SITE C CLEAN ENERGY PROJECT

VOLUME 1 APPENDIX F

PROJECT BENEFITS SUPPORTING DOCUMENTATION

PART 1 – PROJECT COST ESTIMATE

FINAL REPORT

November 2012

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VOLUME 1, APPENDIX F, PART 1
PROJECT COST ESTIMATE

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Project Cost Estimate

This document summarizes the components of the project costs, and the methodology for preparation of the cost estimate.

Construction Period Costs

A detailed capital cost estimate has been prepared based on the current design (as described in Volume 1 Section 4 Project Description) and market prices for labour, equipment and materials. The capital cost estimate for the Project is $7.9 billion in nominal ("as-spent") dollars.

The cost estimate for the Project was built as follows:

- *Direct Construction Costs* were estimated using a bottom-up approach using detailed quantity estimates, and assumptions for construction scheduling and sequencing, work crews and productivity, equipment and cycle times, production rates, access and cranage. Budget estimates from major equipment suppliers were obtained where appropriate. Quantities were estimated from engineering drawings for the Project design, and unit prices were estimated based on market information. A detailed construction schedule was prepared and utilized to sequence work activities and to assist in the identification and quantification of the work crews and major construction equipment required.
- *Indirect Costs* were estimated using a mix of detailed estimates and industry experience with similar work. Costs associated with BC Hydro management, supervision, and engineering were estimated based on expected staffing levels from the present development phase through the construction period. Other costs, such as construction insurance and mitigation and compensation, were estimated based on experience with similar projects both in the BC Hydro system and in other jurisdictions national and worldwide.
- *Contingencies* on the direct construction costs were evaluated for each major work package, and considered the following categories of risk:
    - Technical Content (level of precision of design and associated quantity take-offs)
    - Precision of Estimate (productivities, equipment selection, material costs and market variations)
    - Schedule (acceleration of activities to maintain overall schedule)
- *Inflation* was added to reflect cost increases that are anticipated to occur between the time of the estimate and the time at which the costs would actually be incurred.
- *Interest during Construction* was added to reflect the carrying cost of capital between the time at which costs are incurred and the completion of the asset.

Table 1 shows the breakdown of the estimated Project capital costs.

Table 1 Project cost estimate breakdown

	($ millions)
Dam and Associated Structures	**1,790**
Earthfill Dam	
Approach Channels & RCC Buttress	
Spillway, Intakes & Penstock	
Left (North) Bank Stabilization	
Cofferdams, Dikes, Diversion Tunnels	
Power Facilities	**990**
Powerhouse & Switchgear Building	
Stations and Transmission	
Offsite Works	**530**
Highway 29 Relocation, Access Roads, Clearing, Land & Rights	
Construction Management & Services	**515**
Worker Accommodation	
Construction Management & Construction Services	
Total Direct Costs	**3,825**
Indirect Costs	**1,005**
Development Costs, including sunk costs	
Regulatory Costs	
Construction Insurance	
Management & Engineering	
Mitigation & Compensation	
Contingency	**730**
Total Construction and Development Costs (2010 real dollars)	**5,560**
Inflation	**790**
Interest During Construction	**1,550**
Total Construction and Development Costs (nominal)	**7,900**

Due to engineering, environmental, and consultation work done in previous stages of the Project, the Project had reached a level of project definition to characterize the $7.9 billion project cost estimate as a Class 3 cost estimate as defined by the Association for the Advancement of Cost Engineering (AACE 2012).The project cost estimate includes an appropriate level of contingency to reflect uncertainty in future conditions.

The capital cost estimate was prepared by the Project's Integrated Engineering Team, consisting of BC Hydro staff and consultants. In addition, the capital cost estimate was reviewed by BC Hydro estimators and has undergone an external peer review by KPMG. This external review concluded that the methodologies and assumptions used in the cost estimate were appropriate. While the final costs for any capital project can only be known

after a competitive procurement process is complete and a final bid is accepted, BC Hydro expects project costs will be to be within the bounds of the current capital cost estimate in ordinary market conditions.

Operating and Sustaining Capital Period Costs

Costs during the operating phase for the Project have been estimated based on BC Hydro experience with comparable sized facilities and equipment within the BC Hydro system. The components of cost during operations are as follows:

- *Water Rentals* – Water rentals are fees paid to the Government for the use of water for power generation or storage. There are three categories of water rentals applicable to BC Hydro:
    - Energy water rentals, paid based on the amount of energy generated
    - Capacity water rentals, paid based on the rated capacity of the facility
    - Storage water rentals, paid based on the amount of water stored in the reservoir.

  Current water rental rates were used along with the energy, capacity, and storage associated with the project design to estimate yearly water rentals. Of these three categories, energy water rentals account for an average of 88% of the total costs, capacity water rentals 12%, and storage water rentals <1%. Water rental rates are posted by the BC Water Comptroller and are expected to escalate at a rate based on the Consumer Price Index.

