POWERING B.C. WITH CLEAN, RELIABLE ELECTRICITY FOR GENERATIONS

SPRING 2012
SITE C AT-A-GLANCE

DAM
Type: Earthfill dam
Height: 60 metres above riverbed
Length: 1,050 metres
Energy: 5,100 GWh/yr.
Capacity: Up to 1,100 MW

RESERVOIR
Total Reservoir Surface Area:
Approximately 9,330 hectares
Total Flooded Land:
Approximately 5,550 hectares
Length: 83 kilometres
Width: 2-3 times the current river (on average)
ABOUT SITE C

SITE C IS A PROPOSED THIRD DAM AND HYDROELECTRIC GENERATING STATION ON THE PEACE RIVER IN NORTHEAST B.C.

Site C is being proposed as part of BC Hydro’s overall program to invest in and renew the province’s electricity system.

Site C would provide up to 1,100 megawatts (MW) of capacity, and produce about 5,100 gigawatt hours (GWh) of electricity each year — enough energy to power the equivalent of about 450,000 homes per year in B.C.

As the third project on one river system, Site C would gain significant efficiencies by taking advantage of water already stored in the Williston Reservoir. This means that Site C would generate approximately 35 per cent of the energy produced at W.A.C. Bennett Dam, with only five per cent of the reservoir area.

BC Hydro has adopted a multi-stage planning and evaluation process for Site C. The project is currently in the environmental and regulatory review phase (Stage 3), which includes an independent environmental assessment process.

Subject to approvals, Site C would be a source of clean, reliable and cost-effective electricity in B.C. for more than 100 years.
B.C.‘S FUTURE ELECTRICITY NEEDS
B.C. IS GROWING AND SO IS OUR DEMAND FOR ELECTRICITY.

BC Hydro forecasts that the province’s electricity needs will grow by approximately 50 per cent over the next 20 years. This increase in demand is being driven by a projected population increase of more than one million residents and economic expansion.

As extensive as BC Hydro’s electricity supply is, it will not be enough to meet B.C.’s future electricity needs if demand continues to grow as projected.

To meet B.C.’s future electricity needs, BC Hydro is encouraging conservation, upgrading its facilities, building new transmission and distribution infrastructure, and investing in new supplies of clean energy (e.g., wind, run-of-river hydro, bioenergy).

With Site C, BC Hydro is planning now so that British Columbians will continue to benefit from clean, reliable and cost-effective electricity in the future.
ENVIRONMENTAL AND REGULATORY REVIEW

THE ENVIRONMENTAL ASSESSMENT PROCESS FOR SITE C IS THOROUGH AND INDEPENDENT.

Site C is in the early stages of a cooperative environmental assessment process by the B.C. Environmental Assessment Office (EAO) and the Canadian Environmental Assessment Agency (CEA Agency), which includes a joint review panel.

The environmental assessment process commenced in August 2011 and is anticipated to take approximately three years.

As part of the environmental assessment, BC Hydro is identifying and assessing potential project effects — environmental, economic, social, heritage and health — and opportunities to provide lasting benefits for the region and Aboriginal groups. Where effects cannot be avoided, BC Hydro is identifying and evaluating options for mitigation.

Site C requires environmental certification and other regulatory permits and approvals before it can proceed to construction. In addition, the Crown has a duty to consult and, where appropriate, accommodate Aboriginal groups.

ENVIRONMENTAL ASSESSMENT TIMELINE

Pre-Panel Review 24 months
- Canada-BC Agreement on EA process
- Advisory Working Group
- Environmental Impact Statement (EIS) Guidelines
- EIS (Application)
- Working Group Review of EIS Guidelines and EIS
- Public comment periods

Joint Review Panel and Report 8 months
- Panel’s sufficiency review of EIS
- Submissions (including from Aboriginal groups)
- Public hearings
- Panel report

Review of Panel Report and Decision 6 months
- Draft Referral Package Preparation (EAO)
- Steering Committee Review (EAO, CEA Agency, Responsible Authorities)
- Decision by Ministers/Cabinet

ABORIGINAL CONSULTATION AND ACCOMMODATION DISCUSSIONS
STAGE 3 STUDY TOPICS

BC HYDRO IS UNDERTAKING OR PLANNING A NUMBER OF STUDIES AS PART OF THE ENVIRONMENTAL ASSESSMENT.

