RESPONSE TO WORKING GROUP AND PUBLIC COMMENTS ON THE SITE C CLEAN ENERGY PROJECT ENVIRONMENTAL IMPACT STATEMENT

Technical Memo

PROJECT COSTS

MAY 8, 2013

Subject: Project Costs

Purpose

A number of comments received during the Comment Period raise the question of whether the Project cost estimate is accurate as well as additional questions regarding the financing of the Project.

The purpose of this Technical Memo is to summarize the information on the project cost estimate and other financial information provided in the EIS.

Project Cost Estimate

The capital cost estimate for the Project is $7.9 billion in nominal ("as-spent") dollars, and includes adjustments for inflation effects and the cost of financing during construction. This cost estimate was prepared in 2010 "… based on the current design (as described in Volume 1 Section 4 Project Description) and market prices for labour, equipment and materials."

Details on the Project cost estimate are provided in Volume 1 Appendix F Part 1 (Project Cost Estimate). For convenience, this Technical Memo reproduces Table 1 from Volume 1 Appendix F Part 1 showing the composition of the project cost estimate.

The capital cost estimate has undergone both internal and external review.

> "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."[1]

The Project cost estimate is characterized as a Class 3 cost estimate as defined by the Association for the Advancement of Cost Engineering, and includes appropriate amounts of contingency and reserves. As stated in AACE 2012:

> "Class 3 estimates are typically prepared to support full project funding requests, and become the first of the project phase "control estimate" against which all actual costs and resources will be monitored for variations to the budget. They are used as the project budget until replaced by more detailed estimates."

As stated in Volume 1 Appendix F Part 1 (Project Cost Estimate), BC Hydro expects project costs "… to be within the bounds of the current capital cost estimate in ordinary market conditions."

Project Financing and Recovery from Ratepayers

BC Hydro receives its financing through the Province of British Columbia. All of BC Hydro's debt is either guaranteed or held by the Province of British Columbia. The credit rating of BC Hydro's

[1] Volume 1 Appendix F Part 1 Project Cost Estimate, page 2.

guaranteed debt is reflective of the credit ratings of the Province which is currently rated AAA by Standard and Poor's and Aaa by Moody's bond rating agencies.

The Utilities Commission Act gives the BCUC the power to regulate BC Hydro and provides BC Hydro the ability to recover its costs (debt servicing and other) by way of application. As stated in Section 7.1.3, "Costs associated with generation projects are recovered from ratepayers based on the revenue requirements collected by BC Hydro, as regulated by the [BCUC] … The manner of cost recovery is determined by the BCUC …". As described on page 7-4, this recovery from ratepayers is made up of:

- Operations costs
- Financing costs (i.e. interest on debt associated with the project)
- Amortization of the project capital cost (depreciated over a period as determined by accounting principles and accepted by the BCUC)
- A regulated return on equity on the capital invested in the project

The debt associated with the Project would be effectively paid off through the recovery of the amortization of the project capital cost.

For the purposes of the analysis provided in Sectio 7.1.3, BC Hydro has assumed amortization of the project capital costs would take place over the financial planning life of the project (i.e., 70 years). As noted, this recovery term is subject to approval by the BCUC and "… may therefore differ from these assumptions."

Excerpted tables from Volume 1 Appendix F Part 1 Project Cost Estimate (Page 2)

Table 1 Project cost estimate breakdown

	($ million)
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**

Related Comments / Information Requests:

This technical memo provides information related to the following Information Requests:

• Response to Peace Valley Environmental Association Standard Letters • Response to Wilderness Committee Standard Letters		form_0004-006	pub_0049-001	pub_0054-001
pub_0064-005	pub_0088-003	pub_0115-003	pub_0203-001	pub_0295-001
pub_0213_001	pub_0234-004	pub_0241-004	pub_0256-002	pub_0472-002
pub_0438-003	pub_0438-021	pub_0457-001	pub_0457-002	pub_0529-001
pub_0473-003	pub_0479-004	pub_0482-001	pub_0510-001	pub_0593-001
pub_0537-002	pub_0563-001	pub_0573-001	pub_0579-001	pub_0605-025
pub_0598-001	pub_0605-003	pub_0605-004	pub_0605-013	pub_1018-001
pub_0727-001	pub_0846-001	pub_0965-001	pub_0985-001	pub_1019-001
pub_1021-001	ab_0001-022			