during commissioning and operations as details of the operations of the facility are refined. The OPPR will outline the proponent's compliance reporting requirements to government.

Draft Operating Environmental Management Plan (OEMP) template and OPPR templates are available by contacting the Major Projects Office's Senior Project Manager - Clean Energy: <http://dir.gov.bc.ca/gtds.cgi?show=Branch&organizationCode=FLNR&organizationalUnitCode=MPO>

## **Working with Federal Agencies**

### **Fisheries and Oceans Canada**

The footprint and impacts associated with construction, installation, and operation of hydroelectric projects have the potential, for example, to:

- create obstructions to fish passage
- entrain fish at intakes causing mortality
- cause a harmful alteration, disruption or destruction (HADD) of fish habitat
- alter the natural flow regimes resulting in a flow related HADD, insufficient flows for protection of various fish life stages, or sudden flow changes causing stranding

DFO's primary requirements and concerns related to small hydro projects are summarized on the next page.

- i. Sufficient residual flows must be released at the headworks in order to provide for fish or fish habitat within the diversion reach.

- ii. Optimally, the intake and tailrace should be located with fish populations in mind. Where fish habitat exists within the proposed project area, diverted water should be returned to the stream upstream of anadromous salmonid, critical trout or endangered species habitat. In addition, the project should avoid impacts to resident fish and their habitats. Less detailed studies and project review is more likely in less sensitive receiving waters. In instances where an authorization will be issued, additional monitoring will be required.
- iii. There shall be no sudden cessation or surge in flows resulting in river stage change within the diversion reach and downstream from the tailrace during start-up or emergency shutdown.
- iv. The proponent should take all measures to ensure protection of fish from entrainment. Fish screening, other engineered designs or other mitigation features must be part of the project design. Other options to avoid or mitigate potential fish entrainment will only be considered if technical justification is provided to demonstrate that fish screening will not work. The project application should include technical data for DFO to determine whether a *Fisheries Act* authorization is required.
- v. DFO's [Project Notification and Review Application Form](#) should be completed for all waterpower projects. This form needs to be submitted as early as possible to involve DFO in the application process. Where possible, DFO requirements may be incorporated into the Development Plan. The need for an authorization from DFO and a *Canadian Environmental Assessment Act*, 2012 (CEAA 2012) review will be determined upon review of the project's Development Plan.

### **Navigation Protection Program / Transport Canada**

Run of river hydroelectric projects have the potential to affect navigation on waterways through the placement of project components or through changes to water flow along diversion reaches that are sited in navigable waters. Bridge crossings along access roads, intake structures, and transmission line crossings associated with clean energy projects have the potential to affect navigation.

The Navigation Protection Program reviews waterpower project proposals to determine if they require approval under the NPA. Approval under the NPA is required for any works placed on, over, under, through or across navigable waters that is on the List of Scheduled Waters. The List of Scheduled Waters lists those navigable waters for which regulatory approval is required for works that risk a substantial interference with navigation. Determination of navigability is made by Transport Canada's Navigation Protection Program Officers only when an application has been received.

For more information related to requirements for NPA reviews you may visit the Navigation Protection Program website at: [www.tc.gc.ca/eng/programs-621.html](http://www.tc.gc.ca/eng/programs-621.html).

The requirement for an Approval under the NPA triggers the requirement for Transport Canada, as a responsible authority, to conduct an Environmental Assessment under the *Canadian Environmental Assessment Act*, 2012 (CEAA 2012).



*Although there are countless rivers in the province not all are suitable for Run-of-River projects. Potential sites must have cost effective transmission access, undergo a comprehensive environmental assessment, meet government guidelines and regulations and be commercially viable.*



## Waterpower Common Authorizations - Quick View:

<i>Land Act</i>	<i>Water Act</i>	<i>Forest Act Forest Practices Code Act Forest and Range Practices Act</i>	<i>Wildlife Act</i>
<b>INVESTIGATIVE PHASE</b>			
Investigative Licence of Occupation		Occupant Licence to Cut or Free Use Permit for investigative area	Scientific Fish Collection Permit Wildlife Sundry Permits
<b>PRIMARY PROJECT PERMITTING (Development Plan Approved)</b>			
Multi-Tenure Instrument (MTI) -General Area Licence of Occupation	Water Licence, may include Permit Over Crown Land	Occupant Licence to Cut for project footprint*	
<b>PROJECT CONSTRUCTION &amp; SECONDARY PERMITTING</b>			
MTI - Licence of Occupation for quarry purposes MTI - Licence of Occupation for communication site	S. 9 Notification or Approval For Changes In or about a Stream (e.g. roads, bridges) S.8 Approval for short-term water use (e.g. concrete batching) Approval of Independent Engineer and Environmental Monitor by Regional Water Manager Leave to Commence Construction(s) issued by Water Engineer or Independent Engineer	Third Party Road Use Agreement* Works Permit* Road Use Permit* Special Use Permit for road access*	
<b>OPERATIONS</b>			
MTI - Powerhouse - Lease or Crown Grant MTI - Intake Structure LoO or Lease MTI - Tunnel and/or penstock – LoO or Stat ROW MTI - Transmission line – LoO or Stat ROW MTI - Roads - LoO	Leave to Commence Operations issued by Water Engineer or Independent Engineer		

Table Notes: \* - these permits may be considered primary or secondary authorizations depending on the project.

<i>Heritage Conservation Act</i>	<i>Transportation Act</i>	<i>Miscellaneous Permits</i>	<i>BC/Federal Environmental Assessment (if applicable)</i>
Investigative/ Inspection/ Site Alteration Permit			
			EA Certificate & required Federal Permits. EAC issued before provincial authorizations.
Construction level Site Alteration Permit	Access Permits within Highway ROW* Utility Permit within Highway ROW*	Food Premises Permit Refuse Permit Fuel Storage Permit Effluent Discharge Permit Air Discharge Permit	

## Waterpower Common Authorizations – Details:

### Land Act Authorizations

Access to Crown land requires a land tenure under the *Land Act*. Over the course of waterpower project investigation and development, FLNRO issues various types of Crown land tenures.

#### Applicable legislation and policy:

- *Land Act*: [http://www.bclaws.ca/EPLibraries/bclaws\\_new/document/ID/freeside/00\\_96245\\_01](http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96245_01)
- [Waterpower Policy](#)

Authorization Type	Project Phase	Purpose	Additional Information
<b>Investigative Licence</b>	Investigative	<p>Required for access to Crown land for appraisals, inspections, analyses, inventories, surveys or other investigations of Crown land or its natural resources.</p> <p>The tenure holder must permit public access to the area without interference, and must recognize that overlapping and layering of tenures may be authorized by government.</p> <p>The maximum term for an investigative licence is five years with the possibility of a one-time replacement. The maximum size for a tenure area is 5000 ha.</p>	<p>An investigative licence application is required in order to apply for a water licence. However, a proponent may choose to apply for the investigative licence on its own.</p> <p>By obtaining an investigative licence proponents may:</p> <ul style="list-style-type: none"> <li>• carry out research to determine the parameters of a project;</li> <li>• complete field studies to inform the project Development Plan and/or EA Application;</li> <li>• determine how much land is needed for project components and facilitate tenuring for a smaller area.</li> </ul> <p><a href="#">Application Requirements</a></p> <p>Annual rental of \$500 per year</p>

<b>Multi Tenure Instrument - General Area Licence of Occupation</b>	Primary Permitting	<p>Required for the footprint of all permanent improvements (powerhouse, penstock, intake, etc.) as well as all temporary construction areas such as laydown &amp; spoil areas.</p> <p>The Multi Tenure Instrument (MTI) is the preferred tenure document for CEPs in development and operation. It is one overarching document for the project. Individual component tenures become schedules attached to this main document.</p> <p>The GALOO schedule will be issued over the broad polygon area to allow for the construction of improvements prior to survey and to allow for adjustments in the final locations of improvements due to final engineering. The term is usually sufficient to allow for construction up to the Commercial Operation Date.</p>	<p>The GALOO enables the proponent to:</p> <ul style="list-style-type: none"> <li>• construct all project components</li> <li>• have a secure tenure for the 'appurtenant land' for the project water licence</li> </ul> <p>As per the Waterpower Policy, upon completion of construction, the tenure area will be reduced to reflect only what is required for project operation. At that time, the GALOO will be converted into individual Project operation phase tenures (i.e. power house site, penstock, transmission line, etc.), and each project component will require an individual conversion fee as per the Miscellaneous Fees Regulation (50% of the application fee for that program area). As part of the tenure conversions, the term will be changed to match the term of the Water Licence (WL standard term is 40 years).</p> <p><a href="#">Development Plan Information Requirements</a></p> <p>Pricing as per <a href="#">Utilities Policy</a></p>
<b>MTI - Licence of Occupation for quarry purposes</b>	Construction	If applicable, a licence of occupation for aggregate purposes will be required in addition to the General Area Licence of Occupation.	<p>The aggregate LoO will enable the proponent to extract quarry materials to build project components.</p> <p>In addition to applying for the LoO, a Notice of Work application may need to be filed with the MEM.</p> <p>Quarry information to be included in the project Development Plan.</p> <p><a href="#">Aggregate &amp; Quarry Materials Policy</a></p>
<b>MTI - Licence of Occupation for Communications Site</b>	Construction	If required, a licence of occupation for communication site purposes will be required in addition to the General Area Licence of Occupation.	<p>Communications site information to be included in the project Development Plan.</p> <p><a href="#">Communications Site Policy</a></p>

<b><i>MTI - Lease or Crown Grant - Powerhouse</i></b>	Operations	<p>Tenure conversion for the powerhouse for long-term tenure with exclusive rights.</p> <p>A lease or Crown grant will be issued where substantial improvements are proposed and/or where definite boundaries are required in order to avoid conflicts.</p> <p>A legal survey will be required at the applicant's expense.</p>	<p>The powerhouse is considered to be the 'appurtenant land' for the project Water Licence. For a lease, the tenure term is typically matched to the term of the water licence.</p> <p>Powerhouse information to be included in the project Development Plan.</p> <p>For a Crown grant, the land will be priced at the appraised land value based on comparable industrial markets. Lease pricing as per <a href="#">Industrial General Policy</a></p>
<b><i>MTI - Statutory Right of Way - Transmission line</i></b>	Operations	<p>Tenure conversion for linear uses of Crown land for communication, energy production, and utility developments.</p> <p>The tenure holder is granted a legal right of passage over the land for a specific purpose.</p> <p>A legal survey will be required at the applicant's expense to define the tenured area.</p>	<p>Once construction of the works has been completed and legal surveys have been completed for each component, various long-term tenures will be issued for the components. For example, the penstock and the transmission line will be converted to a right-of-way.</p> <p>Transmission line information to be included in the project Development Plan.</p> <p>Pricing as per <a href="#">Utilities Policy</a></p>
<b><i>MTI - Statutory Right of Way - Penstock and/or tunnel and headpond</i></b>	Operations	<p>Tenure conversion for linear uses of Crown land for communication, energy production, and utility developments. Stat ROWs for the penstock and/or tunnel may be with or without the intake.</p> <p>The tenure holder is granted a legal right of passage over the land for a specific purpose.</p> <p>A legal survey will be required at the applicant's expense to define the tenured area.</p>	<p>Once construction of the works has been completed and legal surveys have been completed for each component, various long-term tenures will be issued for the components. For example, the penstock and the transmission line will be converted to a right-of-way.</p> <p>Penstock, tunnel, &amp; headpond information to be included in the project Development Plan.</p> <p>Pricing as per <a href="#">Utilities Policy</a></p>

<b>MTI - Licence of Occupation or Lease - Intake Structure (including headpond)</b>	Operations	<p>Tenure conversion for a licence of occupation or a lease for the intake site if not already included within the tenure for the penstock and/or tunnel.</p> <p>A lease will require a legal survey at the applicant's expense to define the tenured area.</p>	<p>Intake and headpond information to be included in the project Development Plan.</p> <p>Pricing as per <a href="#">Utilities Policy</a></p>
<b>MTI - Licence of Occupation - Roadways</b>	Operations	<p>Tenure conversion for a licence of occupation for roads and bridges to authorize long term access to the project site.</p> <p>Note that <i>Land Act</i> roads require additional Section 9 <i>Water Act</i> authorizations for stream crossings.</p>	<p>Roadways information to be included in the project Development Plan.</p> <p>Roadways Policy:  <a href="http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/roadways.pdf">http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/roadways.pdf</a> </p>

## Water Sustainability Act Authorizations

All waterpower projects require a Water Licence under the *Water Sustainability Act* for purposes such as power production and water storage. The Water Licence will include conditions for the proponent to obtain additional *Water Sustainability Act* authorizations and to retain independent qualified professionals to oversee construction and commissioning activities. Other *Water Sustainability Act* authorizations may be required during project construction and operations. Applicable legislation and policy:

- [Water Sustainability Act](#)
- [Water Regulation](#)
- [Dam Safety Regulation](#)

Authorization Type	Project Phase	Purpose	Additional Information
<b>Water Licence</b>	Primary Permitting	Required if water is being diverted or stored for power generation purposes. The Water Licence may include a Permit Over Crown Land to authorize flooding of Crown land	<p>Water licences are appurtenant to a parcel of land in which the applicant must have a substantial interest at the time of Water Licence issuance. For projects on Crown land, the Water Licence is initially tied to the General Area Licence of Occupation and then later to the Lease or Crown Grant for the powerhouse site.</p> <p><a href="#">Application Requirements:</a> Initial application to obtain a date of priority on the source (submitted in the investigative phase - no authorization issued at this stage)</p> <p><a href="#">Development Plan Information Requirements</a></p>



<b>Water Licence (Temporary Licence for Worker's Camp)</b>	Primary Permitting	Temporary water use licence for a temporary worker's camp.	Water licences are appurtenant to a parcel of land in which the applicant must have a substantial interest at the time of Water Licence issuance. For projects on Crown land, the Water Licence is initially tied to the General Area Licence of Occupation for the temporary worker's camp.  <a href="#">Applying for a Water Licence for a temporary worker's camp</a>
<b>Acceptance of Independent Engineer and Independent Environmental Monitor</b>	Pre-Construction	The proponent is required to retain an Independent Engineer (IE) and Independent Environmental Monitor (IEM) as per conditions in the project Water Licence.  Proposed work plans, including credentials, for the IE and IEM must be submitted to Water Management for review. Interviews with the proposed qualified professionals may be required. If the IE and IEM meet the required qualifications, and the work plans are considered to be adequate, then the <i>Water Act</i> SDM will accept the IE and IEM.	<a href="#">Scope of Information and Reports by the Independent Engineer</a>  <a href="#">Scope of Information and Reports by the Independent Environmental Monitor</a>
<b>Section 9 Approval or Notification for Changes in or about a Stream</b>	Construction	Required for changes in and about a stream. For waterpower projects, these authorizations are typically related to stream crossings for road access. Notifications are for simple crossings and Approvals are required for work more complex in nature and that may result in more impact to the stream.	The proponent must address channel stability, and flood levels, as well as fish and wildlife resource values as appropriate. An application for an Approval is typically referred to other regulatory agencies such as Resource Management Division of the FLNRO and Fisheries and Oceans Canada (DFO) for comment during the adjudication process. Allow appropriate time for processing.  <a href="#">Water Licences &amp; Approvals</a>

<b>Section 8 Approval for Short-Term Water Use</b>	Construction	Required for diversion of water for short-term use. For waterpower projects, these authorizations are typically related to water use for concrete batching and road maintenance.	The proponent must have an interest in the land in order to apply for the Section 8 (e.g. land or road tenure). An application for an Approval is typically referred to other regulatory agencies such as Resource Management Division of the FLNRO and Fisheries and Oceans Canada (DFO) for comment during the adjudication process. Allow appropriate time for processing. <a href="#">Apply for a Water Use Approval</a>
<b>Leave to Commence Construction</b>	Construction	Leaves to Commence Construction (LCCs) are required prior to the construction of project components that are listed as Works on the Water Licence.	LCC submissions are engineering packages and work plans for specific project components. The packages are reviewed by the Independent Engineer and Water Management and the LCC may be authorized by the <i>Water Act</i> SDM or by the Independent Engineer. Typically there are various LCCs for a project and the packaging/timing of the submissions is dependent upon the proponent's project schedule.
<b>Leave to Commence Operations</b>	End of commissioning phase	A Leave to Commence Operation is required prior to operations of the plant.	This is the final information package on the operations of the plant that is submitted to the Independent Engineer and Water Management. The LCO may be authorized by the <i>Water Act</i> SDM or by the Independent Engineer.

