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October 20, 2014

Thomas Assimes
CFO, BC Hydro Site C Clean Energy Project
Suite 1100, Four Bentall Centre
1055 Dunsmuir Street, P O Box 49260
Vancouver, BC, Canada V7X 1V5

Dear Mr. Assimes,

Re: Site C Clean Energy Project - Model Review

KPMG LLP ("KPMG"), acting in its role as commercial advisor to BC Hydro, was asked by BC Hydro to review a financial model ("Financial Model") and capital cost estimate prepared by BC Hydro in respect of the Site C Clean Energy Project ("Project"). Specifically, BC Hydro requested KPMG to comment on the logical and arithmetic integrity of the Financial Model, as well as the reasonableness and appropriateness of the approach, methods and processes used in developing the assumptions ("Assumptions") used to develop the project budget transcribed in the Financial Model.

In this context, it is our understanding that the objective of the Financial Model (the "Financial Model Objectives") is to function as a tool to consolidate key input data with respect to capital costs; calculate interest during construction; assess the financial implications of constructing the Project; and calculate the levelled unit energy cost for the Project.

KPMG conducted a similar review of the Financial Model in 2011 and our current review also focused on changes in processes from our 2011 review.

A. Scope of Review

KPMG reviewed the project documentation made available to us by the BC Hydro Integrated Team ("Project Team") and interviewed members of the Project Team, including the Project's cost estimators. Our review focused on the following:

1. the approach, methods and processes followed by the Project Team in developing the assumptions and cost inputs;

2. the incorporation of Assumptions into the Financial Model; and

3. the construction of the Financial Model, insofar as its logical and arithmetic integrity is concerned, as an analytical tool that BC Hydro may use to achieve the Financial Model objectives.

Our work did not include any of the following:

1. assessing or verifying the commercial risks associated with the Project, nor commenting on the possibility of the financial projections contained in the Financial Model of being achieved;

2. reviewing consistency of the Financial Model with externally linked files or verification of the contents and calculations of externally linked files in any way;

3. considering any formula containing implicit assumptions, external references;

4. reviewing the accuracy or appropriateness of visual elements (such as graphs) included within the Financial Model;

5. assessing the completeness of the Assumptions or inputs used in the Financial Model;

6. reviewing or testing of any sensitivity analysis of the Financial Model, including assessing the impact in the Financial Model of differing assumptions; or

7. providing any opinion or assurance regarding the functionality, accuracy or correctness of Microsoft Excel, the software program in which the Model was developed and operates, not the operating system that any users uses to run the Financial Model in Microsoft Excel.

The procedure we used to perform the work set out above will not constitute an audit or review made in accordance with any generally accepted auditing standards, or company law, or assessment of the technical feasibility or technical engineering review, or compliance with application legislation.

B. Methodology

Our work was based on the following methodology:

1. Document Review – a review of project documents made available to us by the Project Team;

2. Interviewed Project Team Members – conducted interviews with Project Team Members and other relevant parties associated with the Project. The purpose of the interviews were to develop an understanding of the processes followed in creating the Assumptions contained in the Financial Model;

3. Reviewed the process employed to develop the Financial Model assumptions;

4. Reviewed the transcription of assumptions into the Financial Model – we compared the Assumptions contained in the project documentation that was made available to us to those inputs used in the Financial Model; and

5. Verified logical and arithmetic integrity of the Financial Model – we reviewed the formula contained in the Financial Model for logical and arithmetic integrity.

C. Findings

Our observations regarding each item in the scope of work is addresses as follows:

1. The approach, methods and processes followed by the Project Team in developing the Assumptions

The Financial Model was populated from Assumptions developed by the Project Team for direct construction costs, indirect construction costs, contingencies, loadings including inflation and interest during construction, and benefits including First Nations & Regional Benefits Agreement. The Assumptions are explained further in Appendix 1.

In respect of this review, our observations are as follows:

- **Estimating Team**: Various teams were involved in the development of the 2014 estimate. Estimating teams were broken down as per direct cost work packages, indirect cost, contingency and benefits The details of the teams involved in development of the Assumptions are summarized in Tables 1 and 2 in Appendix 1.