- *Grants-in-lieu of taxes* – Grants-in-lieu refers to payments made by BC Hydro in respect of electricity generating facilities located within an electoral area. BC Hydro's generating facilities are generally exempt from assessment and taxation as per B.C. Order in Council 2091/82, and these grants are in lieu of general, local improvement, and regional district levies.

  The amount of grants-in-lieu paid by BC Hydro, if any, is at the Province's sole discretion. However, generally grants-in-lieu for existing BC Hydro generation facilities are based on the capacity of the project. Current rates for grants-in-lieu at existing BC Hydro facilities were used to estimate grants-in-lieu for the Project.

- *School Taxes* – BC Hydro pays school taxes to local communities based on the assessed value of transmission assets. The school tax rate is determined by BC Assessment through a legislated costing manual.

  School taxes for the Project were estimated based on the current school tax rate and the estimated value of the transmission assets in the current project design.

- *Operations and Maintenance Costs* – Operating and maintenance costs are non-capital costs associated with the project post-commissioning. These would generally consist of:
    - Wages and benefits for plant staff
    - Maintenance costs
    - General and administrative costs

  Operating costs for the Project were estimated based on the operating costs associated with existing BC Hydro projects of similar size and characteristics to Site C. Providing for a long service life of the Project through proper maintenance is an important factor in achieving the low cost energy benefits of the project

- *Sustaining Capital* reflects the capital investments BC Hydro expects to make in the Project in order to maintain the project operations at required levels. This generally consists of the refurbishment or replacement of project components (e.g. turbines or generators). Sustaining capital expenditures vary significantly from year-to-year as different project components require rehabilitation or replacement at different intervals. Table 2 shows the annual cost that would have an equivalent net present value to the forecast sustaining capital for the Project over the financial planning life of 70 years.

Table 2 shows the breakdown of the annualized, real dollar operating costs for the Project.

Table 2 Annualized operating costs

	(*$ millions, F2011$*)
Water Rentals	40.2
Grants-in-lieu & School Taxes	2.6
Operations and Maintenance Costs	7.5
Annualized Sustaining Capital	9.3

Unit Energy Cost

The unit energy cost (UEC) of a resource option represents the annualized cost of the energy generated, and provides a basis for comparing resource options. The actual costs of the project to ratepayers will vary year-to-year and will be subject to policy decisions by the B.C. Utilities Commission regarding the scope and timing of cost recovery from ratepayers. These decisions are expected to be part of a future BC Hydro revenue requirements application.

Levelized unit energy costs are calculated by taking the present value of the annual costs of an energy resource and dividing by the present value of its annual energy benefit. The unit energy cost for the Project, in 2011 dollars, is $87/MWh using a 5.5% real dollar discount rate (consistent with BC Hydro's current planning rates), and is $95/MWh using a 6.0% real dollar discount rate (consistent with the rate used for evaluation of alternatives in BC Hydro's Integrated Resource Plan and in Volume 1 Section 5 Needs for, Purposes of, and Alternatives to the Project). When escalated to fiscal 2013 dollars, these unit energy costs are $91 and $99 respectively. The term of this analysis is 70-years, equivalent to the financial planning life of the Project.

The levelized unit energy cost figures above represent the cost of the energy as delivered to the point of interconnection (POI) with the bulk transmission system. To reflect the cost of energy delivered to the major load centers in BC (i.e. the Lower Mainland), several adjustments are made to the unit energy cost:

- *Cost of Incremental Firm Transmission*: The cost of incremental firm transmission provides a general indication of the long term unit cost of bulk transmission system reinforcement from one region to the next, and is expressed as a region-to-region bulk transmission capacity cost.

- *Line Losses Adjustment*: This adjustment reflects the cost of losses associated with delivering energy from the project location to the Lower Mainland, on a stand-alone basis.
- *Capacity Credit*: To reflect the value of dependable capacity to the BC Hydro system, a capacity credit is applied to projects with an hourly firm product (such as the large hydro-electric facilities).

The composition of the unit energy cost at the point of interconnection (using a 6.0% real discount rate) as well as adjustments to reflect the cost of delivering the energy to the Lower Mainland, is shown in Table 3 below. Capacity credits are provided for the low ($89/kW-yr) and the high ($440/kW-yr) ends of the range of capacity value from Volume 1 Section 7.1.2.2, as well as a mid-level capacity credit based on the cheapest pumped storage capacity identified ($216/kW-yr). All capacity credit scenarios assume capacity resources operate at an 18% load factor.

Table 3 Project unit energy cost at 6.0% real dollar discount rate

	Unit Energy Cost at 6.0% Discount Rate ($/MWh, Fiscal 2011)		
Capital Cost	83.25		
Sustaining Capital	2.00		
Water Rentals	7.75		
Operating Costs	1.50		
Grants-in-Lieu and Taxes	0.50		
Unit Energy Cost at Point of Interconnection (POI)	95.00		
Cost of Incremental Firm Transmission	+5		
Line Losses Adjustment	+11		
Transmission Adjusted Unit Energy Cost	111.00		
Capacity Credit	-97 (high)	-47 (mid)	-19 (low)
Unit Energy Cost Effective at the Lower Mainland	14.00	64.00	92.00

Notes:

(1) UEC calculations above include sunk costs, which are not included in the economic evaluation of the project. Removal of sunk costs reduce the UEC by approximately $5/MWh.