## Forest Act Authorizations

Most waterpower projects require the removal of Crown timber and the use of forestry roads, which fall under various pieces of forestry legislation. These Acts and associated regulations specify terms under which permission can be granted to allow proponents to cut, damage, destroy and remove Crown timber. The use of forest service and other roads is administered through these Acts and overseen by the Province, as is the modification of forest roads to construct and install project works, components and infrastructure such as bridges and culverts.

Authorization Type	Project Phase	Purpose	Additional Information
<b>Free Use Permit</b> Forest Act, Part 3, Division 9 <a href="http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96157_03">www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96157_03</a>	Investigative Phase	Required for cutting and removing < 50 m <sup>3</sup> of merchantable timber	Contact the local FrontCounter BC or District Office for further information.

<p><b>Occupant Licence to Cut</b></p> <p><i>Forests and Range Practices Act</i>  <a href="http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_02069_01#section19">www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_02069_01#section19</a></p>	<p>Primary Permitting</p>	<p>Required for cutting and removing trees from the entire project footprint.</p>	<p>Please note that in many cases Timber Cruising cannot be done during winter months. See website for Cruising Manual, Interior Appraisal Manual, and Coast Appraisal Manual.</p> <p><a href="#">Cruising and Appraisal Manuals</a></p> <p>Application Requirements: Contact the local FrontCounter BC or District Office for further information.</p>
<p><b>Special Use Permit</b></p> <p><i>Forests Practices Code of British Columbia Act:</i>  <a href="http://www.for.gov.bc.ca/tasb/legregs/archive/fpc/fpcact/conftpc.htm">www.for.gov.bc.ca/tasb/legregs/archive/fpc/fpcact/conftpc.htm</a></p> <p>Provincial Forest Use Regulation:  <a href="http://www.for.gov.bc.ca/tasb/legregs/archive/fpc/fpcaregs/pforuse/pfur.htm">www.for.gov.bc.ca/tasb/legregs/archive/fpc/fpcaregs/pforuse/pfur.htm</a></p>	<p>Primary Permitting or Construction</p>	<p>Required to construct a new road or to use an existing road to access CEP area. Note that if road is already tenured to another party, the proponent will need to enter into a Third Party Road User's Agreement – see section below.</p> <p>Note that SUPs do not require additional Section 9 <i>Water Act</i> authorizations for stream crossings.</p>	<p>Engineering Manual:  <a href="http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/manuals_standards/Eng-Manual.pdf">www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/manuals_standards/Eng-Manual.pdf</a></p> <p>Road Safety Guidelines: Contact the local District Office for further information.</p> <p>Application Requirements (Special Use Permit Administration Guide):  <a href="http://www.for.gov.bc.ca/ftp/hth/external/publish/web/timber-tenures/SUP-Admin-Guide-V.2-(Jan-2012).pdf">www.for.gov.bc.ca/ftp/hth/external/publish/web/timber-tenures/SUP-Admin-Guide-V.2-(Jan-2012).pdf</a></p>
<p><b>Road Use Permit</b></p> <p><i>Forest Act:</i> <a href="http://www.bclaws.ca/EPLibraries/bclaws_new/document/LOC/freeside/--%20F%20--/Forest%20Act%20RSBC%201996%20c.%20157/00_Act/96157_08.xml#part8">www.bclaws.ca/EPLibraries/bclaws_new/document/LOC/freeside/--%20F%20--/Forest%20Act%20RSBC%201996%20c.%20157/00_Act/96157_08.xml#part8</a></p>	<p>Primary Permitting or Construction</p>	<p>Forest Service Roads typically have a primary road user that holds a Road Use Permit (RUP). Additional road users must apply for a Road Use Permit and will be required to enter into a maintenance agreement with the primary holder.</p> <p>The RUP authorizes the holder to use a Forest Service Road for industrial purposes, construct/modify the road, including the replacement and installation of road infrastructure.</p>	<p>Road Use Permit Application:  <a href="http://www.for.gov.bc.ca/hth/engineering/permits_documents.htm">www.for.gov.bc.ca/hth/engineering/permits_documents.htm</a></p> <p>FSR Permits and Agreement Procedures:  <a href="http://www.for.gov.bc.ca/dck/Engineering/FSR%20Permits%20and%20Agreements.pdf">www.for.gov.bc.ca/dck/Engineering/FSR%20Permits%20and%20Agreements.pdf</a></p>

<b>Works Permit</b> Forest Service Road Use Regulation: <a href="http://www.for.gov.bc.ca/tasb/legsregs/archive/fpc/fpcaregs/fsroadus/fsrur.htm">www.for.gov.bc.ca/tasb/legsregs/archive/fpc/fpcaregs/fsroadus/fsrur.htm</a> Works Permit (NRS103) – “Authorization to Construct Works within a Forest Service Road Right-of-Way for a Purpose other than the Passage of Vehicular or Pedestrian Traffic” <a href="https://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/NRS103.docx">https://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/NRS103.docx</a>	Primary Permitting or Construction	Allows the holder to carry out works within a Forest Service road right-of-way to install penstocks, transmission lines, and underground utilities and undertake other authorized project-related (facilities) activities.	“Clean Energy Projects – Requirements for Planning, Design and Construction to Protect Forest Roads or Timber Tenures” <a href="https://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/CEP-Planning-Design-Construction-Requirements.pdf">https://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/CEP-Planning-Design-Construction-Requirements.pdf</a> FSR Permits and Agreement Procedures: <a href="https://www.for.gov.bc.ca/dck/Engineering/FSR%20Permits%20and%20Agreements.pdf">https://www.for.gov.bc.ca/dck/Engineering/FSR%20Permits%20and%20Agreements.pdf</a>
Third Party Road Use Agreement Forest Act: <a href="http://www.bclaws.ca/EPLibraries/bclaws_new/document/LOC/freeside/--%20F%20--/Forest%20Act%20RSBC%201996%20c.20157/00_Act/96157_08.xml#part8">www.bclaws.ca/EPLibraries/bclaws_new/document/LOC/freeside/--%20F%20--/Forest%20Act%20RSBC%201996%20c.20157/00_Act/96157_08.xml#part8</a>	Primary Permitting or Construction	Allows the holder to use the road in situations where an industrial user already has a Road Permit for Non-Forest Service Roads.	Application Requirements: Contact the local FrontCounter BC or District Office for further information.

### **Forest Practices Code of British Columbia Fish-stream Crossing Guidebook**

The Forest Practices Code of British Columbia Fish-stream Crossing Guidebook is the standard DFO applies to fish-stream crossings for forestry and other industry sectors as it reduces the high potential for unauthorized HADD of fish habitat. The Guidebook can be found at: <https://www.for.gov.bc.ca/hfp/Fish/Fish-Stream%20Crossing%20Web.pdf>.

Within this document is a decision making matrix for selecting acceptable new and replacement stream crossing structures. The Guidebook explains DFO's review process including which types of structures would be subject to either agency review and/or DFO Authorization.

## Wildlife Act Authorizations

The act was created to help ensure the wise management of our wildlife resources and minimize the negative impacts of human activities. Whenever and wherever the needs of wildlife must be balanced with the needs of people, the Wildlife Act helps forge workable solutions.

Authorization Type	Project Phase	Purpose	Additional Information
Scientific Fish Collection Permit & Wildlife Sundry Permits	Investigative	Required for capture and/or collect fish specimens for scientific and other non-recreational purposes.	<a href="#">Fish collection permits Application Requirements</a>  <a href="#">Wildlife Sundry Permits Application Requirements</a>

## Heritage Conservation Act Authorizations

British Columbia's archaeological sites are protected under the *Heritage Conservation Act (HCA)*. Archaeological sites are protected through designation as "Provincial heritage sites", or through automatic protection by virtue of being of particular historic or archaeological value. Protected archaeological sites may not be altered, i.e. changed in any manner, without a permit issued by the Minister or designate.

Authorization Type	Project Phase	Purpose	Additional Information
Inspection/ Investigative/site Alteration Permit  <i>Heritage Conservation Act:</i> <a href="http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96187_01">www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96187_01</a>	Investigative phase	<p>The purpose of a heritage inspection is to assess the archaeological significance of land or other property.</p> <p>In this regard, the inspection determines the presence of archaeological sites which warrant protection, or are already protected, under the HCA.</p> <p>The site alteration permit authorizes the removal of residual archaeological deposits once the inspection and investigation are completed.</p>	<p>The provisions of the HCA apply whether sites are located on public or private land.</p> <p><a href="#">Permits and Permitting</a>  <a href="#">Alteration Permit Requirements</a>  <a href="#">Applicaition for Alteration Permit</a></p>

## Transportation Act Authorizations

Ministry of Transportation and Infrastructure (MoTI) issues permits granting proponents permission to conduct work on and around B.C. highways and rights-of-way. No work or activity is allowed on or near a highway or highway right of way until obtaining a valid permit is secured.

Applicable legislation and policy:

- *Transportation Act*: [www.bclaws.ca/EPLibraries/bclaws\\_new/document/ID/freeside/00\\_04044\\_01](http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_04044_01)
- *Utilities Policy*: [www.th.gov.bc.ca/permits/linked%20documents/working.pdf](http://www.th.gov.bc.ca/permits/linked%20documents/working.pdf)


Authorization Type	Project Phase	Purpose	Additional Information
<b>Access Permit</b>	Construction	Required to construct roads that originate off any road maintained by the MoTI.	Although owners of land have certain rights of access under the <i>Land Title Act</i> , highway users have certain rights of safe and efficient travel. Ministry staff considers these competing interests when evaluating access permits, in accordance with provincial legislation and case law.  Access Permit Requirements: <a href="http://www.th.gov.bc.ca/permits/Highway%20Access%20Permits.asp">www.th.gov.bc.ca/permits/Highway%20Access%20Permits.asp</a>
<b>Utility Permit</b>	Construction	Required to construct and maintain power lines within existing MoTI highway right-of-way.	Anyone wishing to construct utilities within the provincial highway right-of-way must obtain the approval of the Ministry of Transportation. Utility permits cover the following services and activities: <ul style="list-style-type: none"> <li>• Pipelines</li> <li>• Water and sewer lines</li> <li>• Overhead or underground power and communication lines</li> <li>• Wireless communications</li> <li>• Trenching, boring and jacking</li> <li>• Installations on or near structures</li> </ul> Permitting Requirements: <a href="http://www.th.gov.bc.ca/permits/Permits%20for%20Works%20on%20Right-of-Way.asp#Utility">www.th.gov.bc.ca/permits/Permits%20for%20Works%20on%20Right-of-Way.asp#Utility</a>
<b>Commercial Transportation Permit</b>	Construction	A commercial vehicle permit is required for a vehicle and/or load in the following situations: to operate a vehicle and/or load on a provincial road or highway where the size or weights exceed legal; a non-resident commercial vehicle needing to operate in B.C. for a single trip; a non-resident commercial vehicle travelling into or through B.C. that is required to pay a fuel tax.	Commercial Vehicle Safety and Enforcement: <a href="http://www.cvse.ca/permit_centre.htm">http://www.cvse.ca/permit_centre.htm</a>



## Miscellaneous Permits Related to Project Construction

Authorization	Project Phase	Purpose	Additional Information
<b>Food Premises Permit</b> Food Premises Regulation: <a href="http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_210_99">www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/11_210_99</a>	Construction	Required prior to opening a food premises	In British Columbia, the Food Premises Regulation is the governing legal document for all food handling and operations for the public. Both the food premises operator and local health authority have their respective roles and responsibilities for ensuring that the requirements of that regulation are met. The ultimate goal is to ensure that the public receives safe, wholesome food.
<b>Refuse Permit</b> <a href="#">Environmental Management Act</a>	Construction	Required for solid waste from camps >100 persons.	The <i>Environmental Management Act</i> prohibits the discharge of waste from specified industries, trades, businesses, operations or activities to the environment unless the appropriate authorization has been obtained.
<b>Fuel Storage Registration under the Environmental Management Act – Petroleum Storage and Distribution Facilities Storm Water Regulation</b> <a href="#">Environmental Management Act: Petroleum Storage and Distribution Facilities Storm Water Regulation</a> <a href="#">BC Fire Code</a> <a href="#">Environmental Management Act: Spill Reporting Regulation</a>	Construction	Required to store fuel	Any petroleum storage facility that has a cumulative storage capacity over 100,000L, occupies a location for more than 180 consecutive days and is NOT a part of a retail service station is required to register. The regulation also outlines requirements for oil water separator systems and effluent quality. The B.C. Fire Code has separate requirements that must also be adhered to.

<b>Effluent Discharge Permit Waste</b>  Discharge Regulation: <a href="http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/50_320_2004">www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/50_320_2004</a>	Construction	Required to discharge effluent into the environment	<a href="#">Waste Discharge Regulation Implementation Guide</a> <a href="#">Waste Discharge Authorizations</a>
Air Discharge Permit  Waste Discharge Regulation: <a href="http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/50_320_2004">www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/50_320_2004</a>	Construction	Required to discharge air contaminants into the environment, e.g. Incinerator for camps serving >100 persons	<a href="#">Waste Discharge Regulation Implementation Guide</a> <a href="#">Waste Discharge Authorizations</a>
<i>Note: Historically the Mineral Reserve Tenure has been used to prevent mining claims from being staked in or near a project, not commonly used since 2009. Details on Mineral Reserve Tenure are below.</i>			
<b>Mineral Reserve Tenure</b>  Mineral Tenures Act: <a href="http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96292_01">www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/00_96292_01</a>	Investigative to Primary Permitting	Required to prevent mining claims from being staked in or near a project. If claims have already been staked, proponents must consult claim holders, regardless of whether claims are active or inactive.	There is no set timeline for the establishment of a reserve. The length of time it may take from the submission of a request to a decision on whether to establish a reserve will depend on both the complexity of the request and its relative priority with regard to interests of the Province.  <a href="#">Application Requirements</a>



A typical 100 megawatt (MW) wind energy project will produce 306,600 megawatt hours (MWh) of green energy annually and would displace approximately 215,000 tonnes of carbon dioxide, the equivalent of taking 45,000 cars off the road each year.

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## Chapter 7: Windpower Projects

BC has some of the best wind resources in Canada. Wind generated power is clean, renewable, proven and cost competitive. Modern wind turbines convert wind into electricity. Wind turbines sit atop towers so that the blades of the turbine are free of obstacles and take advantage of higher and more constant wind speeds. When the blades turn in the wind the mechanical power is used to turn an electrical generator. Cables carry this electrical current to transmission lines that then carry it to homes and businesses. The modern commercial scale onshore wind turbine typically stands 70 to 138 meters tall, with the three blades each 35 to 45 meters in length. A 2 MW turbine can generate the equivalent annual power usage of over 500 B.C. homes. The most economical and environmentally responsible way of generating wind energy is to develop wind projects with multiple wind turbines that use a single transmission line right-of-way; providing more power with a smaller environmental footprint.