- **BC Hydro Estimating Procedure:** The Assumption development process demonstrates a level of care and diligence consistent with an infrastructure project about to enter the construction phase. The estimating process appears to be in line with BC Hydro Estimating Procedure for Preliminary Design or EAR Estimates as applicable. The Project Team expects the accuracy of the 2014 estimate to range from +15% to -10%, very similar to AACEI Expected Accuracy Range for projects in Class 3 Budget, Authorization, or Control phase.

- **Direct Construction Cost**: Integrated Engineering Team (IET) worked with the Site C Estimating Team in developing estimates for direct cost work packages - Main Civil Works and Generating Station & Spillways. IET performed the primary estimate and the secondary check estimate was conducted by BC Hydro Site C Estimating Team. The two estimates were reviewed and final numbers were agreed to carry and these were carried in the final primary estimate by IET. For the remaining direct cost work packages, the estimates were prepared by the Site C Team and subsequently reviewed by IET.

- **Design Change Management**: Additional control measures have been implemented by the Site C Team including design change management process to ensure more visibility and control on design changes. All design changes that affected the cost and schedule were identified, formally recorded and reported, including the estimated impact on the project cost, scope or schedule. The 2010 design and the corresponding estimate was considered the baseline for the purpose of assessing the impact of the design change, and scope creep. The authorization of IET's Management Team was obtained prior to implementation of any proposed design changes, thereby managing scope creep that originated from within the IET or other parts of the Site C Team.

- **Work Packages**: A major change from the 2010 estimate is in the repackaging of the direct cost elements from 18 major work packages to 14 major work packages to match the procurement model. Repackaging was done based on the Board approved Procurement Strategy. As the project progresses into the construction phase, only minimal changes would be required on the estimate in terms of combining work elements for procurement.

- **Labour rates:** Labour rates were validated against standard industry labour agreements and updated in the 2014 estimate. The BC Hydro Project Team changed the assumptions regarding the labour turnaround schedule in the 2014 estimate. The 2010 estimate was based on the assumption that people will work 5 weeks continuously before taking 1 week break (5:1 schedule). In 2014, the estimate was updated to include a 3:1 shift schedule – people will work 3 weeks continuously and then take 1 week break.

- **Commodity Prices:** BC Hydro has retained the services of MMK Consulting to conduct a study on Construction Cost Trends and Outlook. The report by MMK Consulting shows that prices of most commodities have remained largely flat during the last 4 years. Prices of commodities such as steel, cement, fly ash, diesel etc. have been reviewed and updated to reflect the trend in commodity prices

- **Supplier Costs:** Minimal new supplier costs were obtained because the project is now in active procurement. Relevant previous supplier quotes such as turbine and generators costs were carried from the 2010 estimate with escalation. Equipment rates were validated and updated as per rates published by Equipment Watch.

- **Indirect Construction Cost**: Indirect Costs were estimated by the BC Hydro Generation Estimating Team with assistance from Site C's Finance, Estimating, and Environment Teams as well as BC Hydro Corporate Finance Team. IET was not involved in developing the estimates for indirect cost items.The definition and regulatory cost estimate was based on BC Hydro accounting records for costs already incurred and reforecasting of remaining work. Management and Engineering costs were estimated based on a detailed resource plan of all activities required to execute the project. The 2014 estimate for regulatory mitigation and compensation remains unchanged compared to the 2010 estimate.

- **Insurance**: The Site C Team engaged Marsh Canada as the insurance advisor for the Project. Marsh has developed an insurance program for the Project and confirmed that the current estimate for insurance is sufficient based on current market pricing.

- **Contingency**: Contingency is an allowance to address risks that are reasonably within the control of the Project Team and which can be addressed through timely mitigation measures.

  In 2010, the Site C Integrated Engineering Team performed Monte Carlo analysis, a leading industry practice for quantitative risk analysis, in assessing project risks to calculate the amount of contingency for Site C. The analysis included an assessment of the adequacy of the contingency fund to address the potential of risks occurring as the project progresses to the procurement and construction phase. The Team also reviewed the uncertainty associated with the estimated cost of the direct cost work packages, with respect to scope changes, accuracy of estimate and labour cost fluctuations. The impact of variations in mark-up was also assessed as a total for the overall direct cost package. The contingency analysis was refreshed from the bottom up in the 2014 estimate by the Site Estimating Team.