(2) The Portfolio analysis in Section 5.5.4 uses the Transmission Adjusted Unit Energy Cost, escalated to F$2013 and without sunk costs. Portfolios that require capacity back-up have a cost added to reflect this, rather than providing a credit to resources that provide capacity as in this table.

As the above table demonstrates, the levelized unit energy cost of the Project is primarily composed of up-front capital costs, while the long-term operations costs are comparatively low. The total ongoing operating and sustaining capital costs are just under $12 of the

$95/MWh levelized unit energy cost at the point of interconnection. The Site C Clean Energy Project would be cost effective because after the capital investment, the Project will generate electricity with low operating costs for the duration of its operating life of more than 100 years.

References

AACE International, *International Recommended Practice No. 10S-90, Cost Engineering Terminology* (3 December 2012).

SITE C CLEAN ENERGY PROJECT

VOLUME 1 APPENDIX F PROJECT BENEFITS SUPPORTING DOCUMENTATION, PART 2 LOCAL PARTICIPATION STRATEGIES

FINAL MEMORANDUM

November 2012

SITE C CLEAN ENERGY PROJECT

VOLUME 1 APPENDIX F PROJECT BENEFITS

SUPPORTING DOCUMENTATION

PART 2 LOCAL PARTICIPATION STRATEGIES

FINAL MEMORANDUM

November 2012

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1 INTRODUCTION

The Site C Clean Energy Project is a large capital project that will require large amounts of labour and business participation. BC Hydro has an objective for the Project to provide lasting economic and social benefits for northern communities, Aboriginal groups, and the province. A key component in achieving this objective is the participation of local labour and businesses in the construction of the Project.

This memorandum outlines key components of BC Hydro's strategy for increasing participation of businesses in the Northeast Development Region (NEDR) in the construction of the Project.

2 OBJECTIVES AND LEGAL FRAMEWORK

2.1 Objectives

The Site C Clean Energy Project is intended to be a project that will support BC's energy objectives, as stated in the *Clean Energy Act*, including the objectives of electricity self-sufficiency, generation of at least 93% of the electricity in B.C. from clean and renewable resources, job creation, and greenhouse gas reduction.

BC Hydro intends to achieve the objectives of the Project through the procurement of the Project which will create construction-related jobs and business opportunities. BC Hydro has developed specific procurement objectives to attain these results.

- Support the objectives of the Project, including to provide lasting economic and social benefits for northern communities, Aboriginal groups and the province
- Achieve value for money for the ratepayer, through delivering maximizing cost-effective project performance and structuring a procurement process that is fair, transparent, and competitive and that is reflective of market conditions
- Meet the project schedule
- Meet the project budget
- Optimally manage project risks, by allocating risks to the party best able to manage them

2.2 Legal Framework

BC Hydro's procurement activities are governed by Canadian common law, as well as legislation and trade agreements including the following:

- **Agreement on Internal Trade (AIT)**
  The Agreement on Internal Trade aims to reduce barriers to the movement of persons, materials, services and investments within Canada. Under its direction, BC Hydro is obligated to follow certain procurement procedures to avoid creating barriers to free trade within the country (including provincial/local preference). In particular, under the terms of the AIT, all procurement opportunities meeting or exceeding established thresholds must be accessible to all Canadian suppliers through the use of electronic tendering systems or other means that satisfy the requirements of public advertisement. BC Hydro uses BC Bid as the means to satisfy this requirement.

- **Trade, Investment and Labour Mobility Agreement (TILMA) and New West Partnership Trade Agreement (NWPTA)**
  The British Columbia - Alberta Trade, Investment and Labour Mobility Agreement is intended to remove barriers to trade and requires non-discrimination in the purchase of materials, services and construction from within the economic region (BC and Alberta). The New West Partnership Trade Agreement builds on TILMA and includes Saskatchewan in the scope of the agreement. The concept of non-discrimination under TILMA/NWPTA is similar to that covered by the AIT, but the thresholds that apply are lower under the TILMA/NWPTA regulations. Crown Corporations including BC Hydro are subject to TILMA/NWPTA procurement requirements.

3 BUSINESS PARTICIPATION

3.1 Current status of regional business community

The attributes of the labour market in the Northeast Regional District (NEDR) were studied by Golder Associates as part of the Economics Assessment for Site C (Volume 3, Section 17). This baseline study was based on provincial government data sets, the Statistics Canada business register, and other available data.

The main economic activities in the NEDR are generally in primary industries, and include energy, agriculture, forestry, mining, and tourism. The energy industry has been the major driver of growth in the region in recent years, and has contributed to the NEDR number of business establishments growing at nearly double the rate of the rest of the province. There is a range of diversity in the economic activity in the NEDR, with Dawson Creek being one of the most diverse economies in the province, while the diversity in Fort St John has decreased as the oil and gas industry has expanded.

