14 Glossary of Terms

Active Storage	The volume of water between the maximum and minimum licensed reservoir levels, as defined by our storage water licences to support the purpose of power. Active Storage will be the difference between Total Storage and Inactive Storage. Active Storage can be significantly less than Total Storage for some reservoirs (e.g., Dinosaur Reservoir).
Aggrading	To fill and raise the level, or streambed, by deposition of sediment.
Alluvial/Alluvium	Sedimentary soils or deposits formed by flowing water.
Annual Allowable Cut	The amount of wood permitted to be harvested within a one-year period to ensure the sustainability and productivity of forests.
Bedload	Material that is transported along the bed of a river by the water flowing in the river.
Bioaccumulation	Accumulation of chemicals in the tissue of organisms through any route, including respiration, ingestion or direct contact with contaminated water, sediment and pore water in the sediment.
BC Energy Plan	An energy policy document released by the B.C. government in February 2007.
Capacity	The highest level of electricity that a utility or resource can produce at any one time. Capacity is measured in megawatts (MW).
Carbon Intensity	The amount of carbon by weight emitted per unit of energy consumed.
Cofferdam	A temporary dam or barrier used to divert a river or to enclose an area during construction to enable underwater foundations to be built in the dry.
Colluvium	Loose deposits of earth and rock debris accumulated through the action of rainwash or gravity at the base of a gently sloping cliff or slope.

Concrete Structure	The component(s) constructed out of concrete. Typical components include the spillway, spillway headworks, stilling basin, generating station sub-structure, and power intakes.
Demand-Side Management	A rate, measure, action or program undertaken: (a) to conserve energy or promote energy efficiency; (b) to reduce the energy demand a public utility must serve; or (c) to shift the use of energy to periods of lower demand, but does not include: (d) a rate, measure, action or program, the main purpose of which is to encourage a switch from the use of one kind of energy to another such that the switch would increase greenhouse gas emissions in British Columbia, or (e) any rate, measure, action or program prescribed.
Dependable Generating Capacity	The amount of megawatts a plant can reliably produce when required, assuming all units are in service. Factors external to the plant affect its dependable capacity. For example, streamflow conditions can restrict the dependable capacity of hydro plants and fuel supply constraints can impact thermal plant dependable capacity. Planned and forced outage rates are not included. Also, for the purpose of Resource Option estimates: the capacity a plant can reliably deliver for the duration of time in which it is required. The dependable capacity used in the annual resource balance is the maximum capacity that a plant/unit can reliably provide for 3 hours in the peak load period of weekday during the continuous two weeks of cold weather.
Dispatchable	A supply- or demand-side resource whose output can be controlled to respond to short-term variations in *load* or *resource* balance due to weather changes, unit outages, market price changes, and non-power considerations.
Drawdown	Lowering the water levels in a reservoir by discharging more water than is entering it.
Effective Load Carrying Capability	The maximum peak load that a generating unit or system of units can reliably supply such that the *Loss of Load Expectation* will be no greater than one day in 10 years

Electrical Grid	A synchronized transmission network that delivers electricity from generating stations to local distribution facilities
Energy	The total amount of electricity that a utility or resource supplies during a particular time period. Typically measured in gigawatt hours (GWh).
Fill	Earth materials with specific properties that are used for construction, for example for roads, highways and dams.
Firm Energy	Energy produced by a project on an assured basis over a defined period of time.
Floodplain	An area of land that supports floodplain plant species and is (a) adjacent to a stream that may be subject to temporary, frequent or seasonal inundation, or (b) within a boundary that is indicated by the visible high water mark
Turbine	Used to generate electricity. A turbine is a fixed blade reaction-type turbine and is based on radial water flow.
Gate Testing	Periodic functional tests performed on the spill gates to verify they operate as designed and to verify their availability for spill events.
Generating Station	The component of a hydroelectric power plant where the generators and turbines are housed and where power is produced by the action of the water acting on the turbines.
Geomorphology	Physical configuration of the river channel in relation to surrounding topography and geology.
Gigawatt (GW)	One billion watts or one million kilowatts.
Gigawatt Hour (GWh)	Unit of energy equal to one billion watt hours, or one million kilowatt hours (an amount of electric energy that will serve about 100 residential customers in B.C. for one year).
Glaciolacustrine	Pertaining to lakes fed by melting glaciers, or to the deposits forming therein.