  Overall, the Site C Team has diligently assessed project risk events and allowed for contingency to address such risks.

- **Project Reserve:** A Project Reserve is an allowance to address macro risks that are outside the control of the team managing the project.

  In 2010, the Site C team conducted a risk analysis to identify these risks and calculate a reserve. The most significant macro risks identified in 2010 included extraordinary delays in regulatory process and approvals, extraordinary incentives to attract labour, harsher than anticipated environment assessment certificate (EAC) requirements, exceptional fluctuations in interest or inflation rates, design errors/omissions, or diversion tunnel construction issues.

  Since 2010, the Project did indeed experience a delay in the regulatory process and extraordinary changes in labour conditions. These changes were largely offset by a positive movement in interest rates. The EAC requirements are in line with the original estimate. The changes have been incorporated in the 2014 Estimate.

  Considering the duration of Site C's construction schedule, KPMG recommends that the Team continue to update the Project Reserve calculation and measure the risk associated with macro events on the Project.

- **Escalation/Inflation**: MMK Consulting recommended allowances for short and long term, for construction costs at BC Hydro, in the range of 2% to 3.5% depending on the mix expenditures on a project. Based on the report by MMK Consulting, and discussions with other Utilities, BC Hydro's Principal Engineer recommended an inflation rate of 2% per annum for the 2014 estimate, at the lower end of the predicted construction inflation would be appropriate for mix of expenditures directly on the Site C Project.

- **Oversight**: For additional oversight, the process followed by the Site C Project Team also included consultation with its Technical Advisory Board and Executive Project Board. Also, a panel of industry experts with 35 to 50 year experience in the construction of heavy civil works were engaged to review the direct cost estimate. The review process was monitored by KPMG. A separate report was delivered to BC Hydro by the panel.

2. The incorporation of Assumptions into the Financial Model

In respect of our review of the financial model, our major observations are as follows:

- We observed a number of labelling inconsistencies that required clarification to confirm whether a number of core capital cost items were input in nominal or real dollars. These were confirmed with BC Hydro and have been updated in the current version of the draft model.

- We observed that Contingency was substantially similar to the prior 2010 estimate and that Contingency had been updated for the 2014 estimate primarily by applying actual BC Consumer Price Index inflation since 2010. To ensure that the Contingency amount remained sufficient, Site C subsequently performed a full Monte Carlo Analysis from the bottom-up.

- We observed several individual cost estimates that had not changed from the 2011 to the 2014 Capital Cost Model (i.e. same dollar value in 2010 and 2014 dollars indicating no inflation was applied since the last estimate) and communicated these items to BC Hydro for clarification. We understand this was intentional as these are sunk costs that are not subject to inflation.

3. The construction of the Financial Model, insofar as its logical and arithmetic integrity is concerned

- We observed that Interest During Construction (IDC) was being calculated using a compounding interest rate and requested clarification if compounding or fractional interest rate methodology should be used to derive IDC. BC Hydro confirmed that the use of a compounding interest rate is intended at the direction of BC Hydro Treasury.

- We noted discrepancies in how inflation was applied to approximately $430 million of costs as it appeared the assumptions applied to these costs differed from the majority of costs. Upon clarification with BC Hydro it was confirmed that forecasted inflation (i.e. forecasted as of 2010 for the 2011-2014 period), rather than actual inflation was used to update these costs in parallel with BC Hydro's expectation at the time (i.e. in 2010) that these costs would increase at a rate faster than actual inflation. As forecasted inflation was higher than actual inflation, this assumption seems appropriate.

- We asked for clarification on the timing assumptions used for the calculation of net present value used to estimate the Unitized Energy Cost ("UEC"). We noted any change in assumptions would have an immaterial effect on UEC regardless of the outcome of this observation. BC Hydro confirmed that the timing assumptions used for the calculation of UEC were consistent with the nature of the calculations used in the model.