### How to Use This Chapter

This chapter includes information that is specific to the windpower program and is more detailed in nature than what was provided in previous chapters. In this chapter you will find the following:

- Information on social and environmental management concerns associated with windpower development
- Information on Federal triggers for windpower projects
- A summary table of common authorizations for windpower projects, sorted by project phase
- Detailed information on project authorizations, sorted by agency



*Quality Wind Power Project*

### Special Considerations for Windpower Projects

#### **Management Concerns for Windpower Development**

A major management concern with wind farm projects is the mortality of resident and especially migratory birds and bats. In coastal regions, the potential mortality of marbled murrelets is a major concern while in the interior sandhill cranes and rare bats are example species of concern.

The siting of wind farms and associated infrastructure (transmission lines and access roads) in sensitive ecosystems (e.g., alpine and wetlands) is also a significant management issue, as is the fragmentation of Ungulate Winter Ranges and Wildlife Habitat Areas.

Other management concerns include:

- Sound impacts to nearby residences.
- Direct bird mortality/electrocution from striking transmission lines.
- Clearing of vegetation during the bird nesting season.

- Habitat loss and fragmentation of wildlife habitat, especially for red/blue and SARA listed wildlife.
- Disturbance of wildlife from construction activities (e.g., blasting during eagle/heron nesting season leading to nest abandonment).
- Destruction of red/blue and SARA listed plant species and plant associations.
- Increased access by public to wilderness areas, potentially resulting in increased hunting/poaching activity, and disturbance to wildlife.
- Increased access leading to perturbations to sensitive ecosystems (especially bogs) and increased sediment and erosion from off-road use of 4 X 4s, ATVs and dirt bikes.
- Loss of riparian vegetation and fish habitat from construction of stream crossing for access roads and transmission lines.
- Potential changes to hydrologic regime when building wind farms and associated roads on sheet bogs.
- Potential exposure of metal leaching and acid rock drainage.
- Visual impacts to nearby parks and protected areas.
- Various construction impacts such as fuel spills

Proponents should consider the management concerns listed above (and others that may be raised by the project review teams) and be prepared to address them in their project Development Plan.

### ***Requirements for Offshore Windpower Projects***

Offshore windpower projects will have combined requirements of windpower and ocean energy. Please refer to both chapters if you are developing an offshore wind farm.

### ***Acoustic Requirements***

Information on best management practices and policies relating to acoustic requirements for windpower projects can be found in the following documents:

1. [Best Practice for Wind Power Project Acoustic Assessment](#) British Columbia 2012 (Ministry of Forests, Lands and Natural Resource Operations; Ministry of Energy, Mines and Natural Gas; Environmental Assessment Office)
2. [Land Procedure - Acoustic Assessments for Wind Power Projects](#)

## **Working with Federal Agencies**

### ***Fisheries and Oceans Canada***

Fisheries and Oceans Canada's (DFO) Pacific Region Habitat Management Program is responsible for protecting and conserving fish and fish habitat through administration of the *Fisheries Act*. If you are proposing a windpower project, it is recommended that you visit DFO Pacific Region's "[projects near water](#)" website which will assist you in planning work or activities near water. DFO has developed a multi-step process to help you comply with these requirements. This process involves evaluating your project for potentially harmful impacts to fish and fish habitat.

### ***Migratory Birds Convention Act and Regulations***

The *Migratory Birds Convention Act* prohibits the unauthorized taking or killing of migratory birds, their nests and eggs, and the deposition of harmful substances in areas frequented by migratory birds. In general, the Environmental Assessment (EA) report should consider impacts to migratory birds and their habitats, and propose measures to mitigate adverse environmental effects. Project-related impacts have the potential to occur during construction, operation, and/or decommissioning.

[Environment Canada is responsible for the protection of migratory birds](#)

### ***Navigation Protection Program /Transport Canada***

Windpower projects have the potential to affect navigation on waterways through the placement of project components such as towers in navigable waters. The installation of measuring devices (e.g. anemometers), bridges along access roads, and cable or transmission line crossings associated with windpower projects also have the potential to affect navigation.

The Navigation Protection Program reviews windpower energy project proposals to determine if they require approval under the NPA. Approval under the NPA is required for any works placed on, over, under, through or across navigable waters that is on the List of Scheduled Waters. The List of Scheduled Waters lists those navigable waters for which regulatory approval is required for works that risk a substantial interference with navigation. Determination of navigability is made by Transport Canada's Navigation Protection Program Officers only when an application has been received.

For more information related to requirements for NPA reviews you may visit the [Navigation Protection Program website](#).

The requirement for an Approval under the NPA triggers the requirement for Transport Canada, as a responsible authority, to conduct an Environmental Assessment under the *Canadian Environmental Assessment Act*, 2012 (CEAA 2012).

### ***Air Safety***

Transport Canada's Aerodromes and Air Navigation Branch is responsible for the regulatory program for aerodromes and air navigation services in Canada. Among other responsibilities, this branch of Transport Canada reviews proposed projects to determine whether lighting or marking of structures such as antennas, towers, cable crossings, and buildings is required to meet standards for air safety.

Transport Canada's Civil Aviation Branches are responsible for the regulatory program for aerodromes and air navigation services in Canada. Among other responsibilities, this branch of Transport Canada reviews proposed projects to determine whether lighting or marking of structures such as antennas, towers, cable crossings, and buildings is required to meet standards for air safety.

To initiate Transport Canada's air safety review, proponents should contact [Transport Canada](#) to indicate where potential obstructions and other works will be located. TC reviews proponents' plans, determines lighting and/or marking requirements, and forwards its decision to applicants.



Once received, a review by the Transport Canada's Civil Aviation Branches will be initiated to determine any lighting and/or marking requirements. These requirements, once established, are then forwarded to the proponent. Proponents should be prepared to make arrangements to discuss lighting and marking options with Transport Canada officials so that details of potential effects on air safety and proposed marking and lighting strategies may be included in the project Development Plan.

In some cases, lighting and/or marking of structures required by Transport Canada for air safety purposes can cause potentially adverse effects on other valued ecosystem components such as migratory birds. In such cases, the lighting/marketing requirements and measures required to mitigate these effects will be discussed by the proponent, Transport Canada and the federal department that has raised the concern so a resolution can be reached.

Nav Canada is the world's first fully privatized civil air navigation services provider, facilitating the safe movement of aircraft in Canadian airspace. Nav Canada's Land Use Program provides direction and guidance with regard to land uses near airports and navigation installations: [www.navcanada.ca/en/products-and-services/Pages/land-use-program.aspx](http://www.navcanada.ca/en/products-and-services/Pages/land-use-program.aspx)

The Land Use Submission form is used by Nav Canada to evaluate air traffic safety concerns related to installation of industrial features, such as wind turbines, on the land base: [www.navcanada.ca/EN/products-and-services/Forms/Land-Use-Submission-Form-EN.doc](http://www.navcanada.ca/EN/products-and-services/Forms/Land-Use-Submission-Form-EN.doc)

## Windpower Common Authorizations - Quick View:

<i>Land Act</i>	<i>Water Act</i>	<i>Forest Act Forest Practices Code Act Forest and Range Practices Act</i>	<i>Wildlife Act</i>	<i>Heritage Conservation Act</i>	<i>Transportation Act</i>	<i>Miscellaneous Permits</i>	<i>BC/Federal Environmental Assessment (if applicable)</i>
<b>INVESTIGATIVE PHASE</b>							
Investigative Licence of Occupation		Occupant Licence to Cut or Free Use Permit for investigative area	Wildlife Sundry Permits	Inspection/ Investigative/ Site Alteration			
<b>PRIMARY PROJECT PERMITTING (Development Plan Approved)</b>							
Multi-Tenure Instrument (MTI) -General Area Licence of Occupation		Occupant Licence to Cut for project footprint*					EA Certificate & required Federal Permits. EAC issued before provincial authorizations.
<b>PROJECT CONSTRUCTION &amp; SECONDARY PERMITTING</b>							
MTI - Licence of Occupation for quarry purposes MTI - Licence of Occupation for communication site MTI – Licence of Occupation for Workcamp (General Industrial)	S. 9 Notification or Approval For Changes In or about a Stream (e.g. roads, bridges) S.8 Approval for short-term water use (e.g. concrete batching)	Third Party Road Use Agreement* Works Permit* Road Use Permit* Special Use Permit for road access*		Construction level Site Alteration Permit	Access Permits within Highway ROW* Utility Permit within Highway ROW*	Food Premises Permit Refuse Permit Fuel Storage Permit Effluent Discharge Permit Air Discharge Permit	
<b>OPERATIONS</b>							
MTI – Intensive Use Areas – LoO or Lease MTI – Extensive Use Areas - LoO MTI - Transmission line – LoO or Stat ROW MTI - Roads - LoO MTI – Substation - Crown Grant							

## Windpower Common Authorizations - Details

### Land Act Authorizations

Access to Crown land requires a land tenure under the Land Act. Over the course of waterpower project investigation and development, FLNRO issues various types of Crown land tenures.

Applicable legislation and policy:

- [Land Act](#)
- [Wind Power Projects Policy](#)

Authorization Type	Project Phase	Purpose	Additional Information
<b>Investigative Licence</b>	Investigative	<p>Required for access to Crown land for appraisals, inspections, analyses, inventories, surveys or other investigations of Crown land or its natural resources.</p> <p>The tenure holder must permit public access to the area without interference, and must recognize that overlapping and layering of tenures may be authorized by government.</p> <p>The maximum term for an investigative licence is five years with the possibility of a one-time replacement. The maximum size for a tenure area is 5000 ha.</p>	<p>By obtaining an investigative licence proponents may:</p> <ul style="list-style-type: none"> <li>• carry out research to determine the parameters of a project;</li> <li>• complete field studies to inform the project Development Plan and/or EA Application;</li> <li>• determine how much land is needed for project components and facilitate tenuring for a smaller area.</li> </ul> <p><a href="#">Application Requirements</a></p> <p>Annual rental of \$500 per year</p>

<b>Multi Tenure Instrument - General Area Licence of Occupation</b>	Primary Permitting	<p>Required for the footprint of all permanent improvements (powerhouse, penstock, intake, etc.) as well as all temporary construction areas such as laydown &amp; spoil areas.</p> <p>The Multi Tenure Instrument (MTI) is the preferred tenure document for CEPs in development and operation. It is one overarching document for the project. Individual component tenures become schedules attached to this main document.</p> <p>The GALOO schedule will be issued over the broad polygon area to allow for the construction of improvements prior to survey and to allow for adjustments in the final locations of improvements due to final engineering. The term is usually sufficient to allow for construction up to the Commercial Operation Date.</p>	<p>The GALOO enables the proponent to:</p> <ul style="list-style-type: none"> <li>• construct all project components</li> <li>• have a secure tenure for the 'appurtenant land' for the project Water Licence</li> </ul> <p>As per the Waterpower Policy, upon completion of construction, the tenure area will be reduced to reflect only what is required for project operation. At that time, the GALOO will be converted into individual Project operation phase tenures (i.e. power house site, penstock, transmission line, etc.), and each project component will require an individual conversion fee as per the Miscellaneous Fees Regulation (50% of the application fee for that program area). As part of the tenure conversions, the term will be changed to match the term of the Water Licence (WL standard term is 40 years).</p> <p><a href="#">Development Plan Information Requirements</a></p> <p><a href="#">Pricing as per Utilities Policy</a></p>
<b>MTI - Licence of Occupation for quarry purposes</b>	Construction	<p>If applicable, a licence of occupation for aggregate purposes will be required in addition to the General Area Licence of Occupation.</p>	<p>The aggregate LoO will enable the proponent to extract quarry materials to build project components.</p> <p>In addition to applying for the LoO, a Notice of Work application may need to be filed with the MEM.</p> <p>Quarry information to be included in the project Development Plan.</p> <p><a href="#">Aggregate &amp; Quarry Materials Policy</a></p>
<b>MTI - Licence of Occupation for Communications Site</b>	Construction	<p>If required, a licence of occupation for communication site purposes will be required in addition to the General Area Licence of Occupation.</p>	<p>Communications site information to be included in the project Development Plan.</p> <p><a href="#">Communications Site Policy</a></p>

<b>MTI – Licence of Occupation – General Industrial</b>	Construction	Area required for workcamp in remote locations.	<a href="#">General Industrial Policy</a>
<b>MTI – Licence of Occupation or Lease – Intensive Use Area</b>	Operations	A licence of occupation or lease may be issued for the turbine sites. A legal survey will be required for the lease at the applicant's expense.	The intensive sites will have to be delineated from the extensive use area as the rental rate for intensive use sites is calculated separately. <a href="#">Pricing as per Utilities Policy</a>
<b>MTI – Licence of Occupation – Extensive Use Area</b>	Operations	A licence of occupation may be issued for the broad polygon-shaped area surrounding the turbines sites.	<a href="#">Pricing as per Utilities Policy</a>
<b>MTI – Statutory Right of Way – Transmission line</b>	Operations	Tenure conversion for linear uses of Crown land for communication, energy production, and utility developments. The tenure holder is granted a legal right of passage over the land for a specific purpose. A legal survey will be required at the applicant's expense to define the tenured area.	Once construction of the works has been completed and legal surveys have been completed for each component, various long-term tenures will be issued for the components. For example, the penstock and the transmission line will be converted to a right-of-way. Transmission line information to be included in the project Development Plan. <a href="#">Pricing as per Utilities Policy</a>
<b>MTI – Licence of Occupation – Roadways</b>	Operations	Tenure conversion for a licence of occupation for roads and bridges to authorize long term access to the project site. Note that <i>Land Act</i> roads require additional Section 9 Water Act authorizations for stream crossings.	Roadways information to be included in the project Development Plan. <a href="#">Roadways Policy</a>
<b>MTI – Crown Grant – substation</b>	Operations	BC Hydro may require a direct sale for land associated with the substation for connection to the grid.	For a Crown grant, the land will be priced at the appraised land value.

## Water Sustainability Act Authorizations

Water Sustainability Act authorizations may be required during project construction and operations.

Applicable legislation and policy:

- [Water Sustainability Act](#)
- [Water Regulation](#)

Authorization Type	Project Phase	Purpose	Additional Information
<b>Section 9 Approval or Notification for Changes in or about a Stream</b>	Construction	Required for changes in and about a stream. For waterpower projects, these authorizations are typically related to stream crossings for road access. Notifications are for simple crossings and Approvals are required for work more complex in nature and that may result in more impact to the stream.	The proponent must address channel stability, and flood levels, as well as fish and wildlife resource values as appropriate. An application for an Approval is typically referred to other regulatory agencies such as Resource Management Division of the FLNRO and Fisheries and Oceans Canada (DFO) for comment during the adjudication process. Allow appropriate time for processing.  <a href="#">Water Licences &amp; Approvals</a>
<b>Section 8 Approval for Short-Term Water Use</b>	Construction	Required for diversion of water for short-term use. For waterpower projects, these authorizations are typically related to water use for concrete batching and road maintenance.	The proponent must have an interest in the land in order to apply for the Section 8 (e.g. land or road tenure). An application for an Approval is typically referred to other regulatory agencies such as Resource Management Division of the FLNRO and Fisheries and Oceans Canada (DFO) for comment during the adjudication process. Allow appropriate time for processing.  <a href="#">Apply for a Water Use Approval</a>



## Forest Act Authorizations

Most waterpower projects require the removal of Crown timber and the use of forestry roads, which fall under various pieces of forestry legislation. These Acts and associated regulations specify terms under which permission can be granted to allow proponents to cut, damage, destroy and remove Crown timber. The use of forest service and other roads is administered through these Acts and overseen by the Province, as is the modification of forest roads to construct and install project works, components and infrastructure such as bridges and culverts.