Heritage Asset	As defined in the B.C. *Clean Energy Act*: (a) any equipment or facilities for the transmission or distribution of electricity in respect of which, on the date on which this Act receives First Reading in the Legislative Assembly, a certificate of public convenience and necessity has been granted, or has been deemed to have been granted, to the authority or the transmission corporation under the *Utilities Commission Act*, (b) generation and storage assets identified in Schedule 1 of this Act, and (c) equipment and facilities that are for the transmission or distribution of electricity and that are identified in Schedule 1 of this Act.
Hydrology	The science of the properties, distribution and effects of water on a planet's surface, in the soil and underlying rocks, and in the atmosphere.
Impact Lines	Boundary beyond which usage of lands adjacent to a reservoir are not expected to be affected by the creation or normal operation of the reservoir.
Impervious Material	Material that has low water permeability, used for the core of an earthfill dam.
Insurance Energy	Insurance energy means the 3,000 gigawatt hours of energy in addition to the amount of electricity required to meet BC Hydro's electricity supply obligations that BC Hydro must hold the rights to by the year 2020 and each year after.
Integrated Resource Plan	BC Hydro's long-term electricity planning required under the B.C. *Clean Energy Act.*
Interbedded Shales	Interbedded – alternating layers of rock with different properties such as grain size. Shales – fine grained sedimentary rock composed of clay and silt sized particles

Intermittent	An electric generator that is not *dispatchable* and cannot store its fuel source
Kilowatt (kW)	A unit of electric power equal to 1,000 watts.
Kilowatt Hour (kWh)	The amount of electricity a power plant generates or a customer uses over a period of time is measured in kilowatt hours, a unit of electrical energy equivalent to one kilowatt of power used for one hour. One kilowatt hour is equal to 1,000 watt hours, equivalent to the energy consumed by a 100-watt bulb burning for 10 hours. An average household will use 800 to 1,300 kWh per month depending upon geographical area.
Lacustrine	Originating from a lake environment.
Landslide Terrain	Area of irregular or hummocky topography created by slope movement.
Laydown Areas	Designated locations at a construction site where the components or equipment needed during the construction of a facility are offloaded and stored temporarily until required. These locations are usually large flat areas that are easily accessible by both transportation and construction equipment. Pre-assembly of some components prior to their installation or use may also be carried out at these locations.
Licensed Minimum Reservoir Level	Defined under a provincial *Water Act* storage licence for the purpose of power. Temporary operations below this range may be required for maintenance or dam safety.
Licensed Maximum Reservoir Level	Defined under a provincial *Water Act* storage licence for the purpose of power. This represents the upper level the project could indefinitely store water. Temporary operations above this range may be required for maintenance or dam safety when routing high flows.
Load	The amount of electricity required by a customer or group of customers.