There are a significant number of small construction companies in the NEDR, with the vast majority of the construction companies having fewer than 20 workers. Transportation / warehousing, retail trade, and mining / oil & gas were the next industries with the highest number of businesses in the NEDR. There are very few large companies (i.e. >200 employees) in the NEDR.

3.2 Procurement approach overview

The development of the procurement approach for Site C considered a range of packaging and delivery models for the construction of Site C. The set of options that best fulfilled the procurement objectives (as outlined in section 2.1 above) was selected as the recommended procurement approach. The recommended procurement approach for Site C comprises multiple packages or bundles of work that would be procured using a variety of procurement models, with a resulting wide range of contract scope, schedule, and value. This procurement approach is expected to result in opportunities for small, medium, and large business to participate in the construction of the Site C project.

BC Hydro recognizes the importance and value of using local and regional businesses for the construction of the Site C project, and has an expectation of sourcing approximately 15 per cent labour from the NEDR. BC Hydro is committed to enhancing awareness about procurement opportunities to ensure local participation in the process, while staying within the legal and policy framework and delivering value to the BC Hydro ratepayer.

The business opportunities associated with Site C are well aligned to skills present in the local business community as summarized in Section 3.1. While local businesses may not have sufficient capacity to undertake the major contracts on the Project on their own, the skills available along with local knowledge and lower mobilization costs are expected to create opportunities for these businesses to contract directly with BC Hydro for small and medium –sized contracts, or as sub-contractors for the primary contractors on the larger contracts. BC Hydro has also identified some tools for encouraging and enabling local participation in these opportunities, as summarized in the following section.

3.3 Tools for engaging local businesses

Enhancing Local Awareness and Accessibility

A key component of enabling local businesses to participate in procurement and construction of Site C is ensuring these local businesses are aware of the opportunities. Enhancing awareness and accessibility among local and regional businesses is critical to ensuring knowledge and participation in the procurement process. Efforts to increase participation will help generate competition and deliver value for the ratepayer.

BC Hydro ensures accessibility for procurement opportunities through the use of B.C. Bid. BC Bid is an electronic sourcing and bid notification system used by public sector buyers in BC. This allows BC Hydro to advertise bid opportunities widely, and for potential bidders to receive notifications of these opportunities and access both physical and electronic bid documents.

As part of its Business Liaison Program, BC Hydro has partnered with local and provincial business organizations to host Business Information Sessions for the Site C project. A number of these sessions have been held in communities in northeast B.C., thus allowing local and regional companies the opportunity to learn more about business opportunities associated with the project. These sessions have been held early in the procurement process for Site C to provide businesses with sufficient time to prepare to participate if they wish to.

One of the key methods for enhancing local awareness of the Project is the Site C Business Directory. BC Hydro has maintained the Site C Business Directory since 2009, and as of October 2012 there are 491 businesses or individuals that have registered to indicate their interest in participating in work on the Site C project. BC Hydro sends updates to companies registered in the Business Directory in order to keep them informed about the overall project status and schedule. BC Hydro also uses the business directory to identify companies interested in a specific component of work, and ensures that registered companies interested in such work receive notifications when procurement begins. This process has been used for procurement to support services in the development stage of the project, and would continue for construction contracts.

Once procurement activities begin, BC Hydro will promote local awareness through advertising of procurement opportunities in community newspapers. BC Hydro will also maintain relationships with local Chambers of Commerce, economic development associations, and the BC Business Council to ensure widespread awareness of the project and associated opportunities.

Enabling Partnerships

A key method for enabling participation of local businesses in the Site C Project is facilitating partnerships between businesses. This allows local businesses to participate in contracts even when the capacity of companies in the NEDR is insufficient to undertake the entire scope of work.

BC Hydro plans to hold networking sessions where contractors from outside of the region can meet with local suppliers. This is intended to encourage partnership with local businesses, and has the added expected benefit of increasing the quality of the bids received for the contracts by increasing overall knowledge of the local market.

These networking sessions can occur at various times within the procurement process. In some cases, BC Hydro may hold networking sessions as part of the qualification stage to encourage the proponents responding to the qualification process to include local content. This stage of networking can be accomplished by holding bidder meetings in the project area where regional businesses are encouraged to attend. Additional enabling activities can be accomplished after the qualification stage through a more dedicated networking meeting where short-listed contractors can meet with local businesses.

BC Hydro also plans to share the Site C Business Directory with proponents both during and after the bid process for major contracts. This will enable proponents to identify potential local partners.

Local Participation to Date

As part of the development of the Site C project, BC Hydro has implemented many of the tools discussed above. More than a dozen contractors and consultants based in the NEDR have worked as either primary contractors or subcontractors for BC Hydro since 2008. Equally as many businesses with offices in the region have also worked for BC Hydro since 2008. In addition to these contractors and consultants, BC Hydro has accessed a large number of regional vendors for goods and services on the project, including vehicle rentals, accommodations, catering, print and radio advertising, communications equipment, heavy equipment rentals, and safety clothing and equipment to name a few.