Authorization Type	Project Phase	Purpose	Additional Information
<b>Free Use Permit</b> <a href="#">Forest Act, Part 3, Division 9</a>	Investigative Phase	Required for cutting and removing < 50 m3 of merchantable timber	Contact the local FrontCounter BC or District Office for further information.
<b>Occupant Licence to Cut</b> <a href="#">Forests and Range Practices Act</a>	Primary Permitting	Required for cutting and removing trees from the entire project footprint.	Please note that in many cases Timber Cruising cannot be done during winter months. See website for Cruising Manual, Interior Appraisal Manual, and Coast Appraisal Manual. <a href="#">Cruising and Appraisal Manuals</a> Application Requirements: Contact the local FrontCounter BC or District Office for further information.
<b>Special Use Permit</b> <a href="#">Forests Practices Code of British Columbia Act</a> <a href="#">Provincial Forest Use Regulation</a>	Primary Permitting or Construction	Required to construct a new road or to use an existing road to access CEP area. Note that if road is already tenured to another party, the proponent will need to enter into a Third Party Road User's Agreement – see section below.  Note that SUPs do not require additional Section 9 <i>Water Act</i> authorizations for stream crossings.	<a href="#">Engineering Manual</a> Road Safety Guidelines: Contact the local District Office for further information. <a href="#">Application Requirements (Special Use Permit Administration Guide)</a>
<b>Third Party Road Use Agreement</b> <a href="#">Forest Act</a>	Primary Permitting or Construction	Allows the holder to use the road in situations where an industrial user already has a Road Permit for Non-Forest Service Roads.	Application Requirements: Contact the local FrontCounter BC or District Office for further information.

<b>Road Use Permit</b> <a href="#">Forest Act</a>	Primary Permitting or Construction	<p>Forest Service Roads typically have a primary road user that holds a Road Use Permit (RUP). Additional road users must apply for a Road Use Permit and will be required to enter into a maintenance agreement with the primary holder.</p> <p>The RUP authorizes the holder to use a Forest Service Road for industrial purposes, construct/modify the road, including the replacement and installation of road infrastructure.</p>	<p>Road Use Permit Application: <a href="http://www.for.gov.bc.ca/hth/engineering/permits_documents.htm">http://www.for.gov.bc.ca/hth/engineering/permits_documents.htm</a></p> <p>FSR Permits and Agreement Procedures: <a href="http://www.for.gov.bc.ca/dck/Engineering/FSR%20Permits%20and%20Agreements.pdf">http://www.for.gov.bc.ca/dck/Engineering/FSR%20Permits%20and%20Agreements.pdf</a></p>
<b>Works Permit</b> <p>Forest Service Road Use Regulation: <a href="http://www.for.gov.bc.ca/tasb/legsregs/arch/ive/fpc/fpcaregs/fsroadus/fsrur.htm">www.for.gov.bc.ca/tasb/legsregs/arch/ive/fpc/fpcaregs/fsroadus/fsrur.htm</a></p> <p>Works Permit (NRS103) – “Authorization to Construct Works within a Forest Service Road Right-of-Way for a Purpose other than the Passage of Vehicular or Pedestrian Traffic” <a href="http://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/NRS103.docx">www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/NRS103.docx</a></p>	Primary Permitting or Construction	<p>Allows the holder to carry out works within a Forest Service road right-of-way to install penstocks, transmission lines, and underground utilities and undertake other authorized project-related (facilities) activities.</p>	<p>“Clean Energy Projects – Requirements for Planning, Design and Construction to Protect Forest Roads or Timber Tenures” <a href="https://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/CEP-Planning-Design-Construction-Requirements.pdf">https://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/publications_reports/CEP-Planning-Design-Construction-Requirements.pdf</a></p> <p>FSR Permits and Agreement Procedures: <a href="https://www.for.gov.bc.ca/dck/Engineering/FSR%20Permits%20and%20Agreements.pdf">https://www.for.gov.bc.ca/dck/Engineering/FSR%20Permits%20and%20Agreements.pdf</a></p>

### Forest Practices Code of British Columbia Fish-stream Crossing Guidebook

The Forest Practices Code of British Columbia Fish-stream Crossing Guidebook is the standard DFO applies to fish-stream crossings for forestry and other industry sectors as it reduces the high potential for unauthorized HADD of fish habitat. The [Guidebook](#) can be found online. Within this document is a decision making matrix for selecting acceptable new and replacement stream crossing structures. The Guidebook explains DFO’s review process including which types of structures would be subject to either agency review and/or DFO Authorization.

## Wildlife Act Authorizations

The act was created to help ensure the wise management of our wildlife resources and minimize the negative impacts of human activities. Whenever and wherever the needs of wildlife must be balanced with the needs of people, the *Wildlife Act* helps forge workable solutions.

Applicable legislation:

- [Wildlife Act](#)

Authorization Type	Project Phase	Purpose	Additional Information
<b>Wildlife Sundry Permits</b>	Investigative	Required for capture and/or collect specimens for scientific and other non-recreational purposes.	<a href="#">Wildlife Sundry Permits Application Requirements</a>

## Heritage Conservation Act Authorizations

British Columbia's archaeological sites are protected under the *Heritage Conservation Act*. Archaeological sites are protected through designation as "Provincial heritage sites", or through automatic protection by virtue of being of particular historic or archaeological value. Protected archaeological sites may not be altered, i.e. changed in any manner, without a permit issued by the Minister or designate.

Authorization Type	Project Phase	Purpose	Additional Information
Inspection/ Investigative/site Alteration Permit <a href="#">Heritage Conservation Act</a>	Investigative phase	<p>The purpose of a heritage inspection is to assess the archaeological significance of land or other property.</p> <p>In this regard, the inspection determines the presence of archaeological sites which warrant protection, or are already protected, under the HCA.</p> <p>The site alteration permit authorizes the removal of residual archaeological deposits once the inspection and investigation are completed.</p>	<p>The provisions of the HCA apply whether sites are located on public or private land.</p> <p><a href="#">Permits and Permitting</a></p> <p><a href="#">Alteration Permit Requirements</a></p> <p><a href="#">Applicaition for Alteration Permit</a></p>

## Transportation Act Authorizations

Ministry of Transportation and Infrastructure (MoTI) issues permits granting proponents permission to conduct work on and around B.C. highways and rights-of-way. No work or activity is allowed on or near a highway or highway right of way until obtaining a valid permit is secured.

Applicable legislation and policy:

- [Transportation Act](#)
- [Utilities Policy](#)

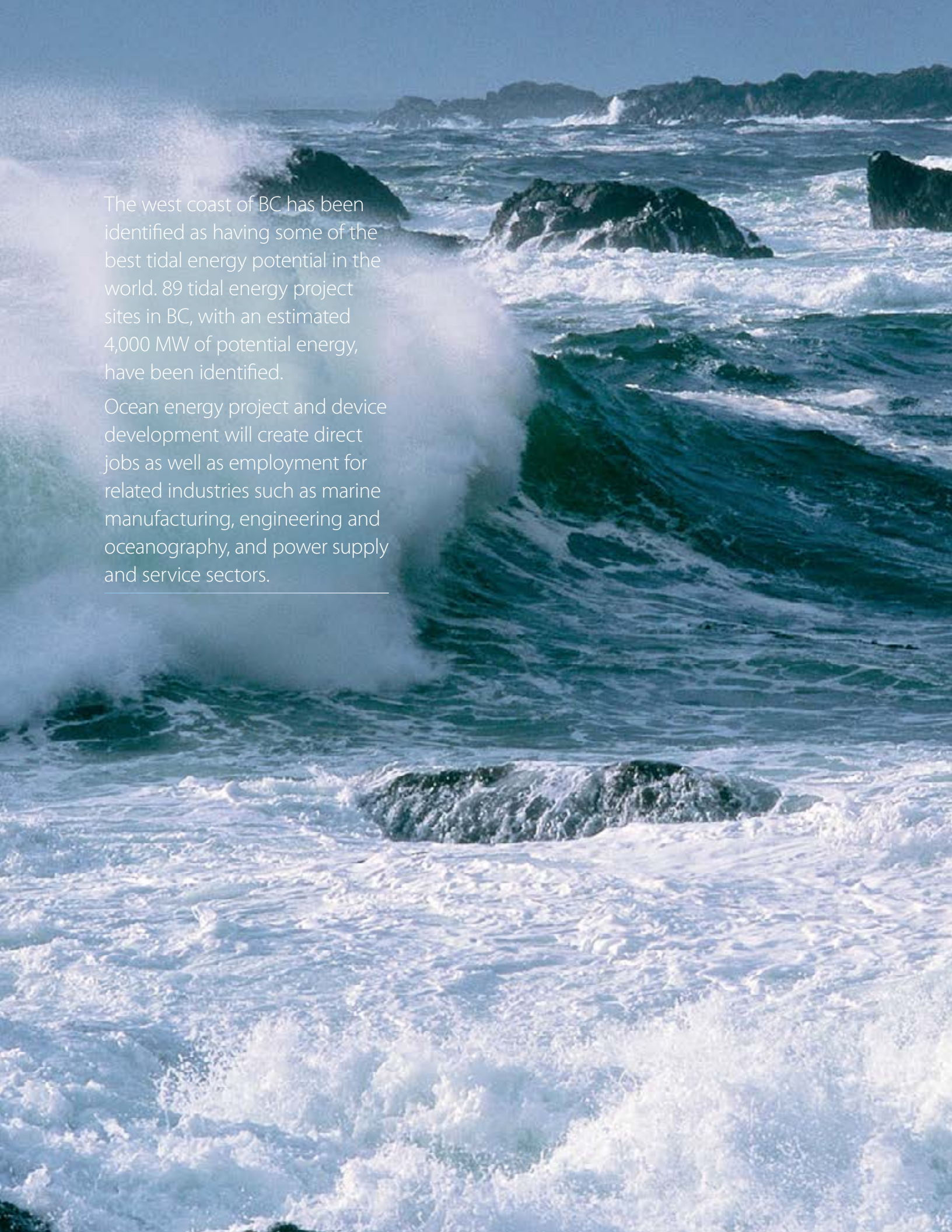
Authorization Type	Project Phase	Purpose	Additional Information
<b>Access Permit</b>	Construction	Required to construct roads that originate off any road maintained by the MoTI.	Although owners of land have certain rights of access under the <i>Land Title Act</i> , highway users have certain rights of safe and efficient travel. Ministry staff considers these competing interests when evaluating access permits, in accordance with provincial legislation and case law.  <a href="#">Access Permit Requirements</a>
<b>Utility Permit</b>	Construction	Required to construct and maintain power lines within existing MoTI highway right-of-way.	Anyone wishing to construct utilities within the provincial highway right-of-way must obtain the approval of the Ministry of Transportation. Utility permits cover the following services and activities: pipelines; water and sewer lines; overhead or underground power and communication lines; wireless communications; trenching, boring and jacking; installations on or near structures.  <a href="#">Permitting Requirements</a>
<b>Commercial Transportation Permit</b>	Construction	A commercial vehicle permit is required for a vehicle and/or load in the following situations: to operate a vehicle and/or load on a provincial road or highway where the size or weights exceed legal; a non-resident commercial vehicle needing to operate in B.C. for a single trip; a non-resident commercial vehicle travelling into or through B.C. that is required to pay a fuel tax.	Commercial Vehicle Safety and Enforcement: <a href="http://www.th.gov.bc.ca/cvse/tps/index.htm">www.th.gov.bc.ca/cvse/tps/index.htm</a>

## Miscellaneous Permits Related to Project Construction

Authorization	Project Phase	Purpose	Additional Information
<b>Food Premises Permit</b> <a href="#">Food Premises Regulation</a>	Construction	Required prior to opening a food premises	In British Columbia, the Food Premises Regulation is the governing legal document for all food handling and operations for the public. Both the food premises operator and local health authority have their respective roles and responsibilities for ensuring that the requirements of that regulation are met. The ultimate goal is to ensure that the public receives safe, wholesome food.
<b>Refuse Permit</b> <a href="#">Environmental Management Act</a>	Construction	Required for solid waste from camps >100 persons.	The <i>Environmental Management Act</i> prohibits the discharge of waste from specified industries, trades, businesses, operations or activities to the environment unless the appropriate authorization has been obtained.
<b>Fuel Storage Registration under the Environmental Management Act – Petroleum Storage and Distribution Facilities Storm Water Regulation</b> <a href="#">Environmental Management Act: Petroleum Storage and Distribution Facilities Storm Water Regulation</a> <a href="#">BC Fire Code</a> <a href="#">Environmental Management Act: Spill Reporting Regulation</a>	Construction	Required to store fuel	Any petroleum storage facility that has a cumulative storage capacity over 100,000 L, occupies a location for more than 180 consecutive days and is NOT a part of a retail service station is required to register. The regulation also outlines requirements for oil water separator systems and effluent quality. The B.C. Fire Code has separate requirements that must also be adhered to.

<b>Effluent Discharge Permit</b> <a href="#">Waste Discharge Regulation</a>	Construction	Required to discharge effluent into the environment	<a href="#">Waste Discharge Regulation Implementation Guide</a> <a href="#">Waste Discharge Authorizations</a>
<b>Air Discharge Permit</b> <a href="#">Waste Discharge Regulation</a>	Construction	Required to discharge air contaminants into the environment, e.g. Incinerator for camps serving >100 persons	<a href="#">Waste Discharge Regulation Implementation Guide</a> <a href="#">Waste Discharge Authorizations</a>
<i>Note: Historically the Mineral Reserve Tenure has been used to prevent mining claims from being staked in or near a project, not commonly used since 2009. Details on Mineral Reserve Tenure are below.</i>			
<b>Mineral Reserve Tenure</b> <a href="#">Mineral Tenures Act</a>	Investigative to Primary Permitting	Required to prevent mining claims from being staked in or near a project. If claims have already been staked, proponents must consult claim holders, regardless of whether claims are active or inactive.	There is no set timeline for the establishment of a reserve. The length of time it may take from the submission of a request to a decision on whether to establish a reserve will depend on both the complexity of the request and its relative priority with regard to interests of the Province. <a href="#">Application Requirements</a>





The west coast of BC has been identified as having some of the best tidal energy potential in the world. 89 tidal energy project sites in BC, with an estimated 4,000 MW of potential energy, have been identified.

Ocean energy project and device development will create direct jobs as well as employment for related industries such as marine manufacturing, engineering and oceanography, and power supply and service sectors.

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## Chapter 8: Ocean Energy Projects

Ocean energy power projects using modern technologies have only recently begun to appear as demonstration and pilot initiatives. The ocean energy sector is at the early stages of development relative to wind and waterpower. Ocean energy is the catch-all phrase for the energy that can be harnessed from the ocean's tides, currents and waves. The power of the ocean can be seen along British Columbia's coast.

### Wave Energy

Waves are created by ocean winds and travel thousands of kilometers across the ocean before reaching the coast. Waves have very high energy densities relative to wind densities. Wave energy represents a significant potential source of clean and renewable electricity. The power potential of a wave is determined by wave height, wave speed, wave length, and water density. Because waves are so energy dense, substantial amounts of electricity may be generated at relatively small sites.

### Tidal Energy

Tidal energy utilizes the flow of water produced by the rise and fall of the tides to generate electricity. Modern tidal technology is focused on the harnessing of tidal "streams" or "currents". Tidal energy resources are based on the moon's gravitational pull and sub-sea geography and so are not affected by changes in climate, weather patterns or sea levels. Tidal streams or currents are found in regions with high tidal ranges and natural constrictions such as straights, narrows or fjords. Tidal energy is produced twice daily with the tides and is predictable years in advance. Once established, tidal projects have low operating costs.