Load Forecast	The expected *load* requirements that an *electricity system* will have to meet in future years.
Long-Term Acquisition Plan	BC Hydro's previous long-term energy planning process, now superseded by the Integrated Resource Plan
Long-Term Sustainable Harvest Level	A harvest level that can be maintained indefinitely, given a particular forest management regime (which defines the timber harvesting land base, and objectives and guidelines for non-timber values) and estimates of timber growth and yield.
Loss of Load Expectation	The sum, over a year, of the probability of not meeting the peak loads on all days.
Maximum Normal Reservoir Level	Normal maximum operation elevation of the reservoir in the forebay of the dam.
Normal Operating Range	The difference between the normal maximum and normal minimum water levels for the purpose of power. This is the range that the reservoir is used over the course of normal operations. Operations above or below this range may be required for maintenance or dam safety reasons such as routing high inflows. Normal operating ranges on BC Hydro's reservoir may change throughout the year to accommodate seasonal inflow planning or other temporal-based interests such as recreation or fisheries objectives. Normal Operating Range, however, will always be equal to or less than the Licensed Operating Range.
Megawatt (MW)	A unit of electrical production capacity. One million watts or 1,000 kilowatts.
Megawatt Hour (MWh)	One million watt hours of electrical energy. A unit of electrical energy that equals one megawatt of power used for one hour.
Methyl mercury	An organic form of mercury, created from metallic or elemental mercury by bacteria in sediments, which is easily absorbed into the living tissue of aquatic organisms and is not easily eliminated. It bioaccumulates in organisms at the top of food chains, such as humans.

Minimum Flow	The lowest flow release from all release structures in a dam and hydroelectric generating station.
Old Growth	Old, structurally complex stands comprising mainly shade-tolerant and regenerating tree species, although older seral and long-lived trees from a disturbance such as fire may still dominate the upper canopy; snags and coarse woody debris in all stages of decomposition and patchy under stories typical; under stories may include tree species uncommon in the canopy, because of inherent limitations of these species under the given conditions; time since disturbance generally > 140 years.
Outage	A term used to describe when a piece of equipment has been taken out of service for planned or unplanned maintenance or repairs.
Overburden	The layer of natural materials that overlie bedrock. Typical materials would include soil, sand, granular deposits, and glacial lacustrine materials.
Passive Property Acquisition Plan	BC Hydro's program that gives property owners whose property is potentially impacted by the Project the voluntary option of selling their property to BC Hydro before the project has obtained regulatory approval. Upon receipt in writing from an owner that they wish to sell to BC Hydro, BC Hydro will, on a property-by-property basis, assess whether the property is potentially impacted by the project. Where appropriate, BC Hydro will initiate the process for acquiring the land. Property owners will be given the opportunity to lease back the property they sell to BC Hydro at market rental value until it is required for the project. Consistent with a previous commitment by BC Hydro, and a recommendation of the British Columbia Utilities Commission, all property owners will have the right to repurchase the property they sell to BC Hydro at the price paid by BC Hydro if the project is abandoned.

Particulate Matter	A complex mixture of extremely small particles and liquid droplets. It is made up of a number of components, including acids, organic chemicals, metals, and soil or dust particles.
Penstock	A closed conduit or pipe used to convey water under pressure from the power intakes to the turbines of a hydroelectric power plant.
Power Intakes	The concrete structure that is used to channel or direct the flow of water into the penstocks of a hydroelectric power plant. Gates or valves, used to stop the flow of water to facilitate maintenance or for an emergency, are usually located in this structure.
Pre-Consultation	Pre-Consultation was held from December 4, 2007 through February 15, 2008 and was the first round of consultation held in Stage 2. The purpose of Pre-Consultation was to inform the design of the next two formal rounds of Project Definition Consultation during Stage 2 by asking participants how they want to be consulted and about what topics.
Project Definition Consultation	Project Definition Consultation took place in 2008 over two rounds of consultations during Stage 2. The purpose of Project Definition Consultation was to seek participant input into key topics related to the Project.
Discharge Capacities	Flow of water in cubic metres per second (m^3/s) that a turbine discharges when operating at its maximum capacity
Regional Groundwater Discharge Point	Point where groundwater daylights to surface.
Reliable Electricity	A measure of the adequacy and security of electricity service. Adequacy refers to the ability to satisfy load demand and system operational constraints. Security refers to the project's ability to respond to transient disturbances in the system.
Renewable Energy	Biomass, biogas, geothermal heat, hydro, solar, ocean, wind or any other prescribed resource (as defined in the B.C. *Clean Energy Act*).