4 LABOUR PARTICIPATION

4.1 Current status of labour market

The attributes of the local labour market were studied by Golder Associates as part of the Economics Assessment for Site C (see Volume 3, Section 20). This baseline study was based on a range of census data, labour market surveys, and other indicators.

The local area has a higher labour market participation rate than the provincial average. While unemployment rates are variable over time, the rate has generally been less than the provincial average and has been very low in the most recent surveys. The local labour force has been growing more slowly than the provincial labour force, but the local construction labour force that would potentially participate in Site C has grown much quicker than the overall labour force. The local area

has a high proportion of labour in trade occupations, which aligns well with the requirements of a capital project such as Site C.

Overall, the local labour market is considered highly employed, which will create challenges in hiring for a large capital project such as Site C. Evidence from market surveys indicates there is already difficulty in hiring for specific positions, including trades and technical jobs as well as non-technical jobs such as truck drivers and service positions. Demand for skilled workers is expected to continue to grow in the region, as a result of major projects underway or planned for the northeast of BC over the next several years. Additional steps may be required of BC Hydro or the companies and businesses involved in the construction of the Project in order to ensure the supply of skilled workers required to complete the Project on schedule and within budget.

4.2 Expectations for local labour component

If the Site C Clean Energy Project proceeds to construction, it will require an estimated 10,500 person-years of construction-related employment, as well as additional labour in indirect and induced labour. BC Hydro believes that there will be significant opportunities for local businesses and suppliers to participate and therefore employ local labour. As a planning assumption, BC Hydro expects approximately 15% of the direct labour required for the project will come from the local labour force, and 80% from within British Columbia.

In order to deal with the highly employed labour market and meet the requirements for labour on the Project, BC Hydro has been considering potential tools for increasing the local labour force. These tools are discussed further in Section 4.3.

4.3 Tools for expanding local labour availability

There is a consensus in the NEDR of a need to increase the availability of labour and to broaden the skills of the regional labour force. There are a number of initiatives underway through various provincial organizations. In order to ensure an available local labour supply for Site C and other local BC Hydro projects, BC Hydro is pursuing some additional tools for expanding the local labour force. BC Hydro will be working with contractors, employers, educational institutions, local and aboriginal community groups, employment agencies and related organizations to advance these initiatives in an effort to secure an available supply of qualified local workers.

- Skilled Trades Capacity Building

  BC Hydro understands the importance and need for a skilled workforce, in light of its current facilities in the NEDR, as well as its proposed Site C Clean Energy Project. BC Hydro has participated in a variety of initiatives in an effort to develop skilled trades workers in northern BC.

  - Northern Lights College Bursary

    In September of 2012, BC Hydro announced its $1 million in funding a Student Bursary program with Northern Lights College Foundation to support trades and skills training at Northern Lights College campuses in northeast BC. BC Hydro is providing the bursary

funding to the Northern Lights College Foundation to be disbursed over a five-year period to support the development of skilled workers in northern BC, targeting those students who may not otherwise have access to post-secondary education. Fifty per cent of the funding for bursaries will be dedicated to Aboriginal students. The funding is intended to increase participation in trades training in the NEDR, which will benefit industry and local and Aboriginal communities in northeast BC, and increase the supply of locally available skilled labour for the Site C Clean Energy Project.

- Northeast (BC) Regional Workforce Table Task Force Member ("NE RWT Task Force")

  BC Hydro is participating on the Northeast Regional Workforce Table Task Force. The NE RWT Task Force has been established to gain an understanding of the labour demand and supply in Northeast BC, in light of the proposed projects for that region, including identifying the skilled labour demands for the Northeast BC region, the availability of skills training in the region, and the resultant gaps. The NE RWT Task Force will then develop a training plan for the effective alignment of existing skills training programs with the prospective employment needs and economic opportunities specific to the Northeast BC region to maximize the availability of skilled workers.

- Northern Opportunities

  BC Hydro's Site C Clean Energy Project is also an active participant and contributor to the Northern Opportunities Partnership. This Partnership has been established to provide a forum for industry, local school districts and Northern Lights College to identify and discuss future employment needs, to contribute funding to support the work of career counsellors in local schools and to encourage students to take trades training while completing their high school requirements through the Dual Credit Program. The Site C Clean Energy Project has committed $105,000 to Northern Opportunities over a three year period (i.e. 2011 to 2013) towards supporting the Dual Credit Program offered in northeast BC schools. This initiative has been successful in attracting new entrants into trades training and will provide another means of augmenting the existing availability of skilled trades workers; thereby, increasing the skilled labour pool in northeast BC. Further information about the Site C Clean Energy Project's participation in this Partnership is contained in Section 5.3.

- Liaising with local education & training institutions (eg. colleges, school districts, etc.)