### How to Use This Chapter

This chapter includes information that is specific to the ocean energy program and is more detailed in nature than what was provided in previous chapters. In this chapter you will find the following:

- Special considerations for the development of ocean energy projects
- Information on Federal triggers for ocean energy projects
- A summary table of common authorizations for ocean energy projects, sorted by project phase
- Detailed information on project authorizations, sorted by agency



*A tidal energy turbine being installed at Race Rocks.*

## Special Considerations for Ocean Energy Projects

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As ocean energy projects are developed within saltwater, working with Federal Agencies such as DFO and Transport Canada will be key to project approval.

Specific management concerns include:

- DFO Species at Risk – including orca whales, etc. The proponent will need to mitigate to address concerns regarding risk of collision, halibut avoidance, sound levels, etc.
- Impacts that the technology will have on the environment (sea floor turbines and associated technologies), e.g., some technologies shut down the turbine when an animal of a specific size is detected.

Proponents should consider the management concerns listed above (and others that may be raised by the project review teams) and be prepared to address them in their project Development Plan.

## Working with Federal Agencies

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### ***Fisheries and Oceans Canada***

Fisheries and Oceans Canada's (DFO) Pacific Region Habitat Management Program is responsible for protecting and conserving fish and fish habitat through administration of the *Fisheries Act*. If you are proposing an ocean energy project, it is recommended that you visit DFO Pacific Region's "[projects near water](#)" website which will assist you in planning work or activities near water. DFO has developed a multi-step process to help you comply with these requirements. This process involves evaluating your project for potentially harmful impacts to fish and fish habitat.

The greater the risk of your project impacting fish or fish habitat, the more involved the project review process may be. If your project is likely to impact fish or fish habitat, more information, time, and effort will be required from you to support the project review process. You should make every effort to avoid any harmful alteration, disruption or destruction (HADD).

If impacts cannot be mitigated, a *Fisheries Act* authorization for the destruction of fish or HADD of fish habitat may be required. The Authorization process involves extensive time and effort by both you and DFO that may not be necessary if your project can avoid harmful impacts to fish or fish habitat. Prior to submitting to DFO, confirm that all redesign or relocate options and/or guidelines and planning tools have been considered to avoid or reduce negative impacts to fish or fish habitat. DFO will also be required to conduct an environmental review under CEAA prior to a decision on issuing the authorization.

### ***Navigation Protection Program /Transport Canada***

Ocean energy projects have the potential to affect navigation through the placement of project components such as subsurface cables, floating or seafloor mounted turbines directly within navigable waters. Land-based project components such as bridges along access roads, and cable or transmission line crossings also have the potential to affect navigation.

The Navigation Protection Program reviews ocean energy project proposals to determine if they require approval under the NPA. Approval under the NPA is required for any works placed on, over, under, through or across navigable waters that is on the List of Scheduled Waters. The List of Scheduled Waters lists those navigable waters for which regulatory approval is required for works that risk a substantial interference with navigation. Determination of navigability is made by Transport Canada's Navigation Protection Program Officers only when an application has been received.

For more information related to requirements for NPA reviews you may visit the Navigation Protection Program website at: [www.tc.gc.ca/eng/programs-621.html](http://www.tc.gc.ca/eng/programs-621.html).

The requirement for an Approval under the NPA triggers the requirement for Transport Canada, as a responsible authority, to conduct an Environmental Assessment under the *Canadian Environmental Assessment Act*, 2012 (CEAA 2012).

## Ocean Energy Common Authorizations - Quick View:

<i>Land Act</i>	<i>Water Act</i>	<i>Forest Act Forest Practices Code Act Forest and Range Practices Act</i>	<i>Wildlife Act</i>	<i>Heritage Conservation Act</i>	<i>Transportation Act</i>	<i>Miscellaneous Permits</i>	<i>BC/Federal Environmental Assessment (if applicable)</i>
<b>INVESTIGATIVE PHASE</b>							
Investigative Licence of Occupation		Occupant Licence to Cut or Free Use Permit for investigative area	Wildlife Sundry Permits	Inspection/ Investigative/ Site Alteration Permit			
<b>PRIMARY PROJECT PERMITTING (Development Plan Approved)</b>							
Multi-Tenure Instrument (MTI) -General Area Licence of Occupation		Occupant Licence to Cut for project footprint*					EA Certificate & required Federal Permits. EAC issued before provincial authorizations.
<b>PROJECT CONSTRUCTION &amp; SECONDARY PERMITTING</b>							
MTI - Licence of Occupation for quarry purposes MTI - Licence of Occupation for communication site		Third Party Road Use Agreement * Works Permit* Road Use Permit* Special Use Permit for road access*		Construction level Site Alteration Permit	Access Permits within Highway ROW* Utility Permit within Highway ROW*	Food Premises Permit Refuse Permit Fuel Storage Permit Effluent Discharge Permit Air Discharge Permit	
<b>OPERATIONS</b>							
MTI – Intensive Use Areas – LoO or Lease MTI – Extensive Use Areas – LoO MTI - Transmission line – LoO or Stat ROW MTI - Roads – LoO							

Table Notes: \* - these permits may be considered primary or secondary authorizations depending on the project.

## Ocean Energy Common Authorizations - Details:

### Land Act Authorizations

Access to Crown land requires a land tenure under the *Land Act*. Over the course of waterpower project investigation and development, FLNRO issues various types of Crown land tenures.

Applicable legislation and policy:

- [Land Act](#)
- [Ocean Energy Projects Policy](#)

Authorization Type	Project Phase	Purpose	Additional Information
<b>Investigative Licence</b>	Investigative	<p>Required for access to Crown land for appraisals, inspections, analyses, inventories, surveys or other investigations of Crown land or its natural resources.</p> <p>The tenure holder must permit public access to the area without interference, and must recognize that overlapping and layering of tenures may be authorized by government.</p> <p>The maximum term for an investigative licence is five years with the possibility of a one-time replacement. The maximum size for a tenure area is 5000 ha.</p>	<p>By obtaining an investigative licence proponents may</p> <ul style="list-style-type: none"> <li>• carry out research to determine the parameters of a project;</li> <li>• complete field studies to inform the project Development Plan and/or EA Application;</li> <li>• determine how much land is needed for project components and facilitate tenuring for a smaller area.</li> </ul> <p><a href="#">Application Requirements</a></p> <p>Annual rental of \$500 per year</p>



<b>Multi Tenure Instrument - General Area Licence of Occupation</b>	Primary Permitting	<p>Required for the footprint of all permanent improvements (powerhouse, penstock, intake, etc.) as well as all temporary construction areas such as laydown &amp; spoil areas.</p> <p>The Multi Tenure Instrument (MTI) is the preferred tenure document for CEPs in development and operation. It is one overarching document for the project. Individual component tenures become schedules attached to this main document.</p> <p>The GALOO schedule will be issued over the broad polygon area to allow for the construction of improvements prior to survey and to allow for adjustments in the final locations of improvements due to final engineering. The term is usually sufficient to allow for construction up to the Commercial Operation Date.</p>	<p>The GALOO enables the proponent to:</p> <ul style="list-style-type: none"> <li>• construct all project components</li> <li>• have a secure tenure for the 'appurtenant land' for the project Water Licence</li> </ul> <p>As per the Waterpower Policy, upon completion of construction, the tenure area will be reduced to reflect only what is required for project operation. At that time, the GALOO will be converted into individual Project operation phase tenures (i.e. power house site, penstock, transmission line, etc.), and each project component will require an individual conversion fee as per the Miscellaneous Fees Regulation (50% of the application fee for that program area). As part of the tenure conversions, the term will be changed to match the term of the Water Licence (WL standard term is 40 years).</p> <p><a href="#">Development Plan Information Requirements</a></p> <p><a href="#">Pricing as per Utilities Policy</a></p>
<b>MTI - Licence of Occupation for quarry purposes</b>	Construction	If applicable, a licence of occupation for aggregate purposes will be required in addition to the General Area Licence of Occupation.	<p>The aggregate LoO will enable the proponent to extract quarry materials to build project components.</p> <p>In addition to applying for the LoO, a Notice of Work application may need to be filed with the MEM.</p> <p>Quarry information to be included in the project Development Plan.</p> <p><a href="#">Aggregate &amp; Quarry Materials Policy</a></p>
<b>MTI - Licence of Occupation for Communications Site</b>	Construction	If required, a licence of occupation for communication site purposes will be required in addition to the General Area Licence of Occupation.	<p>Communications site information to be included in the project Development Plan.</p> <p><a href="#">Communications Site Policy</a></p>
<b>MTI - Licence of Occupation - General Industrial</b>	Construction	Area required for workcamp in remote locations.	<a href="#">General Industrial Policy</a>

<b>MTI – Licence of Occupation or Lease – Intensive Use Area</b>	Operations	<p>A licence of occupation or lease may be issued for the turbine sites.</p> <p>A legal survey will be required for the lease at the applicant's expense.</p>	<p>The intensive sites will have to be delineated from the extensive use area as the rental rate for intensive use sites is calculated separately.</p> <p><a href="#">Pricing as per Utilities Policy</a></p>
<b>MTI - Licence of Occupation – Extensive Use Area</b>	Operations	<p>A licence of occupation may be issued for the broad polygon-shaped area surrounding the turbines sites.</p>	<p><a href="#">Pricing as per Utilities Policy</a></p>
<b>MTI - Statutory Right of Way - Transmission line</b>	Operations	<p>Tenure conversion for linear uses of Crown land for communication, energy production, and utility developments.</p> <p>The tenure holder is granted a legal right of passage over the land for a specific purpose.</p> <p>A legal survey will be required at the applicant's expense to define the tenured area.</p>	<p>Once construction of the works has been completed and legal surveys have been completed for each component, various long-term tenures will be issued for the components. For example, the penstock and the transmission line will be converted to a right-of-way.</p> <p>Transmission line information to be included in the project Development Plan.</p> <p><a href="#">Pricing as per Utilities Policy</a></p>
<b>MTI - Licence of Occupation - Roadways</b>	Operations	<p>Tenure conversion for a licence of occupation for roads and bridges to authorize long term access to the project site.</p> <p>Note that <i>Land Act</i> roads require additional Section 9 Water Act authorizations for stream crossings.</p>	<p>Roadways information to be included in the project Development Plan.</p> <p><a href="#">Roadways Policy</a></p>
<b>MTI – Crown Grant - substation</b>	Operations	<p>BC Hydro may require a direct sale for land associated with the substation for connection to the grid.</p>	<p>For a Crown grant, the land will be priced at the appraised land value.</p>

## Forest Act Authorizations

Most waterpower projects require the removal of Crown timber and the use of forestry roads, which fall under various pieces of forestry legislation. These Acts and associated regulations specify terms under which permission can be granted to allow proponents to cut, damage, destroy and remove Crown timber. The use of forest service and other roads is administered through these Acts and overseen by the Province, as is the modification of forest roads to construct and install project works, components and infrastructure such as bridges and culverts.

<b>Authorization Type</b>	<b>Project Phase</b>	<b>Purpose</b>	<b>Additional Information</b>
<b>Free Use Permit</b> <a href="#">Forest Act, Part 3, Division 9</a>	Investigative Phase	Required for cutting and removing < 50 m3 of merchantable timber	Contact the local FrontCounter BC or District Office for further information.
<b>Occupant Licence to Cut</b> <a href="#">Forests and Range Practices Act</a>	Primary Permitting	Required for cutting and removing trees from the entire project footprint.	Please note that in many cases Timber Cruising cannot be done during winter months. See website for Cruising Manual, Interior Appraisal Manual, and Coast Appraisal Manual. <a href="#">Cruising and Appraisal Manuals</a> Application Requirements: Contact the local FrontCounter BC or District Office for further information.
<b>Special Use Permit</b> <a href="#">Forests Practices Code of British Columbia Act</a> <a href="#">Provincial Forest Use Regulation</a>	Primary Permitting or Construction	Required to construct a new road or to use an existing road to access CEP area. Note that if road is already tenured to another party, the proponent will need to enter into a Third Party Road User's Agreement – see section below.  Note that SUPs do not require additional Section 9 <i>Water Act</i> authorizations for stream crossings.	<a href="#">Engineering Manual</a> Road Safety Guidelines: Contact the local District Office for further information. <a href="#">Application Requirements (Special Use Permit Administration Guide)</a>

<b>Road Use Permit</b> Forest Act: <a href="http://www.bclaws.ca/civix/document/id/complete/statreg/96157_08#part8">http://www.bclaws.ca/civix/document/id/complete/statreg/96157_08#part8</a>	Primary Permitting or Construction	Forest Service Roads typically have a primary road user that holds a Road Use Permit (RUP). Additional road users must apply for a Road Use Permit and will be required to enter into a maintenance agreement with the primary holder.  The RUP authorizes the holder to use a Forest Service Road for industrial purposes, construct/modify the road, including the replacement and installation of road infrastructure.	Road Use Permit Application: <a href="http://www.for.gov.bc.ca/hth/engineering/permits_documents.htm">http://www.for.gov.bc.ca/hth/engineering/permits_documents.htm</a>  <a href="#">FSR Permits and Agreement Procedures</a>
<b>Works Permit</b> Forest Service Road Use Regulation: <a href="https://www.for.gov.bc.ca/tasb/legsregs/archive/fpc/fpcaregs/fsroadus/fsrur.htm">https://www.for.gov.bc.ca/tasb/legsregs/archive/fpc/fpcaregs/fsroadus/fsrur.htm</a>	Primary Permitting or Construction	Allows the holder to carry out works within a Forest Service road right-of-way to install penstocks, transmission lines, and underground utilities and undertake other authorized project-related (facilities) activities.	<a href="#">Waterpower projects design criteria</a> for works that may impact Forest Roads or Timber Tenures  <a href="#">FSR Permits and Agreement Procedures</a>
Third Party Road Use Agreement <a href="#">Forest Act, Part 8</a>	Primary Permitting or Construction	Allows the holder to use the road in situations where an industrial user already has a Road Permit for Non-Forest Service Roads.	Application Requirements: Contact the local FrontCounter BC or District Office for further information.

### **Forest Practices Code of British Columbia Fish-stream Crossing Guidebook**

The Forest Practices Code of British Columbia Fish-stream Crossing Guidebook is the standard DFO applies to fish-stream crossings for forestry and other industry sectors as it reduces the high potential for unauthorized HADD of fish habitat. The Guidebook can be found at: [www.for.gov.bc.ca/hfp/Fish/Fish-Stream%20Crossing%20Web.pdf](http://www.for.gov.bc.ca/hfp/Fish/Fish-Stream%20Crossing%20Web.pdf). Within this document is a decision making matrix for selecting acceptable new and replacement stream crossing structures. The Guidebook explains DFO's review process including which types of structures would be subject to either agency review and/or DFO Authorization.

## Wildlife Act Authorizations

The act was created to help ensure the wise management of our wildlife resources and minimize the negative impacts of human activities. Whenever and wherever the needs of wildlife must be balanced with the needs of people, the *Wildlife Act* helps forge workable solutions.

Applicable legislation:

- [Wildlife Act](#)

Authorization Type	Project Phase	Purpose	Additional Information
Permit to Trap or Move Native Wildlife Wild life Sundry Permits	Investigative	Two basic types of permits may be granted. You can obtain permits that authorize you to conduct specific activities, or that exempt you from having to comply.	<a href="#">Wildlife Act Permit Information</a> <a href="#">Wild life Sundry Permits Application Requirements</a>

## Heritage Conservation Act Authorizations

British Columbia's archaeological sites are protected under the *Heritage Conservation Act*. Archaeological sites are protected through designation as "Provincial heritage sites", or through automatic protection by virtue of being of particular historic or archaeological value. Protected archaeological sites may not be altered, i.e. changed in any manner, without a permit issued by the Minister or designate.