The environmental review of Site C includes studies on environmental, economic, social, heritage and health topics. A summary is listed below.

ENVIRONMENTAL

Environment
- Land
- Water
- Air
- Electric and Magnetic Fields

Fish and Fish Habitat

Vegetation and Plant Communities

Wildlife Resources
- Butterflies and Dragonflies
- Amphibians and Reptiles
- Migratory Birds
- Non-Migratory Game Birds
- Raptors
- Bats
- Furbearers
- Ungulates

Greenhouse Gases

ECONOMIC AND LAND AND RESOURCE USE

Economic
- Local Government Revenue
- Labour Market
- Regional Economic Development

Traditional Lands and Resource Use
- Current Use of Lands and Resources for Traditional Purposes

Land and Resource Use
- Agriculture
- Forestry
- Oil, Gas and Energy
- Minerals and Aggregates
- Harvest of Fish and Wildlife Resources
- Outdoor Recreation and Tourism
- Navigation
- Visual Resources

SOCIAL, HERITAGE, AND HEALTH

Social
- Population and Demographics
- Housing
- Community Infrastructure and Services
- Transportation

Heritage Resources
- Palaeontological, Archaeological and Historic Resources

Health
- Human Health

ENGINEERING PLANS

- Clearing
- Construction Access Roads
- Construction Materials
- Dam Site Investigations
- Geotechnical Conditions
- Highway 29 Realignment
- Reservoir Impact Lines
- Worker Accommodation

The above list of studies is a summary only. It is not an exhaustive list. The list of studies may change as a result of input from regulators, government agencies, Aboriginal groups and the public.
STAGE 3 CONSULTATION

THROUGHOUT STAGE 3 THERE WILL BE OPPORTUNITIES FOR CONSULTATION AND INPUT BY THE PUBLIC, COMMUNITIES, ABORIGINAL GROUPS, PROPERTY OWNERS AND STAKEHOLDERS.

BC Hydro is leading several streams of public and stakeholder consultation during Stage 3. These BC Hydro-led consultations are separate from the consultation opportunities provided by the cooperative federal-provincial environmental assessment process. BC Hydro-led consultations include:

**Regional and Local Government Liaison:** BC Hydro is engaging key municipal, regional and provincial government stakeholders.

**Property Owner Liaison:** BC Hydro is providing information to and gathering input from property owners and leaseholders in the Site C project area.

**Local Area Consultations:** BC Hydro will be conducting area-specific consultations where local issues arise (e.g., Hudson’s Hope berm).

**Project Definition Consultation:** BC Hydro is conducting broad public and stakeholder consultations in the spring and fall of 2012 on a range of topics (e.g., Highway 29 realignment, recreation).

**Aboriginal Consultation and Engagement:** BC Hydro and Aboriginal groups are engaged in a thorough consultation and engagement process that continues through all stages of the project.

CONSULTATION AND THE ENVIRONMENTAL ASSESSMENT PROCESS

Consultation is a key part of the cooperative federal-provincial environmental assessment process.

Several public comment periods will take place as part of the environmental assessment process. These include a public comment period in the spring of 2012 on the nature and scope of environmental studies [Environmental Impact Statement Guidelines].

In addition, there will be consultations on BC Hydro’s Environmental Impact Statement [Application].
The Site C project design includes the following key project components:

- An earthfill dam, approximately 1,050 metres long and 60 metres high above the riverbed.
- A generating station with six 183 MW generating units.
- An 83-kilometre-long reservoir that would be, on average, two to three times the width of the current river.
- The realignment of up to six segments of Highway 29 over a total distance of up to 30 kilometres.
- A berm at Hudson’s Hope along the shoreline.
- Two new 500 kilovolt AC transmission lines that would connect the Site C facilities to the existing Peace Canyon Substation, along an existing right-of-way.
- Access roads in the vicinity of the site and a temporary construction access bridge across the Peace River at the dam site.
- Construction of two temporary cofferdams across the main river channel to allow for construction of the earthfill dam.
- Worker accommodation options include two construction camps at the dam site, with other workers being housed off site and in the region.