  BC Hydro has commenced early consultation discussions with local educational and training institutions (e.g. colleges and school districts) in the Project region. BC Hydro expects to continue to build partnerships with local education and training institutions in order to identify the necessary training required, facilitate its availability to local and aboriginal communities and promote programs that will not only increase training participation levels but also promote transferrable skills training.

In addition to these initiatives, BC Hydro may also work collaboratively with contractors, training providers, and other associations to facilitate apprenticeship intake opportunities as is reasonable or appropriate. This would also enable those who receive the training to be able to obtain the practical hours of experience to further themselves along the levels of their apprenticeship programs.

- Enabling Activities
  - Promotion of job opportunities within the local community:

    BC Hydro plans to foster a diverse workforce that represents the communities we serve within B.C. and as such, we expect to work with contractors to support diversity hiring practices (for additional information please see Section 5 on Aboriginal Participation). BC Hydro also expects to work with construction contractors to facilitate hiring local residents, BC residents and residents from other parts of Canada. BC Hydro has already begun providing local communities with labour market information relating to the Project as well as information about the types of prospective employment opportunities, once the Project receives regulatory approval to proceed. BC Hydro has identified below the methods that may be employed to ensure that the local community is aware and has access to information about the job opportunities on the Project:
    - Conduct local information sessions about Project Job Opportunities
    - Advertise job opportunities or links to job opportunities in local community papers
    - Participate in local community job/career fairs and liaise with local employment agencies
    - Establish a job posting portal that provides information about current openings or provides web links to contractors' job posting portals
    - Liaise with contractors in their recruitment efforts
    - Work with trades training institutions, contractors and unions to facilitate the apprenticeship intake process with prospective employers

  - Collaborate with local community partners for the provision of a Day Care facility:

    One of the challenges already identified for prospective workers is the availability of day care facilities within the Project area. BC Hydro is currently exploring opportunities to partner with local agencies to increase the availability and suitability of day care facilities for workers in the NEDR.

5 ABORIGINAL PARTICIPATION

5.1 Current status of Aboriginal business community

Businesses owned by Aboriginal persons and organizations are found in First Nations communities and non-Aboriginal communities (both incorporated and unincorporated) in the local area. As described in section 3.3, BC Hydro created a Site C Business Directory for businesses to state their characteristics and capabilities for undertaking contractual work associated with the Project. As of March 12, 2012, 48 of the registrants had self-identified Aboriginal ownership, and all but four of these were Aboriginal businesses based in the LAA. The Aboriginal business registrants based in the LAA accounted for 12% of the total registration and 14% of the B.C. registration.

Table 5.1 summarizes the types and range of businesses in the First Nations communities of Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations, using information provided by these communities to BC Hydro

(Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations). Other First Nations within northeast BC or nearby regions may in the future provide BC Hydro with further information about aboriginal businesses within their communities.

Volume 3 Regional Economic Development provides further context for aboriginal businesses.

Table 5.1 Current business activity of First Nations in the local assessment area (2012)

First Nation	Business Activity
Doig River First Nation	Economic development function in band administration First Nation-owned businesses, including Doig River Energy, an oil and gas industry service company 2011 directory of member-owned businesses listed 13 enterprises Road building, general contractors, forestry, oilfield (maintenance, facility construction, turnarounds), seismic, first aid and safety services, reclamation
Halfway River First Nation	First Nation-owned ranch 2011 estimate of five on-reserve members with businesses Gravel excavation and sales
Prophet River First Nation	First Nation-owned Prophet River Operations Ltd. Restaurant and commercial services, camps, and catering Four or five member-owned contracting companies
West Moberly First Nations	Several First Nation-owned businesses, including Dunne-za Ventures LP (contract services for mineral development and forestry sectors), joint venture in Dokie Wind Farm, Tsay-Keh-Ne-Cheleh Ranch, partnerships in two non-replaceable forest licences with Canfor, and Dunne-Za Lodge (on Moberly Lake) Gravel extraction and sales Estimate of seven member-owned businesses Logging and backhoe contracting business

NOTE:

Source: Volume 3 Appendix B First Nations Community Baseline Reports, Part 7 Community Baseline Report and EIS Integration Summary Table for Doig River First Nation, Halfway River First Nation, Prophet River First Nation, and West Moberly First Nations)

Typically, each First Nation in the local assessment area has at least one First Nation-owned business that provides a range of contracting services, such as excavation, road building, vegetation clearing, and first aid, to primary resource industries in the region. Table 5.2 summarizes the sectoral focus, services, and clients of several First Nations-owned companies.