Authorization Type	Project Phase	Purpose	Additional Information
Inspection/ Investigative/site Alteration Permit <a href="#">Heritage Conservation Act</a>	Investigative phase	<p>The purpose of a heritage inspection is to assess the archaeological significance of land or other property.</p> <p>In this regard, the inspection determines the presence of archaeological sites which warrant protection, or are already protected, under the HCA.</p> <p>The site alteration permit authorizes the removal of residual archaeological deposits once the inspection and investigation are completed.</p>	<p>The provisions of the HCA apply whether sites are located on public or private land.</p> <p><a href="#">Permits and Permitting</a> <a href="#">Alteration Permit Requirements</a> <a href="#">Applicaition for Alteration Permit</a></p>

## Transportation Act Authorizations

Ministry of Transportation and Infrastructure (MoTI) issues permits granting proponents permission to conduct work on and around B.C. highways and rights-of-way. No work or activity is allowed on or near a highway or highway right of way until obtaining a valid permit is secured.

Applicable legislation and policy:

- [Transportation Act](#)
- [Utilities Policy](#)

Authorization Type	Project Phase	Purpose	Additional Information
<b>Access Permit</b>	Construction	Required to construct roads that originate off any road maintained by the MoTI.	Although owners of land have certain rights of access under the <i>Land Title Act</i> , highway users have certain rights of safe and efficient travel. Ministry staff considers these competing interests when evaluating access permits, in accordance with provincial legislation and case law. <a href="#">Access Permit Requirements</a>
<b>Utility Permit</b>	Construction	Required to construct and maintain power lines within existing MoTI highway right-of-way.	Anyone wishing to construct utilities within the provincial highway right-of-way must obtain the approval of the Ministry of Transportation. Utility permits cover the following services and activities: pipelines; water and sewer lines; overhead or underground power and communication lines; wireless communications; trenching, boring and jacking; installations on or near structures <a href="#">Permitting Requirements</a>
<b>Commercial Transportation Permit</b>	Construction	A commercial vehicle permit is required for a vehicle and/or load in the following situations: to operate a vehicle and/or load on a provincial road or highway where the size or weights exceed legal; a non-resident commercial vehicle needing to operate in B.C. for a single trip; a non-resident commercial vehicle travelling into or through B.C. that is required to pay a fuel tax.	<a href="#">Commercial Vehicle Safety and Enforcement</a>

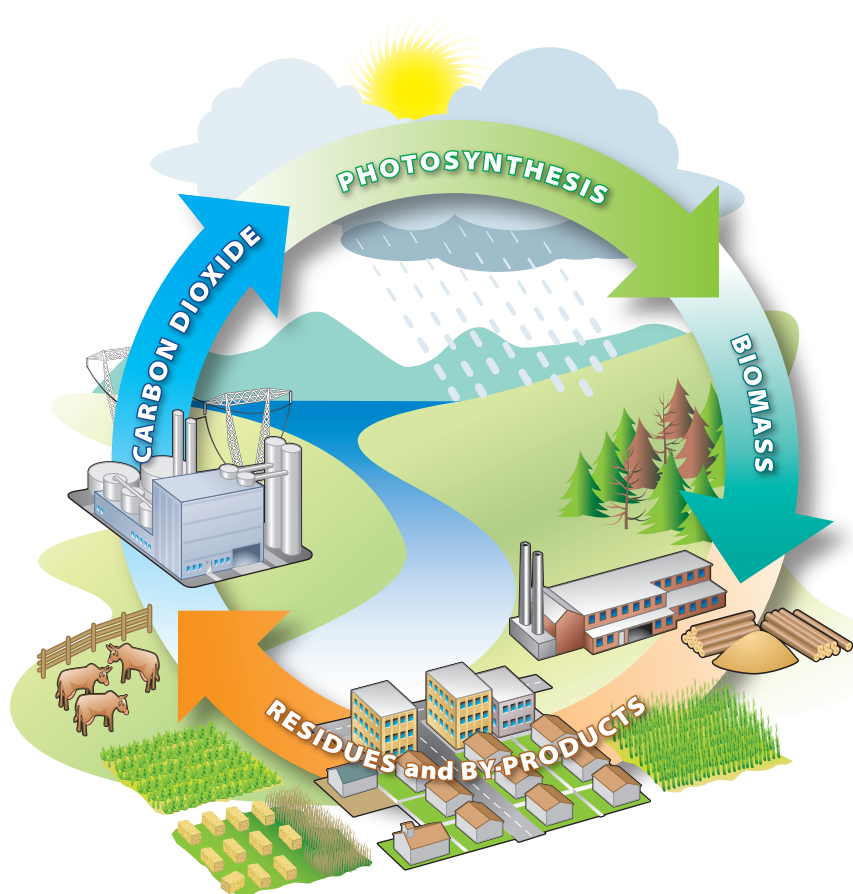


## Miscellaneous Permits Related to Project Construction

Authorization	Project Phase	Purpose	Additional Information
Food Premises Permit <a href="#">Food Premises Regulation</a>	Construction	Required prior to opening a food premises	In British Columbia, the Food Premises Regulation is the governing legal document for all food handling and operations for the public. Both the food premises operator and local health authority have their respective roles and responsibilities for ensuring that the requirements of that regulation are met. The ultimate goal is to ensure that the public receives safe, wholesome food.
Refuse Permit <a href="#">Environmental Management Act</a>	Construction	Required for solid waste from camps >100 persons.	The <i>Environmental Management Act</i> prohibits the discharge of waste from specified industries, trades, businesses, operations or activities to the environment unless the appropriate authorization has been obtained.
Fuel Storage Registration under the <i>Environmental Management Act</i> – Petroleum Storage and Distribution Facilities Storm Water Regulation <a href="#">Environmental Management Act: Petroleum Storage and Distribution Facilities Storm Water Regulation</a> <a href="#">BC Fire Code</a> <a href="#">Environmental Management Act: Spill Reporting Regulation</a>	Construction	Required to store fuel	Any petroleum storage facility that has a cumulative storage capacity over 100,000 L, occupies a location for more than 180 consecutive days and is NOT a part of a retail service station is required to register. The regulation also outlines requirements for oil water separator systems and effluent quality. The B.C. Fire Code has separate requirements that must also be adhered to.

Effluent Discharge Permit <a href="#">Waste Discharge Regulation</a>	Construction	Required to discharge effluent into the environment	<a href="#">Waste Discharge Regulation Implementation Guide</a> <a href="#">Waste Discharge Authorizations</a>
Air Discharge Permit <a href="#">Waste Discharge Regulation</a>	Construction	Required to discharge air contaminants into the environment, e.g. Incinerator for camps serving >100 persons	<a href="#">Waste Discharge Regulation Implementation Guide</a> <a href="#">Waste Discharge Authorizations</a>
<i>Note: Historically the Mineral Reserve Tenure has been used to prevent mining claims from being staked in or near a project, not commonly used since 2009. Details on Mineral Reserve Tenure are below.</i>			
Mineral Reserve Tenure <a href="#">Mineral Tenures Act</a>	Investigative to Primary Permitting	Required to prevent mining claims from being staked in or near a project. If claims have already been staked, proponents must consult claim holders, regardless of whether claims are active or inactive.	There is no set timeline for the establishment of a reserve. The length of time it may take from the submission of a request to a decision on whether to establish a reserve will depend on both the complexity of the request and its relative priority with regard to interests of the Province. <a href="#">Application Requirements</a>

## Chapter 9: Other Types of Clean Energy Projects



Bioenergy is renewable energy derived from organic biomass sources such as trees, crops, agricultural and aquaculture waste, or municipal solid waste. Biomass can be used to create a wide array of energy products including electricity, heat, wood pellets, liquid fuels like ethanol and biodiesel, biogas and hydrogen.

Bioenergy is considered to be carbon neutral. By using plant matter before it decays, bioenergy actually decreases the amount of methane produced, a potent greenhouse gas. Biomass materials are often waste products from existing industrial activities that would otherwise be disposed of, often at considerable environmental and economic cost.

In British Columbia, biomass resources can be found in virtually every region of the province. The most abundant and readily available source of biomass is the wood residue left over from forestry operations as well as the timber affected by the mountain pine beetle epidemic.

There are a number of bioenergy facilities in operation throughout the British Columbia, many of them being “cogeneration” plants that create electricity and heat for on-site use and in some cases sell surplus electricity to BC Hydro. There are also wood pellet production facilities, and other bioenergy production and research sites across the province.

The “BC Bioenergy Strategy: Growing Our Natural Energy Advantage” (available at [https://www2.qa.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/bc\\_bioenergy\\_strategy.pdf](https://www2.qa.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/electricity-alternative-energy/bc_bioenergy_strategy.pdf)) includes the target for B.C. biofuel production to meet 50 percent or more of the province’s renewable fuel requirements by 2020, which supports the reduction of greenhouse gas emissions from transportation.

The Mountain Pine Beetle (MPB) has impacted over 18 million hectares of B.C.’s forest. By the year 2017, the MPB is forecast to destroy about 57 per cent of the merchantable pine volume that was on the provincial land base at the start of the infestation. Through the Mountain Pine Beetle Action Plan, and subsequent efforts, the provincial government has taken action to accelerate harvest of the timber being killed—while it is still merchantable.

The province’s total inventory of merchantable mature lodgepole pine is currently about 1.2 billion cubic metres. Dead timber remains commercially valuable for 5-18 years depending on local conditions. That means the window of opportunity for salvaging decaying pine trees is narrow and immediate.

## Potential Sources of Biomass

Project proponents requiring the use of wood biomass will require a steady supply of fibre for their operations. Clean energy producers may obtain fibre from several sources including:

- (1) Purchase agreements for existing by-products from wood processing facilities,
- (2) Private sources,
- (3) Waste from existing logging operations, and
- (4) Access to standing timber.

### **Pine Beetle Stands**

Mountain Pine Beetle (MPB) impacted timber may be a viable source of fibre for bio-energy projects. While many stands of trees have been impacted by the MPB infestation, it will take several years to access and harvest these stands. Many MPB impacted stands contain a mix of sawlog (lumber) quality timber as well as non-sawlog quality timber that can be used for bio-energy or other purposes. Where the economics are poor or markets for wood waste is limited, unwanted fibre is piled on site and burned. Alternatively, and given the right economic conditions, these MPB stands represent a potential biofuel opportunity for bio-energy producers.

### **Mill Residues**

Mill residues are a low cost source of wood fibre for bio-energy producers. Access to mill residues is normally obtained through fibre supply arrangements with mill owner. The following forms of mill residues are available:

- Hog fuel - consisting of bark and damaged pieces of wood,
- Sawdust from the sawing of lumber, and
- Shavings from the planing of lumber.

Historically, mill residues have been used internally or sold for use in the heating of plant boilers and driers, or sold for the manufacturing of engineered wood products, wood pellet production, etc.

### **Roadside Accumulations**

During harvest operations, licensees often leave behind fibre that cannot be processed into lumber. Consequently, large accumulations of residual fibre are burnt. Securing access to these roadside and landing accumulations (prior to burning) through fibre supply arrangements with the existing forest tenure holder may provide another secure source of biomass material.

From economic and logistic prospective, roadside and landing accumulations should be removed concurrent with harvesting. If this is not possible, fibre should be removed with the consent and through a formal agreement with the licensee. The licensee will be able to assist bio-energy producers with any additional permitting, scaling and other requirements associated with the removal of materials from the harvest area.

Alternatively, if a business to business opportunity cannot be arranged as noted above, The *Forest Act* includes provisions for two timber tenures that have the purpose of accessing road

and landing waste that will not be utilized by the person who conducted the original harvesting. These two fibre recovery tenures are the Fibre Supply Licence to Cut (FSLTC); and the Fibre Forestry Licence to Cut (FFLTC). The framework for issuing these tenures include a notification process whereby once harvesting is completed on a specific block, the primary harvester will be required to provide notice whether or not the waste remaining on the block will be utilized. If not, the rights to the fibre may be allocated to the holder of one of these tenures.

For more information: [www.for.gov.bc.ca/hth/timber-tenures/fibre-recovery.htm](http://www.for.gov.bc.ca/hth/timber-tenures/fibre-recovery.htm)

Additionally, Fibre Connections BC helps link fibre suppliers, manufacturers and investors with each other. Fibre Connections BC will help improve the flow of fibre from harvesters and other producers to the highest-value processors. It will do this by providing access to a Network that will supply information to link people and facilitate business-to-business transactions.

For more information: <http://www.bcfri.ca/> and <http://www.woodsourcebc.com/>

### **Standing Timber**

Access to standing timber can be achieved as follows:

- BC Timber Sales (BCTS) harvest auctions - [www.for.gov.bc.ca/bcts/](http://www.for.gov.bc.ca/bcts/)
- Other ministry competitive offerings
- Purchase a tenure from a current licence holder, or
- A business to business arrangement with a current licence holder.

BCTS manages some 20 percent of the provincial Crown allowable annual cut. In its first five years, BCTS offered more than 73 million cubic metres of timber to the market. A portion of the stand offerings are in lower quality timber stands. Though limited in amount, at times additional volume does come available and is competitively offered by regional ministry staff, as noted above. With this in mind, there is very limited opportunity to secure a replaceable long-term tenure other than to purchase a license from an existing tenure holder.

Currently, the government is examining potential options, models and policies to help enhance the flow of wood fibre for use in the bio-energy industry. Not all of the MPB timber has to be harvested today. The timber is expected to retain its commercial value anywhere from five to eighteen years after attack (depending on local site conditions). Research and “shelf-life” modelling continues to be conducted to help determine priority areas where more immediate harvesting is required to recover economic value.

The Ministry of Forests, Lands and Natural Resource Operations (FLNRO) continues to work closely with BC Hydro on its Bioenergy Call.

- Please refer to BC Hydro’s Bioenergy Phase 2 Call Request for Proposals: [www.bchydro.com/content/dam/hydro/medialib/internet/documents/planning\\_regulatory/acquiring\\_power/2012q1/bioenph2callrfp\\_rfp.pdf](http://www.bchydro.com/content/dam/hydro/medialib/internet/documents/planning_regulatory/acquiring_power/2012q1/bioenph2callrfp_rfp.pdf)
- An Information Guide on Pursuing Biomass Energy Opportunities and Technologies in British Columbia for First Nations, Small Communities, Municipalities and Industry: <http://www.toolkit.bc.ca/resource/pursuing-biomass-energy-opportunities-and-technologies-british-columbia-information-guide>
- The B.C. Ministry of Forests, Lands and Natural Resource Operations (FLNRO) has created a website [www.for.gov.bc.ca/hth/timten/bioenergy/index.htm](http://www.for.gov.bc.ca/hth/timten/bioenergy/index.htm) to provide clean

energy producers with basic information about the pine beetle infestation, B.C.'s forest tenure system, maps, and the potential availability of biomass that may be suitable for alternative energy production. The Ministry is developing guidelines governing the development and operation of waste wood biomass energy production projects. Proponents interested in using dead pine trees to generate electricity are advised to contact staff in FLNRO district offices.

## Consideration of Project Planning for Biomass Energy Projects

### **Stage 1: Project Site Identification**

1. For **Phase 1** proposals, ensure that sufficient fuel supply has been identified for the proposal. This may be in the form of already available fibre or ongoing agreements with processing facilities to obtain the required supply.
2. For **Phase 2** proposals, initial consultation with the Ministry of Forests, Lands and Natural Resource Operations (FLNRO) is necessary to ensure that available fuel/timber is identified. Regional and District offices can work with proponents at this early stage to determine the location and available volume of timber. Proponents should discuss purchase agreements with local processing facilities to ensure a reliable source of fibre for their proposed project.
3. Based on the information gathered at this stage, proponents can determine the economic viability of a biomass proposal and whether or not to proceed to submitting an application.