Reservoir	An artificial lake used to collect and store water, such as for community water supply, irrigation or electricity generation.
Riverine	Relating to or resembling a river.
Run-of-River Hydro	Hydroelectric power generation at the rate of inflow without change as a result of storage in a reservoir.
Salmonids	Of, belonging to, or characteristic of the family Salmonidae, such as salmon, trout and whitefish.
Seasonality	A positive link between seasonal (winter/spring/summer/fall) weather patterns and a resource type's fuel source. For example, most Run-of-River resource options have seasonal water inflow characteristics in that significant inflows occur in the spring freshet period following winter snowmelt. Run-of-River projects do not have fuel storage and therefore generate with a corresponding seasonal profile.
Sedimentary Bedrock	Rock that is formed by the deposition of mineral or organic particles in water or on the Earth's surface by water, wind, mass movements, or glaciers.
Seral Species	Plant species of early, middle and late successional plant communities. The term is often used in a narrower sense in forest management to describe the dominant conifer vegetation that follows major disturbance episodes.
Spillway	A structure used to provide an efficient, controlled and safe means of releasing (spilling) water inflows that exceed the design capacity of the dam/reservoir. A spill can be forced, such as when there is not enough storage capability in the reservoir and the inflows exceed turbine discharge capacity, or planned as part of normal non-power release requirements.
Spillway headworks	The structure that is used to channel or direct the flow of water into the spillway. The spillway gates are usually located in this structure.

Stage 1	Review of Project Feasibility. During this initial stage, existing studies and historical information related to engineering, costs, environment and land, consultation and First Nations were reviewed. At the completion of Stage 1, BC Hydro determined that the Project was feasible and recommended to the provincial government that it be moved forward to the next stage.
Stage 2	Consultation and Technical Review. Stage 2 commenced in fall of 2007. Activities included extensive consultations with the public, stakeholders, communities, Aboriginal groups and property owners, as well as early discussions with the Province of Alberta and the Northwest Territories. The stage included the initiation of field studies to better understand current conditions related to the physical, biological and socio-economic environment, and to gather engineering and technical information regarding the design, construction and operation of the potential Project.
Stage 3	Environmental Assessment and Regulatory Review Stage. The Project is currently in Stage 3. Biological, physical and socio-economic baseline studies will continue. Engagement with Aboriginal groups, the public, agencies and communities will continue. Baselines studies will inform the effects assessment. An EAC Application will be submitted to the regulatory agencies for review. A decision will be made to move the Project forward to the next stage.
Stilling Basin	A basin, constructed at the outlet of a spillway, designed to dissipate the energy of fast-flowing water from a spill event and to help protect the riverbed from erosion.
Storage	The volume available in a reservoir to hold water for power generation or flood control.
Sulphur Hexafluoride	An inorganic, colourless, odourless, non-toxic and non-flammable gas. Used as a gaseous dielectric medium in the electrical industry.

Switchyard	A designated area at a power plant (hydroelectric, thermal, wind, etc.) containing the switching facilities and equipment needed for the purposes of connecting the power plant to the transmission system.
Tailrace	The area of the river immediately downstream of the generating station into which the water from the turbines is discharged.
Thermal Generation	A power plant that converts heat energy into electrical energy. The heat needed for thermal generation can be produced from a number of sources such as coal, oil, gas or nuclear fuel, and can drive the turbine directly, or can drive the turbine indirectly by first heating water into steam, which, in turn, is then used to drive the turbine.
Total Dissolved Gas	Measure of dissolved gas pressure in water where prolonged exposure to high levels may harm aquatic life.
Total Suspended Particulate	The quantity of solid particles in a gas or exhaust stream. Any finely divided material (solid or liquid) that is airborne with a diameter smaller than a few hundred micrometres.
Total Suspended Solids	Small particles of solid materials in water that cause cloudiness or turbidity.
Turbidity	The cloudiness or haziness of a fluid caused by individual particles (suspended solids) that are generally invisible to the naked eye, similar to smoke in air.
Peak Demand	Peak demand, peak load or on-peak are periods in which electrical power is expected to be produced for sustained periods at a significantly higher than average supply level. Peaks can fluctuate on seasonal, monthly or daily cycles. For example, in British Columbia, the winter peak periods occur on the coldest days of winter at breakfast and/or dinner time.