- On the core "RAW-DirectCF" tab we noted numerous hardcoded assumptions combined with references to other cells in individual formulas and flagged all instances of these formulas for clarification by BC Hydro. Upon clarification with BC Hydro it was confirmed by BC Hydro that these cells are effectively input cells so no further investigation was required after this confirmation.

- We noted some instances where inflation assumptions were hard coded into formulas (i.e. Cell X*1.02) but generally observed that the application of inflation was linked to a single input in a logical manner. BC Hydro has corrected all instances of this in the current version of model under review.

- We noted one core referencing error on "Calc-CASHFLOW" where approximately $54 million in costs were not referenced to the appropriate timing (shaping) sensitivity profile, thus potentially misrepresenting the timing of when those capital costs would be assumed to occur. We noted that in the current draft version of the model under review that the appropriate shaping sensitivity profile has been referenced.

D. Conclusion

We have reviewed the Assumption development process and it shows a level of care and diligence consistent with an infrastructure project about to enter the construction phase. Based on our review, it is our view that the Project Team has followed reasonable and appropriate processes for developing the Assumptions used in the Financial Model.

Overall, BC Hydro Project Team has diligently assessed project risk events and allowed for Project Contingency to address such risks.

Based on our review, we believe that the Assumptions have been properly transcribed into the Financial Model. The Financial Model also appears to have been constructed appropriately, insofar as its logic and arithmetic integrity is concerned.

E. Restrictions

This report is addressed to BC Hydro. We will not accept responsibility to any other party to whom the report may be shown or who may acquire a copy of the report.

Our review findings, as set out in our report, apply only to the specified version of the Financial Model and that has been made available to us by the Project Team. We will not be under any obligation to perform any work, take account of or comment on any intervening events or model changes after the issue of our report in final form to BC Hydro.

Sincerely,

Gary Webster, P.Eng
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KPMG LLP

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Appendix 1: Summary of Processes used to Develop Assumptions

This Appendix summarizes the processes used to develop the Assumptions contained in the capital cost component of the Financial Model.

The Financial Model is based on five categories of Assumptions:

1. Direct construction costs;
2. Indirect construction costs;
3. Contingencies;
4. Loadings including inflation and interest during construction; and
5. Benefits

Different teams were responsible for developing various elements of the Assumptions, as summarized in tables on the following pages. The process by which the Assumptions were derived are summarized thereafter by category.

Table 1: Assumption Categories

Category		Sub-Component		Developed By
1	Direct construction costs	A	Land & rights	Site C Properties Team, Integrated Engineering Team Site C Commercial Team
		B	Worker accommodation	Radloff/SSA
		C	Highway 29 realignment	Site C Highways Team, Tetratech
		D	Clearing	Site C Clearing Team
		E	Early works	Site C Estimating Team, Integrated Engineering Team, and Tetratech
		F	Main civil works	Site C Estimating Team, Integrated Engineering Team
		G	Generating station & spillways	Site C Estimating Team, Integrated Engineering Team
		H	Turbines & Generators	Site C Estimating Team
		I	Transformers	BC Hydro Site C Estimating Team
		J	Substation	Transmission & Distribution Estimating Team, Site C Estimating Team
		K	Peace Canyon 500kv upgrade	Transmission & Distribution Estimating Team, Site C Estimating Team
		L	Transmission line	Transmission & Distribution Estimating Team, Site C Estimating Team
		M	Miscellaneous items	Site C Estimating Team
		N	Construction management	Site C Estimating Team
2	Indirect construction costs	A	Definition & regulatory phase (including sunk costs)	Site C Finance Team
		B	Management and engineering costs	Site C Finance Team, Site C Estimating Team
		C	Construction insurance & bonding	Site C Finance Team, Premium supplied by BC Hydro Corporate Finance and Marsh Canada

Table 1: Assumption Categories				
Category		**Sub-Component**		**Developed By**
		D	Regulatory mitigation & compensation	Site C Environment Team
3	Project Risk Allowance	A	Contingency	Integrated Engineering Team, Site C Estimating Team, BC Hydro Generation Estimating Team, Site C Commercial Team
4	Cost loadings and inflation	A	Inflation	Site C Commercial Team, Rates supplied by BC Hydro's Treasury Group
		B	Interest during construction	Site C Commercial Team, Rates supplied by BC Hydro's Treasury Group
5	Benefits	A	First Nations and Regional Benefits Agreement	Site C First Nations Team, BC Hydro Commercial Team