### **Stage 2: Application, Submission and Acknowledgement**

1. This step involves submitting an application to FrontCounter BC, which will formally acknowledge proponents' intent to develop a clean energy project.
2. Confirmation of fuel supply sources, locations and amounts must be included in applications or the preliminary project descriptions. For Phase 2 projects, proponent must identify locations and volumes of Crown land timber on maps after determining available timber supply options with the FLNRO. At this stage proponents should also negotiate appropriate licence agreements authorizing the removal of Crown timber from the provincial forest.

### **Stage 3: Development Plan Preparation**

1. At this stage, proponents have an opportunity to discuss their project plans with provincial and federal agency representatives, to refine the project plans, mitigate impacts, determine which forest tenure is appropriate, and finalize the content of the Development Plan.
2. Biomass projects which require the harvesting or removal of timber from Crown land are required to comply with provincial forest legislation to ensure conditions of the licence agreement are met and forest values are protected. Methods of harvesting, road construction, mitigation/ protection of forest values form an integral part of the





*A biomass storage facility. Woody biomass sources in the province include existing mill wood residues, roadside debris and pine beetle damaged trees. The total generation potential for all wood sources is in the order of 2,300 MW.*

submitted Development Plan for Phase 2 projects. Communication with FLNRO staff is essential at this stage.

#### ***Stage 4: Completion and Submission of Development Plan***

The Development Plan outlines the sources of fuel for biomass projects and required supply levels. Commitments for purchasing wood biomass or for harvesting opportunities have been finalized. At this stage, proponents should have entered a long term harvesting licence for Phase 2 projects. For proposed projects to proceed, approval may be subject to the successful adjudication of Lands Officers. Mitigation of forest resource impacts must be confirmed and verified by FLNRO staff, as detailed in the submitted Development Plan. Details of proposed forest tenures are discussed at this stage and may include harvesting, road construction/maintenance/deactivation, silviculture obligations and the protection of forest resource values.

#### ***Stage 5: Initial Provincial Authorizations***

It is expected that long term forest tenure agreements to harvest Crown timber will be approved at this stage. These agreements specify requirements and conditions for harvesting Crown timber and provide the authority to grant specific harvest authorities.

# Chapter 10: Understanding Consultation

## Consultation with Stakeholders

This section includes general information on consultation: what consultation is, why it is done, who does it, and its impact on clean energy project proponents' proposals and projects. For specific information on First Nations consultation, refer to the 'Consultation with First Nations' section.

### **What is Consultation?**

Consultation is seen to be communication between two or more parties with the goal of sharing information related to a clean energy project and the environmental, social, or economic impacts it may have. There are individuals and groups of people who will be directly impacted (positively or negatively) by a project. There will also be individuals who will not be directly impacted but who choose to exercise their right to express an opinion. Most of these individuals or groups are referred to as stakeholders. Examples of stakeholders include individuals, the public at large, federal agencies, other provincial agencies, local governments, industry associations, and community groups. What differentiates these stakeholders is the extent to which they are consulted with, the way in which consultation occurs, and the degree to which accommodation for adverse impacts may be required. First Nations are considered separate and distinct from other Stakeholders due largely to section 35 of the Constitution of Canada where existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognised and affirmed. Clean Energy proponents may engage in information sharing referral process with First Nations whereas government will engage in a consultation process.

Effective consultation has the following characteristics:

- It enables all stakeholders to make known their views and work together to ensure concerns are addressed.
- Consultation is no guarantee that consensus will be reached. An inclusive, transparent process can help smooth the path for a project's development and can help build people's confidence in and support for the project and its proponents.
- Agreement and consensus, although desirable, are not required. Consultation entails listening and understanding, but does not require agreement.
- Consultation processes must be authentic. Decisions cannot have already been made.
- Parties engaged in consultation must provide enough information to facilitate informed discussion.
- Sufficient time must be allocated so that all parties can express their views.
- Proponents should leave themselves enough time and flexibility to address stakeholder concerns, which may mean modifying their original plans.

### **Why Consult?**

Government agencies engaged in consultation recognize that every group and individual has something valuable to say. The need to listen to all stakeholders' perspectives stems from the fact that government agencies are responsible for managing publicly-owned Crown resources in a responsible and transparent manner. Consequently, the public has the right to comment on the use of Crown resources. The Crown has a legal duty to consult with potentially affected First Nations (see First Nations Consultation section).

By considering all perspectives and opinions, Statutory Decision Makers can make the best possible decisions on project authorizations.

### ***How Does Consultation Occur?***

As a CEP progresses from the investigative phase through to project review and development, there are several phases of consultation that will occur. When a CEP investigative application is first received, consultation will be initiated through a referral by FrontCounter BC and advertising in the local papers by the proponent. The application will also be posted to the Crown Lands [Reasons for Decision](#) website. The basic application will be referred to stakeholders so they know that a project is being considered and so they understand the investigative activities that will take place.

During the Development Plan Preparation and Development Plan Review stages of the process the project will be referred again to stakeholders, publicly advertised, and posted to the Crown Lands website. In addition, the proponent may be expected to host a public forum to share information and solicit feedback from the general public on the project Development Plan.

Additional information on consultation with First Nations is discussed in the following section.

## **Consultation with First Nations**

This section provides general background information to provide a better understanding of the context within which the Province carries out consultation with First Nations.

The legal requirements of First Nation consultation are complex and vary depending on the particular circumstances of each case. This section makes no claim as to address legal requirements for individual cases. Rather, this section aims to provide the reader with an overview of the general framework within which the Province carries out First Nation consultation, and to put it in the context of a CEP application.

Under the Federal CEAA process, Federal agencies also consult with First Nations. However, Federal Agencies follow their own processes. More information is available at: [www.ceaa.gc.ca/](http://www.ceaa.gc.ca/)

### ***Planning First Nations Consultation***

Although it is the legal duty of the Crown to consult and, where required, accommodate First Nations in land use decisions, CEP proponents are expected to identify and engage potentially affected First Nations in information exchange and engagement early in project planning. In some cases, the Province may delegate certain procedural aspects of consultation and engagement to the proponent, such as participating in meetings with First Nations, providing information to First Nations about the proposed project, and discussing possible project modifications to address First Nations interests.

First Nations engagement by the CEP proponent and consultation by the Province occurs throughout a project's development, starting from the exploration stage. Planning for First Nations consultation at the coordinated authorizations stage will be in the context of the previous consultations and the previous knowledge and relationships that the Province and proponent have with the First Nations.

The First Nations consultation coordinator assigned to the CEP coordinated authorizations process is responsible for the development and implementation of a project-specific First Nations consultation program. Working with the project lead, the Statutory Decision Maker (SDM) and the proponent as appropriate, the First Nations consultation coordinator will engage with potentially affected First Nations to develop and agree upon an approach for consultation.

### **First Nations Consultation and Accommodation**

Before issuing authorizations for any CEP activity, the Province has a legal responsibility to consult and, where appropriate, accommodate First Nations with aboriginal interests in the project area. The Province also has treaty-specific responsibilities where there are established treaty rights. The SDM's First Nations consultation coordinator is responsible for leading and coordinating the First Nations consultation process.

The following is excerpted from the B.C. Government's [Consulting with First Nations](#) webpage.

The Province is legally obligated to consult and accommodate (where required) with First Nations on land and resource decisions that could impact their Aboriginal Interests.

When consulting, government officials are guided by the interim Updated Procedures for Meeting Legal Obligations When Consulting First Nations. These procedures provide a consistent and transparent process for provincial ministries and agencies, First Nations and proponents while safeguarding Aboriginal Interests in a manner consistent with the law. The procedures provide a baseline for government to meet its legal obligations. They do not replace or supersede the development of treaties, relationships, shared decision-making arrangements or other agreements.

The procedures were released in July 2010 as interim in order to review them with First Nations. To view the document, click on [Updated Procedures for Meeting Legal Obligations When Consulting First Nations: Interim](#).

While the Province is responsible for ensuring adequate and appropriate consultation and accommodation, proponents can be involved in the procedural aspects of consultation by building relationships with First Nations and facilitating the exchange of information. Early outreach and information sharing at the exploration stage by the proponent during the review of permit applications by SDM is important to establishing good working relationships with First Nations during the project planning and application review stages.

Proponent-driven initiatives such as modifying project plans to minimize potential impacts, avoiding sensitive areas, developing mitigation strategies, carrying out environmental monitoring programs or developing impact benefit and other business agreements with First Nations can also contribute to the decision-making process.



Government officials are directed to the [Guide to Involving Proponents When Consulting First Nations](#). This guide provides operational guidance to decision makers and staff respecting the role of proponents in consultation.

To foster better relationships between business and First Nations, the Ministry of Aboriginal Relations and Reconciliation has released a plain-language guide which provides practical advice on strategies to help businesses develop strong working relationships with First Nations and can be viewed at: [Building Relationships with First Nations: Respecting Rights and Doing Good Business \(English\)](#).

### ***First Nations Considerations for Proponents***

The legal responsibility to consult and, where appropriate, accommodate, lies with the Crown alone, as represented by the SDMs. Project proponents can, however, be of great assistance in building relationships with First Nations and facilitating the exchange of information.

The proponent is advised to engage with all potentially affected First Nations communities in meaningful and collaborative dialogue and relationship building, to gain an understanding of the potential impacts of the project and the First Nations' expectations for participation in the project.

Key issues that will likely be of interest to the First Nation are:

- wildlife and fisheries harvest activities in the area;
- water quality;
- other traditional use activity (sustenance activities, village sites, spiritual sites, etc.);
- archaeology sites;
- socio-economic impacts; and
- capacity support to participate in consultation; and impact benefit sharing including jobs and contract opportunities.

Research by the proponent on the above issues will also help government determine the scope of provincial consultation that is required for the statutory authorizations. Any studies that have been undertaken that provide ethnographic or legal information about the aboriginal claims (to aboriginal rights and/or title) in the area, and/or the impact of the proposed activity on those claims, will also be of significant value.

Many First Nations will have the internal capacity, or want to develop the internal capacity, to take on a direct role in the collection of the information required by the proponent. Proponents are encouraged to involve First Nations in the collection of information as much as possible, as this is an opportunity to contribute to capacity building and to help First Nations develop a stronger understanding of the project impacts and benefits.

It should be noted that the proponent is not required to provide government with First Nations information that by arrangement with First Nations has been agreed to be treated as confidential.

Project proponents may assist the project lead and the First Nations consultation coordinator by advising of any engagement activities with First Nations such as providing mitigation strategies, environmental monitoring or benefit sharing opportunities. Commitments to training programs, employment opportunities or other engagements by the proponent will help secure longer-term relationships with the CEP sector in the area and build the capacity for

engagement on other projects.

If the proponent's discussions with First Nations have extended to cover proposed statutory authorizations, it will be of particular value to the SDM to be aware of any mitigation strategies that have been proposed (such as providing a role for First Nations in the environmental monitoring or reclamation). If such strategies have not been identified, the proponent may seek assistance from the SDM at a later stage in the consultation process to secure such longer term commitments, where appropriate, in discussions with the First Nations.

### ***Proponent First Nations Engagement – Best Practices***

The Province of British Columbia encourages early engagement between proponents and First Nations. Often proponents can play an important role in the provision of information about their projects and proposed activities. This document sets out regional recommendations for proponents engaging with First Nations.

Proponents are encouraged to strive toward completing information sharing on activities prior to the Province accepting an application. However, if the application has already been submitted, the Province and proponent will work jointly to engage with First Nations. Upon receiving an application, the Province must contact the First Nation prior to consultation commencing, at which point the Province must advise the First Nations of the role and responsibilities of the Province and the appropriate roles of the proponent in the consultation process and the intended decision date. Both the proponent and Province, upon initiating engagement, must state that the proponent's efforts will be recorded and incorporated into the Province's Consultation Record when the Province has delegated certain procedural aspects of consultation to a proponent.

Note: If a First Nation is unwilling to meet directly with the proponent, and wishes to meet with government staff (either alone, or together with the proponent), the Province will respect that view.

#### **Best Practice #1: Preparing to Engage**

There are two phases to engagement: pre-application and application/consultation. For pre-application engagement, Provincial staff can provide advice based on a scan of aboriginal interests in the application area. Upon receiving an application, before commencing consultation, Provincial staff must conduct an Initial Review as described in the Provincial Procedures and establish an initial level of engagement/consultation. This will include reviewing First Nations contacts identified in the Consultative Area Database and other related readily available information, including general archeological and historical information. This is also an opportunity for government to clarify any protocols contained in agreements with First Nations. If pre-application information sharing has taken place between the proponent and First Nation, the Province will also review the findings from this early engagement.

Note: though the Province can provide advice regarding which First Nations to focus engagements, at this point not all information may be available and that research and discussions with the First Nations may be required once the consultation process has been triggered.



**Best Practice #2: Contents for Information Sharing**

The Proponent is expected to share information directly with the applicable First Nations and the Provincial First Nations Relations staff. Proponents are encouraged to provide the information noted in the document embedded below as early as possible. Early information sharing is advantageous as it enables resolution to any potential issues quickly through direct discussion with the affected First Nations. If done in a timely manner, this will negate the need to extend the consultation period.

**Best Practice #3: Pre-Application Engagement and Consultation**

When the proponent conducts information sharing or takes on the procedural aspects of consultation they must keep a record of communication identifying each First Nation, the person communicating with the First Nation, the communication format (letter, email, fax, meeting or phone call), dates, and general comments (such as information shared with the First Nation, minutes of meetings, and/or information captured on phone calls). Aside from tracking communication, proponents are to also record aboriginal interest/concerns and related accommodation measures (see tab 2 of tracking table below). The information in these two tables will be added to the Provincial Consultation Record, which is submitted to the Statutory Decision Maker to support the decision making process. The proponent should inform the First Nation that information collected will be shared with the Province. It is highly recommended that the templates are also used during pre-application engagement.

**Best Practice #4: Consultation Initiation**

Though the proponent may begin early engagement, consultation is usually not triggered until the Province sends a letter referencing the proponent's information sharing package in addition to stating currently known aboriginal interests and past identified concerns and accommodations. The consultation clock typically starts here although, in some situations, it may be appropriate for the province to initiate the consultation process at an earlier date. This letter will clearly communicate the role of the proponent, Province, and timelines. At this time, the First Nation may decide to engage solely with the proponent, solely with the Province, or jointly with the proponent and Province. Additionally, after the Province has sent the initial communication triggering consultation, the First Nations may wish to provide input to the Province on the Initial Review (First Nations interests, potential impacts, etc.). If the First Nation wishes to respond to the Province, this information may be shared with proponent.

**Best Practice #5: Accommodation and Mitigation Measures**

Accommodation may include activities to avoid or mitigate adverse impacts or concerns respecting aboriginal interests brought forwards by a First Nation during engagement. When written into a decision, mitigation measures can be legally recognized as accommodation.

- Accommodation options could include:
- Changing the timing of a proposed activity;
- Altering the footprint or location of a proposed activity;
- Avoiding the aboriginal interest;

- Environmental monitoring; and,
- Other mitigation strategies (i.e. agreements).

**Best Practice #6: Following-up**

If the First Nation has not engaged with the proponent or the Province, the Province will follow up with the First Nation with a reminder of the decision deadline.

If the First Nation has engaged, and no new information is to be shared or required by the First Nation, the proponent is to follow-up with First Nation to communicate their intention to send a summary of the findings and outcomes to FLNRO; the summary package sent to FLNRO should be shared with the First Nation as well. Communication between Provincial First Nations Relations Staff and the proponent should also occur at this time.