**Key Design Features**

Site C design upgrades include the following features:

- The south valley wall under the dam, the generating station and the spillway are reinforced with a long concrete buttress to improve foundation stability and provide greater seismic protection.
- An overflow auxiliary spillway enhances safety so that even if the plant loses all power, it can safely pass the upstream flows.
- A centre wall divides the gated spillway into two sections, allowing either section of the spillway to be maintained or repaired, while retaining spill capacity in the other section.
- Larger turbines result in increased generating capacity. This provides improved capability for BC Hydro to meet winter peak loads, and allows for greater integration of intermittent renewable sources, such as wind.
SUPPORTING RENEWABLES

To facilitate the development and use of clean and renewable electricity sources, there is a need to back up intermittent sources — such as wind and run-of-river hydro — with reliable capacity.

As a dependable and flexible resource, Site C would be able to quickly increase or decrease generation to match the availability of intermittent resources.
A COST-EFFECTIVE RESOURCE OPTION
LARGE HYDRO PROJECTS HAVE A SIGNIFICANT UPFRONT CAPITAL COST, LOW OPERATING COSTS, AND A LONG LIFE OF MORE THAN 100 YEARS.

Site C would have an estimated capital cost of $7.9 billion, and it would produce electricity at a cost between $87 and $95 per megawatt hour at the point of interconnection. This would make Site C among the most cost-effective resource options to help meet B.C.’s future electricity needs. Site C would also provide significant additional benefits such as reliable capacity and flexibility.

There is no effect on today’s rates from Site C, as costs are deferred until the project begins generating electricity. This ensures that the costs for Site C are paid by the ratepayers who are benefiting from the project.

BC Hydro is committed to keeping rates as low as possible. To reduce the rate impact on customers, BC Hydro anticipates that the costs for Site C would be amortized over a long period. This amortization period and rate impact would be determined through a future regulatory process with the British Columbia Utilities Commission.

BC HYDRO’S INTEGRATED ELECTRICITY SYSTEM

BC Hydro delivers electricity to its three customer groups — residential, commercial and industrial — through an interconnected network of over 18,500 kilometres of transmission lines and 57,648 kilometres of distribution lines.

Each of the three customer groups accounts for about one-third of total electricity use in B.C.

As an integrated system, BC Hydro does not pinpoint a single generation resource, such as Site C, to a single customer group. All BC Hydro customers — residential, commercial and industrial — would benefit from the electricity generated by the Site C project.
REGIONAL ECONOMIC DEVELOPMENT

SITE C WOULD FOSTER ECONOMIC DEVELOPMENT THROUGH CONSTRUCTION-RELATED JOBS AND BUSINESS OPPORTUNITIES.

Site C is estimated to create approximately 7,000 person-years of direct employment during the seven-year construction period. It is estimated to create up to 35,000 direct and indirect jobs through all stages of development and construction.

The construction of Site C would also provide significant business opportunities for small, medium and large businesses, including northern and Aboriginal businesses.

Once in operation, Site C would contribute revenues to the local and provincial governments through water rentals, grants-in-lieu, and other taxes.

Other long-term benefits associated with the Site C project will be determined in Stage 3 in consultation with the public, local governments, Aboriginal groups and the Province.

JOB REQUIREMENTS

Below is a list of just some of the jobs that will be required during the development and construction of Site C.

- Biologists
- Botanists
- Carpenters
- Cement masons
- Culinary workers
- Electrical workers
- Engineers
- Environmental technicians
- First aid workers
- Foresters
- Ironworkers
- Labourers
- Lab technicians
- Machinists
- Office personnel
- Painters
- Pipefitters
- Project management
- Security personnel
- Surveyors
- Technologists
- Truck drivers
- Welders
LEARN MORE ABOUT SITE C

For more information on Site C, visit us on the web at bchydro.com/sitec.

You can sign up to receive email updates on the project.

Companies and individuals can also sign up online to a business directory to receive notification of business opportunities associated with the project.