Table 2: Teams Responsible for Developing Assumptions		
Team	**Team Members**	**Team Leader**
Integrated Engineering Team	Klohn Crippen Berger Ltd.	John Nunn
	SNC-Lavalin Inc.	Alfred Hanna
	BC Hydro Engineers	Andrew Watson
Site C Estimating Team	BC Hydro Cost Estimation Experts	Alan Le Couteur
BC Hydro Generation Estimating Team	BC Hydro Principal Engineer	John Boots/ Jeff Acland
BC Hydro Transmission & Distribution Estimating Team	BC Hydro Transmission & Distribution Experts	Matt Drown
Tetratech	Tetratech Cost Estimating Experts	Alex Izett
Radloff/SSA	Radloff/SSA Cost Estimating Experts	Bob Radloff
Site C Highways Team	Site C Highway Experts	Don Wharf
Site C Clearing Team	Site C Clearing Experts	Paul Veltmeyer
Site C Properties Team	Site C Property Experts	Judith Reynier
Site C Commercial Team	Site C Commercial Experts	Michael Savidant
Site C Finance Team	Site C Finance Experts	Kathy Young
BC Hydro Treasury Group	Site C Treasury Experts	James Le Lievre
Site C Environmental and Regulatory Group	Site C Environment Experts	Danielle Melchior
Site C First Nations Team	Site C First Nations Expert	Trevor Proverbs

A. Process Update

Several processes and changes were made to the BC Hydro estimating process since the 2010 estimate. These are summarized below:

Estimation Process: Site C Team has rearranged the direct cost elements from 18 work packages included in the 2010 estimate to 14 work packages in the 2014 estimate, in accordance with the procurement model. Repackaging was done based on the Board approved Procurement Strategy. BC Hydro has not obtained any formal approval on the work packages yet as some of the items in the scope are still being finalized. At this stage of the project, BC Hydro Project Team expects the accuracy of the 2014 estimate to be in the range of +15% to -10%, very similar to AACEI Expected Accuracy Range for projects in Class 3 Budget, Authorization, or Control phase.

Labour Rates: Site C Team has updated the labour rates in the 2014 estimate by taking into consideration standard industry labour agreement . The Site C Estimating Team Leader worked with labour relation team while updating the labour model. The revised labour model was uploaded to Heavy Bids and the estimate was recalculated accordingly. The Site C Project Team has changed the assumptions regarding labour turnaround schedule in the 2014 estimate. The 2010 estimate was based on the assumption that people will work 5 weeks continuously before taking a break for 1 week (5:1 schedule). In 2014, the estimate was updated to include 3:1 shift schedule – people will work 3 weeks continuously and then take a break for 1 week. Equipment rates have been updated as per Equipment Watch.

Design Change Management: The 2010 design and the corresponding estimate were considered as the baseline for the purpose of assessing the impact of design change. The current design change management process is applicable to any potential changes in design that could make an impact on the project scope, cost and schedule from the 2010 baseline. As per the process, the related Discipline Lead in the Integrated Engineering Team issues a Design Change Notice for a potential change. The Discipline Lead along with the Engineering Manager identifies the potential implications of the change in terms of scope and quantity. The related estimating team calculates the potential cost impact and the Engineering Area Manager and Work Package Manager confirms the changes to the project in terms of cost, schedule and scope. Subsequently, the Engineering Controls Manager issues a change order to formalize the change. The authorization of IET's Management Team was obtained before any proposed design changes were implemented, thereby managing scope creep that originated from within the IET.

B. Direct construction Costs

The processes followed by Site C to estimate major direct cost work packages are illustrated below:

Land and Rights: Site C Properties Team estimated the costs for Land and Rights. Some of the costs are sunk costs as BC Hydro continues to purchase the lands required for the Project. Judith Reynier, Site C Properties Team lead, has a map of all the properties that need to be acquired for the project and all the numbers are based on assessed land value.

Judith has a Diploma in Urban Land Economics, is a Member of the Real Estate Institute of BC, has significant experience in estimating property acquisition costs for major infrastructure projects and has over 35 years of experience in the acquisition and management of properties required for public purposes.