**Best Practice #7: Summary Standards**

Proponents must submit to the Province the tracking templates and a summary of the information sharing and engagement process, which should meet Provincial expectations regarding content/detail as to ensure consultation has been adequate.

**Best Practice #8: Confirmation of Interests / Concerns Raised by First Nations**

Provincial First Nations Relations Staff will confirm with proponent that Provincial and legal requirements have been met, discuss any outstanding concerns raised by First Nations, and consider whether further First Nation engagement is necessary. If consultation is not deemed as adequate further consideration to process and timelines should be given.

**Best Practice #9: Final Letter to First Nations**

Provincial First Nations Relations Staff to send First Nations a final letter regarding conclusion of consultation. Proponents are to be copied. Typically, this has been done for significant projects, or when there is a challenging consultation process that may have ended in a disagreement with a First Nation. This concludes the formal consultation period.

***In Conclusion***

First Nations typically have a critical role in the review and success of any CEP proposal. The Province has made a clear commitment to meaningfully involve First Nations in the review of all CEP proposals. This commitment stems from both legal and policy requirements. Proponents also have an important role to play in achieving successful outcomes.

## Chapter 11: Connecting to B.C.'s Power Grid and Selling Electricity

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Electricity produced by clean energy producers can be used in a number of ways. The simplest way is to use the electricity on site or in the community where it has been generated. Many pulp and paper mills generate their own electricity and more and more of B.C.'s remote communities are generating their own renewable electricity to offset their dependence on diesel power generation. While on-site and off-grid generation are increasing in B.C., the bulk of the new private power generation in the province is focused on selling electricity that is generated to utilities, such as BC Hydro, after connecting to the electrical distribution or transmission system.

While it may sound straightforward, connecting to the power grid and selling electricity can be a complicated process. Electrical utilities, particularly the transmission and distribution arms, must ensure that the stability of the power grid is not threatened, that production is reliable, and that the power purchased is appropriately priced. These conditions of sale and service are managed through detailed agreements to ensure the rights of buyers and sellers of electricity are protected.

The following sections in this chapter provide an overview of how electricity is most likely to be purchased in B.C. and the processes involved in connecting to the power grid. It is important to note that policies, procedures and standards often change. Clean energy proponents should contact parties involved in power purchasing and interconnection to obtain up-to-date and detailed information before proceeding with project development.

### ***Obtaining Electricity Purchase Agreements***

To sell some or all of the energy they generate, clean energy project developers need to obtain a power sales contract, commonly called an Electricity Purchase Agreement (EPA). EPA terms vary depending on what characteristics are most important to the purchasing utility. Most EPAs for renewable and other forms of electricity include specific details about:

**Term** – How long the agreement will last.

**Regulatory Review** – If the utility is regulated, the EPA between the parties is likely subject to regulatory review.

**Construction and Operation** – Cost responsibilities, standards of construction, changes in design, and monitoring.

**Purchase and Delivery Obligations** – When power sales and purchasing will begin, dealing with delays and delivery shortfalls, addressing outages in transmission or distribution.

**Price and Payment Terms** – How much will be paid for the electricity generated and when these payments will be made.

**Environmental Attributes** – Addresses the ownership of any additional rights or value associated with generating clean or renewable electricity and the standards, audits or certification that are required.

**Administration of the Agreement** – How the agreement will be administered. May include dealing with assignment of the agreement, dispute resolution, confidentiality and force majeure.

**Termination** – The circumstances under which either party may terminate the agreement and the steps, notices and payments that may be required.

To obtain an EPA from a utility, clean energy producers usually need to participate in a competitive process, like a call for tenders or request for proposal process, or apply under a specific program run by the utility that continually offers contracts under defined terms and conditions. Few jurisdictions and utilities guarantee that power purchase agreements will always be available.

## BC Hydro

BC Hydro, a provincial crown corporation, is the largest long term purchaser of electricity generated by clean energy producers in B.C. BC Hydro is guided by provincial policy and legislation and the long-term needs of its customers when making plans to purchase energy from clean energy project developers.

The two principal means by which BC Hydro purchases power are through:

- 1) competitive acquisition processes, and
- 2) a standing offer program

### 1) Competitive Acquisition Processes

BC Hydro has run a variety of Requests for Proposals (RFP) and Calls for Tenders (CFT) processes to secure EPAs with clean energy project developers. RFPs and CFTs are competitive processes to choose specific project proposals from a pool of applicants. The winners of these competitive processes receive an EPA with BC Hydro and proceed to construct their project, provided they have secured all the required permits and licenses. Since 1988, BC Hydro has held various competitive acquisition processes for electricity. The design, development and timing of these programs are informed by BC Hydro's Integrated Resource Planning process. Details on some previous and current calls for power and requests for proposals can be found on BC Hydro's website at: [www.bchydro.com/energy-in-bc/acquiring\\_power/closed\\_offerings/clean\\_power\\_call.html?WT.mc\\_id=rd\\_cleanpowercall](http://www.bchydro.com/energy-in-bc/acquiring_power/closed_offerings/clean_power_call.html?WT.mc_id=rd_cleanpowercall)

### 2) Standing Offer Program

**Standing Offer Program** – As directed by the provincial government in its 2007 Energy Plan and the 2010 *Clean Energy Act*, BC Hydro developed the Standing Offer Program. In general, a standing offer process sets certain criteria for participation and makes a commitment that any proposed project which meets those criteria will receive the terms set out in the standard contract.

BC Hydro's Standing Offer Program (SOP) was developed to encourage the development of small and clean or renewable energy projects through streamlining the process for selling



*Clean energy proponents should contact parties involved in power purchasing and interconnection to obtain up-to-date and detailed information before proceeding with project development.*

electricity to BC Hydro, and simplifying the contract between BC Hydro and the developer. The SOP is also intended to decrease transaction costs for developers while remaining cost-effective for ratepayers.

Listed below are a number of key elements of BC Hydro's Standing Offer Program:

- All energy from the project is sold to BC Hydro for a predetermined price during the EPA term.
- Terms of agreement can vary from 20 to 40 years.
- The project must have a nameplate capacity greater than 0.05 MW but no larger than 15 MW.
- The call is for "clean or renewable" energy, as defined by the Province or co-generation with an overall efficiency of minimum 80%.
- All proven and completed prototype generation technologies are eligible to participate in the program, if they are clean, renewable or co-generation with an overall efficiency of 80%.
- Transmission and distribution system upgrade costs are borne by BC Hydro, subject to a cap.

Further details regarding BC Hydro's Standing Offer Program and EPA criteria can be found at the following update at: [www.bchydro.com/standingoffer](http://www.bchydro.com/standingoffer)

- BC Hydro's Integrated Resource Plan (IRP), approved by the Province on November 26, 2013, included a Clean Energy Strategy to support the clean energy sector in B.C. and promote clean energy opportunities for First Nations communities. A number of actions related to the Standing Offer Program were recommended and are detailed in [Chapter 8 of the IRP](#).

As reflected in the Clean Energy Strategy, the B.C. government has directed BC Hydro to remove high-efficiency cogeneration using non-clean fuels from eligibility for the Standing Offer Program. BC Hydro and the B.C. government are currently exploring how this change will be implemented.

### ***Sales to Other Utilities***

Besides BC Hydro, there are other utility companies in the Province which may purchase power from clean energy project developers. Fortis BC, for example, is a major service provider in the Southern Interior and Kootenay regions, servicing communities such as Osoyoos, Penticton, Kelowna, Summerland, Nelson, Trail and others.

### ***Sales to Non-Utility Buyers***

Instead of selling it to a utility, clean energy producers may sell the electricity they generate to a specific industrial power consumer or a power marketer within B.C. or outside of the Province.

Selling power directly to a buyer within B.C. is possible, but it may be subject to regulation by the British Columbia Utilities Commission (BCUC), as outlined under the definition of 'public utility' in the *Utilities Commission Act*. While they are generally considered utilities under the *Utilities Commission Act*, clean energy producers and industries with excess electrical generating capacity to sell may receive exemptions from the regulatory impact of various sections of the *Utilities Commission Act* when they sell power to regulated utilities or a limited number of customers in close proximity to the generator. This guidebook is not intended to address these details

or considerations. It is recommended that proponents undertake detailed research on this matter, and contact the BCUC before considering a project that may be subject to their regulatory oversight.

Clean energy producers may also sell their power to power marketers, who then sell that power within or outside of the Province. Selling to a power marketer may also be subject to regulation by the BCUC, unless that marketer is a subsidiary of a utility. An example of a power marketer, that clean energy producers could sell electricity to, and remain exempt from certain sections of the *Utilities Commission Act*, is Powerex ([www.powerex.com/](http://www.powerex.com/)), a subsidiary of BC Hydro, which trades electricity throughout the Western Electricity Coordinating Council service territory, which extends from Canada to Mexico and encompasses British Columbia and Alberta, 14 western U.S. states, and the northern portion of Baja California Mexico. When dealing with a power marketer, pricing may be limited to spot market rates, unless longer term sales contracts can be negotiated with a specific buyer.

Project developers can also consider selling directly to other jurisdictions, such as utilities or customers in Alberta or the United States. To sell into the United States, developers need to obtain necessary Canadian and American approvals for exporting and importing power and secure transmission services on both sides of the border. This guidebook is not intended to address inter-jurisdictional power sales, which can be very complicated. Considerable research on permits, transmission and other service contracts is recommended before proponents consider a project based on an export model.

## **Transmitting Electricity**

### **Transmission and Distribution Systems**

To sell the power generated by a private power project, proponents need to deliver electricity generated at their facility to a point of sale, commonly known as the Point of Interconnection (POI). This may require construction of a private power line to the POI, where the privately owned power line will interconnect with a low voltage distribution line or a high voltage transmission line operated by the utility buying the power, or by a utility that will take that power to the ultimate buyer.

With very few exceptions, the majority of the transmission and distribution system in B.C. is operated by BC Hydro. Some smaller utilities, like FortisBC, also have the ability to transmit and distribute electricity within their service areas.

In B.C. most of the power produced by clean energy producers is sold to BC Hydro. As a result, these kinds of projects are either connected to:

**BC Hydro's Distribution System** – BC Hydro administers the distribution system of power lines which take power from the main sub-stations on the transmission system and distribute that electricity via power lines of 35 kV or less to the majority of residential and commercial electricity users. Those projects that connect to the distribution system are often termed D-connected projects.

**BC Hydro's Transmission System** – BC Hydro's high voltage electricity transmission lines transmit power from the large, and often distant, hydro stations and other generators to the industrial hubs and cities where it is used. These transmission lines have voltages higher than 60 kV and up to 500 kV. Clean energy projects that connect to the transmission system are often termed T-connected projects.



In most instances, there is little opportunity to choose between connecting to the distribution system or to the transmission system. The interconnection choice is often determined by the size of the generator, the distance to suitable interconnection locations, and cost.

Electrical transmission and distribution systems are very sensitive and complicated to administer, so the process of adding additional sources of generation to such systems is not a simple matter. Whenever a new generator, be it privately owned or public, is connected to the grid, certain technical and legal requirements need to be met to ensure the interconnection is safe and does not have unintended impacts on the larger system. The details of how a new generator is interconnected to the electricity grid are addressed in the Interconnection Agreements between the proponent and BC Hydro.

### ***Interconnection Processes***

Before proponents can obtain approval to connect to the transmission or distribution system, they must first meet certain transmission or distribution interconnection requirements. The first step in meeting these requirements is to submit an interconnection application to BC Hydro followed by completion of a number of feasibility and technical studies. These studies analyze the impact of adding new or additional generation to the system, identify any modifications or additions to facilities required to allow the generated electricity to flow through the grid to customers, estimate the cost of new facilities and system reinforcements, and set project requirements to ensure safe and reliable operations. Once studies are complete, a site specific document is produced outlining the project interconnection requirements and the utility and the project developer can enter into an Interconnection Agreement that outlines the rights and responsibilities of each party.

Depending on the location of the project, the details of what studies are needed, who will complete and pay for those studies, and who will pay for facilities improvements will differ. Outlined below are the most common interconnection processes in B.C. involving BC Hydro.

### ***Transmission System Interconnection Processes***

For information on the interconnection process, please see BC Hydro's Generator Interconnection webpage at [http://transmission.bchydro.com/generator\\_interconnection/](http://transmission.bchydro.com/generator_interconnection/).

### ***Standard Generator Interconnection Procedure***

The Standard Generator Interconnection Procedure (SGIP) is a tariffed process that BC Hydro follows to review interconnection requests. Under the SGIP, BC Hydro manages the timely and orderly analysis of interconnection for all power generation projects connecting to the BC Hydro transmission system.

For more information on the process for interconnecting projects using the Standard Generator Interconnection Procedure, please contact:

Transmission Generator Interconnections  
BC Hydro  
1100 – 1055 Dunsmuir Street  
Vancouver, B.C. V7X 1V5  
Fax: 604-699-7540  
Email: [interconnections@bchydro.com](mailto:interconnections@bchydro.com)

See: [http://transmission.bchydro.com/generator\\_interconnection/](http://transmission.bchydro.com/generator_interconnection/) for more information on BC Hydro transmission system interconnection requirements.

The SGIP process can take a significant amount of time to complete, depending on the particulars of the interconnection situation. After submitting the interconnection request, attending an initial information meeting and completing the Feasibility Study (45 days), the System Impact Study (90 days), and an Interconnection Facilities Study (90-180 days), the entire SGIP process can take up to one year to complete.

### **Competitive Electricity Acquisition Process ("CEAP")**

The CEAP interconnection tariff is used to coordinate review and study of project proposals that have been submitted into BC Hydro's competitive electricity acquisition processes, such as the Clean Power Call. The CEAP ensures that all projects are studied under the same conditions and retain the same position in the interconnection queue. This means that when all feasibility and technical study results are incorporated into the bid evaluation process, all the bidders are on equal footing. When successful bidders have been selected, they enter into the SGIP process to complete the remaining interconnection studies.

All the costs involved in studying the interconnection through the SGIP and CEAP processes are borne by applicants. Responsibility for the cost of upgrades to the transmission system are determined by the EPA used for each call and the Open Access Transmission Tariff (OATT) rules.

Clean energy projects developers interested in connecting to a transmission line are strongly encouraged to contact BC Hydro and review the most up-to-date information on the process.

Transmission Generator Interconnections  
BC Hydro  
1100 – 1055 Dunsmuir Street  
Vancouver, B.C. V7X 1V5  
Fax: 604-699-7540  
Email: [interconnections@bchydro.com](mailto:interconnections@bchydro.com)

See [http://transmission.bchydro.com/generator\\_interconnection/](http://transmission.bchydro.com/generator_interconnection/) for more information on BC Hydro's transmission system interconnection requirements.

### **Distribution System Interconnection Process**

The process for distribution interconnections follows the same general steps as the Transmission process with some exceptions as the projects are typically smaller in capacity. For more details on the distribution interconnection process, please contact:

Distribution Generator Interconnections  
BC Hydro  
1100 - 1055 Dunsmuir Street, Vancouver, B.C. V7X 1V5  
Phone: 604-699-7641 or 604-699-7382  
Fax: 604-699-7540  
Email: [gen.interconnections@bchydro.com](mailto:gen.interconnections@bchydro.com)  
Web: <https://www.bchydro.com/accounts-billing/moving-electrical-connections/electrical-connections/distribution-generator-interconnections.html>

## Appendix A

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**Clean Energy Project**  
**Development Plan Information Requirements,**  
**Province of British Columbia,**  
November 2011  
Last Updated: April 2016





BRITISH  
COLUMBIA