Table 5.2 First Nations-owned contracting businesses in the local assessment area

Company	Business Activity
Dunne-za Ventures LP (West Moberly First Nations)	Sectoral focus – oil & gas, forestry and mining sectors Contracting services – right-of-way clearing, road building, reclamation, logging, trucking, bridge design, first aid, and project management Clients – such as Encana, Shell Canada Energy, Devon Canada, Canfor,

	West Fraser, Tembec, Pine Valley Coal, Peace River Coal, and Western Canadian Coal Operations base – Fort St. John, B.C.
Duz Cho Construction LP (McLeod Lake Indian Band)	Sectoral focus – oil & gas, wind energy, and mining sectors; a sister company, Duz Cho Logging Ltd., is a full-phase timber harvesting and forest road construction contractor Contracting services – right-of-way clearing, road building, reclamation, logging, trucking, excavation, camp and catering services, bulk fuel supply, and card lock systems Clients – such as Shell Canada, Walter Energy, Teck Resources, BC Hydro, Mortenson Canada, Arcis Corporation, and LXL Consulting Operations base – Chetwynd, B.C.
4 Evergreen Resources LP (Saulteau First Nations)	Sectoral focus – oil & gas, forestry, and mining sectors Contracting services – right-of-way clearing, road building, reclamation, logging, trucking first aid, bridge design, and project management Clients – such as EnCana, Shell Canada Energy, Devon Canada, Canfor, West Fraser, Tembec, Pine Valley Coal, Peace River Coal, and Western Canadian Coal Operations base – Moberly Lake, B.C.
Blueberry River Enterprises GP Ltd. (Blueberry River First Nation)	Sectoral focus – oil & gas, forestry, and mining sectors Contracting services – Construction, alteration, repair, and development of earthworks, including right-of-way clearing, seismic clearing, road building, and site clearing; it also provides air curtain incineration services for vegetation clearing Clients – not named, but Blueberry River Enterprises GP Ltd. was nominated by Spectra Energy for a B.C. Aboriginal Business Award in 2011 Operations base – Charlie Lake, B.C.

NOTE:

Sources: Dunne-za Ventures (2012); Duz Cho Construction LP (2012); 4 Evergreen Resources LP (No date); Blueberry River Enterprises GP Ltd. (No date)

Two regional organizations have specific mandates to support development of Aboriginal businesses: Treaty 8 Tribal Association and Northeast Aboriginal Business Centre. The latter provides small business planning and operations advisory services to Aboriginal persons and Aboriginal businesses in northeast B.C. from its office in Fort St. John. The former has a community and economic planning function, which assists its First Nation members to create economic self-sufficiency. It has an economic development strategy project underway that will benefit the following Treaty 8 communities: Doig River First Nation, Halfway River First Nation, Prophet River First Nation, Saulteau First Nations, and West Moberly First Nations.

5.2 BC Hydro Aboriginal procurement policy

BC Hydro is committed to increasing Aboriginal participation in providing goods and services to the organization. In order to achieve this objective, BC Hydro has adopted an Aboriginal Contract and Procurement Policy.

BC Hydro's Aboriginal Contract and Procurement Policy defines the criteria for being considered an Aboriginal Business and identifies several procurement tools that enable increased Aboriginal

participation. The procurement tools contemplated under the Aboriginal Contract and Procurement Policy may include set-asides, direct awards, select tenders, and the inclusion of Aboriginal content as an evaluation criterion in bidding documents. The use of these tools is balanced against BC Hydro's mandate to provide value for its ratepayers.

5.3 Capacity building

The Site C team has sought to support capacity building opportunities for Aboriginal people in the planning and construction phases of the Project through the directed procurement, support for education and training, and business outreach activities described below.

Directed Procurement for Stage 3 General Contractor Work

Since 2010 and in accordance with BC Hydro's Aboriginal Contract and Procurement Policy, BC Hydro has sought to engage Aboriginal businesses in work on the Project.

To support the field investigation work on the Project, BC Hydro issued an RFP for general contractor support which included a requirement for at least one of the selected contractors to be an Aboriginal business. As a result of the process, two Aboriginal businesses were successful in receiving contracts: Renegade Construction Inc. (owned by a Doig River First Nation member), and Dunne-za Ventures (a West Moberly First Nations company).

During this RFP process, BC Hydro awarded additional contracts to carry out early season work in advance of the award of contracts under the RFP to two Aboriginal businesses – Blueberry River Enterprises (a Blueberry River First Nations company) and 4 Evergreen Resources (a Saulteau First Nations company).

All four companies provided general contractor support for the engineering field investigation program throughout the Project area. Some of the components of work included:

- Tree clearing and mulching, general labour
- First Aid
- Provision of jet boat
- Heavy equipment operation, road construction
- Support to drilling investigation

Northern Lights College Bursary

On September 20, 2012, the Honourable Rich Coleman, Minister of Energy, Mines and Natural Gas announced that BC Hydro would contribute $1 million in funding to support trades and skills training bursaries at Northern Lights College. The funding will be disbursed over a five-year period to support the development of skilled workers in the north, targeting those students who may not otherwise have access to post-secondary education. Fifty per cent of the funding for bursaries will be dedicated to Aboriginal students and applications will start being accepted in early 2013, with bursaries being awarded for the fall 2013 school year. The bursaries would be available to students pursuing the following programs:

- Aircraft Maintenance Engineering
- Automotive Service Technician Foundation and Apprenticeship
- Carpentry Foundation (Residential Construction) and Apprenticeship

- Commercial Transport Technician Apprenticeship
- Cook Training
- Electrician Foundation and Apprenticeship
- Heavy Duty Equipment Technician Apprenticeship
- Heavy Duty/Commercial Transport Technician Foundation
- Industrial Instrumentation Mechanic Foundation and Apprenticeship
- Millwright Foundation and Apprenticeship
- Plumber Foundation and Apprenticeship
- Practical Nursing Diploma
- Welding Level C, B, A and Apprenticeship

These programs are offered at Northern Lights College's campuses in Northeast BC.