Water-to-Wire Equipment	Equipment in a generating station used directly in the production of electricity, such as generators, turbines, circuit breakers, penstocks, intake operating gates, and unit transformers. Inspection and maintenance of this equipment generally requires a generating unit to be taken out of service. Generating station equipment not used directly in the production of electricity includes cranes, building lighting and heating, air compressors, spillway operating gates, etc.
Watt (W)	A scientific unit of measurement of electrical power used to describe the rate of energy consumption of an electrical appliance. One watt is the power equal to one joule of energy per second; 750 watts is equivalent to one horsepower. Watts equal voltage times amperage.
Watt Hour (Wh)	The basic unit of measurement for consumption of electrical energy; equal to the wattage multiplied by the time in hours; the quantity of energy used when one watt is used for one hour.

15 List of Acronyms & Abbreviations

AAC	Allowable Annual Cut
ALR	Agricultural Land Reserve
ALC	Agricultural Land Commission
B.C.	British Columbia
BCCF	British Columbia Conservation Framework
BC Hydro	BC Hydro and Power Authority
BCEAA	British Columbia *Environmental Assessment Act*
BCEAO	British Columbia Environmental Assessment Office
BCCDC	British Columbia Conservation Data Centre
BCMOEM	British Columbia Ministry of Energy and Mines (includes reference to the former B.C. Ministry of Forests, Mines and Land)
BCMOE	British Columbia Ministry of Environment
BCMOF	British Columbia Ministry of Forests (now the BCMOFLN)
BCMOFLN	British Columbia Ministry of Forests, Lands and Natural Resource Operations (includes any reference to the former B.C. Ministries of Forests and Range, Agriculture and Lands, and Natural Resource Operations)
BCMOT	British Columbia Ministry of Transportation and Infrastructure (formerly the B.C. Ministry of Transportation and Highways)
BCUC	British Columbia Utilities Commission
BWBSmw1	Boreal White and Black Spruce
CEA Agency	Canadian Environmental Assessment Agency
CEAA	*Canadian Environmental Assessment Act*
m^3/s or cms	cubic metres per second
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWS	Canadian Wildlife Service
DAIR	Draft Application Information Requirements

DGC	Dependable Generating Capacity
EAC	Environmental Assessment Certificate
EIS	Environmental Impact Statement
ELCC	Effective Load Carrying Capability
DFO	Fisheries and Oceans Canada
DSM	Demand-Side Management
GHG	greenhouse gas
GWh	Gigawatt hour
GWh/yr	Gigawatt hour per year
ha	hectare
ICU	Intensive Care Unit
IEP	Integrated Electricity Plan
IPCC	Intergovernmental Panel on Climate Change
IR	Indian Reserve
IRP	Integrated Resource Plan
JIESC	Joint Industry Electricity Steering Committee
LRMP	Land and Resource Management Plan
LTAP	Long-Term Acquisition Plan
km	kilometre
kV	kilovolt
m	metre
MW	Megawatt
MW/hr	Megawatt per hour
NCC	Non-commercial Cover
PEL	Peace Lowlands
PEP	Provincial Emergency Program

PM	Particulate Matter
PRRD	Peace River Regional District
RAR	Riparian Area Regulations
RCC	Roller-Compacted Concrete
SARA	*Species at Risk Act*
SF6	Sulphur hexafluoride
TAC	Technical Advisory Committee
TEM	Terrestrial Ecosystem Mapping
TFL	Tree Farm Licence
THLB	Timber Harvesting Land Base
TRIM	Terrain Resources Information Management
TSA	Timber Supply Area
TSP	Total Suspended Particulate
VRI	Vegetation Resource Inventory
WUP	Water Use Plan