Northern Opportunities:

In July 2011, BC Hydro entered into a three-year funding agreement with Northern Opportunities, a partnership of the school districts of Fort Nelson (SD #81), Peace River North (SD #60), and Peace River South (SD #59), Northern Lights College, local First Nations, industry and local communities with an objective to provide young people with a seamless learning pathway from secondary school to post-secondary training, leading to career success. A dual-credit program offered in the Peace Region combines high school, college studies and work-based training, enabling students to earn both a high school diploma and advanced credit in post-secondary and/or industry certification at the same time. The program covers academic, trades and apprenticeship and vocational programs, and is open to both Aboriginal and non-Aboriginal students. Between 2006 and 2010 and across all three school districts, 784 students participated in the dual credit and apprenticeship programs supported by Northern Opportunities, of which 614 graduated. Aboriginal students represented 121 participants, and 83 graduates. For Aboriginal students this participation represents an overall graduation rate of 75.8% of those participating in the Dual Credit program, versus 53.4% for those participating in traditional high school programs. As a Northern Opportunities Partner, BC Hydro sits as a member of the Northern Opportunities' Community Learning Council.

Partnerships with the North East Native Advancing Society (NENAS):

Working in partnership with the NENAS, BC Hydro assisted in developing a proposal to secure funding from the Industry Training Authority (ITA) that would support an essential skills and pre-trades training program, North East Aboriginal Trades Training (NEATT). NENAS was successful in securing funding from the ITA for a two-year program, which began its first intake in the spring of 2012. NEATT offers two key streams: an 8-week Essential Skills for Apprenticeship program that is tailored to an individual learner's needs, and an 8-week Pre-Apprenticeship Exploration program that prepares individuals to enter into formal trades training.

In December 2012, BC Hydro announced that it would contribute $100,000 over two years to NENAS in support of advancing NEATT participants into trades training not currently offered by Northern Lights College for those trades that are of interest to BC Hydro for the Site C Project, such as heavy duty equipment operators. The funding would be used to defray tuition and related costs for those students who are pursuing trades training.

In 2011 and 2012, BC Hydro contributed funding to the annual Go Karts for Girls event in Fort St. John. This event is organized by NENAS and aims to promote the interest and involvement of Aboriginal girls in science, engineering, and trades as career options.

Heritage Program:

As described in the Volume 4 Appendix C Heritage Resources Assessment Report, the heritage program for the Site C Project provided employment and capacity building opportunities for 163 Aboriginal people during the 2010-2012 field seasons.

5.4 Engagement with Aboriginal Businesses

BC Hydro has actively pursued opportunities to engage directly with the Aboriginal business community, in the Peace Region and beyond:

- In February 2012, BC Hydro sponsored and participated in the inaugural Aboriginal Business Match Conference in Prince George. This event aims to bring together top business and economic development decision makers from more than 150 First Nations and Tribal Councils with businesses, investors, customers and suppliers looking to do business in First Nation communities. With the unique conference format, representatives from the Site C team were able to have one-on-one meetings with Aboriginal businesses and to build an awareness of regional First Nation suppliers and promote potential upcoming opportunities arising from the Site C project. BC Hydro and the Site C team will sponsor and attend this event again in February 2013.
- As outlined in Section 3.3, BC Hydro held business information sessions targeted at the contracting and business community in several communities in the NEDR. The First Nations Engagement team notified First Nation groups and several Aboriginal businesses of the sessions. Notification was also provided to those businesses registered with the BC Hydro Aboriginal business directory. The presentation included information about BC Hydro's Aboriginal Procurement Policy and related processes.
- On request from Aboriginal groups, BC Hydro's procurement and Aboriginal Business staff have attended consultation and community meetings to review BC Hydro's Aboriginal Procurement Policy and assist Aboriginal businesses with registration with the BC Hydro/Site C Aboriginal Business Directory. Additionally, regular check-in meetings were held with Aboriginal businesses doing work on the project to understand their capacity and interests with respect to ongoing work for the project should it proceed to construction.

5.5 Impact Benefit Agreement Commitments

Where identified by First Nations as an interest, BC Hydro may include commitments respecting capacity building, education and training, or directed procurement opportunities in Impact Benefit Agreements.

References

BC Hydro Info Sheet – Aboriginal Contract and Procurement Policy (http://www.bchydro.com/etc/medialib/internet/documents/about/company_information/partners_vendors/PV_aboriginal_contract_policy.Par.0001.File.Aboriginal-Contract-Procurement-Policy.pdf)

BC Stats Input-Output Model Report (Volume 3, Appendix A, Part 2)