Worker Accommodation: Worker Accommodation costs were estimated by R. Radloff & Associates Inc. and SSA Quantity Surveyors Ltd. The 2014 estimate for Worker Accommodation was based on 30% complete design. In 2010, the estimate was based on vendor quotes. In 2014, R. Radloff & Associates Inc.

and SSA Quantity Surveyors Ltd. team used operational cost database to prepare the estimate and then compared the estimate against industry comparators including the camp costs of Manitoba Hydro and Quebec Hydro. The team focussed on the quality of service including the quality of food while doing the benchmarking and preparing an estimate for the Project. BC Hydro does not carry a separate % on escalation of direct cost items; however, worker accommodation estimate includes an escalation allowance for 1 year, indirectly buried in the cost.

Radloff & Associates Inc. and SSA Quantity Surveyors Ltd. was led by Bob Radloff, a Civil Engineer with over 36 years of progressive experience in the design, construction and operation of municipal infrastructure. He has worked extensively on both small and large systems, in First Nation's communities, as well as municipal, and industrial settings.

Highways: The estimate for Highway 29 realignment was prepared by the Site C Highways Team in collaboration with Tetratech. The 2014 estimate for Highways was based on a 40% complete design. This was done as a bottom-up exercise using TetraTech's road design. The costs were reviewed in August 2013 by the Site C team, including the Integrated Engineering Team.

The Site C Highways Team was led by Don Wharf. Don has been serving as Program Manager, Road Infrastructure for BC Hydro Site C Project since 2010, responsible for the planning, engineering, design and implementation of the Site C Roads Program. Don has over 31 years extensive experience with the Ministry of Transportation & Infrastructure of BC in project and program development and delivery, highway contract administration, and stakeholder relations.

Clearing: The estimate for Clearing was prepared by the Site C Clearing Team based on several seasons of ground truthing and reflecting Environmental Impact Statement (EIS) commitments. The design was 30% complete when the estimate was prepared. The estimate assumed Blue Book rates for equipment (and associated operators) as well as labour rates based on experience. BC Hydro has received initial submissions from several companies and the labour rates are 5 -20% higher than what BC Hydro used in the estimate. The Site C Team is currently in negotiation with those companies to get them to accept Blue Book rates for equipment and ensure that their labour rates are similar to those used for the 2014 estimate.

The Site C Clearing Team was led by Paul Veltmeyer. Paul is a Registered Professional Forester and has a Bachelor of Science degree in Forestry. Paul has over 25 years experience working in different capacities in companies in the Forestry industry. Since 2011, Paul has been serving as Forestry Lead for Site C Clean Energy Project responsible for developing and executing a Clearing and Debris Management Strategy for the Project.

Early Works: Early works were estimated by Tetratech in collaboration with the Site C Estimating Team. The Site C Estimating Team prepared approximately 10% of the package estimate, while Tetratech developed the rest including the estimate for road work. Tetratech did not use a bottom up approach to estimate the Early Works. Tetratech produced the estimate based on unit pricing comparable to what Ministry of Transportation and Infrastructure has experienced in that area. The estimates were subsequently reviewed for by the IET.

Tetratech Team was led by Alex Izett. Alex has a Bachelor of Science degree in Civil Engineering. Alex has over 15 years experience providing engineering and project management services to private sector and private sector clients in the transportation industry.

Main Civil Works: Main Civil works were estimated by the Site C Estimating Team in collaboration with the Integrated Engineering Team, based on 40% complete design. The preparation of the estimate was a 2 stage process - IET did primary estimate and a secondary check estimate was done by BC Hydro Site C Estimating Team. BC Hydro started with the 2010 estimate and refreshed quantities in line with design reports and incorporated costs for resources, equipment, material etc, using Heavy Bids. Michael Pauletto and Wendy Lannin developed the schedule and resourcing plan for Main Civil Works. Michael Pauletto is an external consultant serving the IET through SNC Lavalin and Wendy Lannin is IET Project Controls Manager. The two estimates were reviewed and final numbers agreed to carry and these were carried in the final primary estimate by the IET.

The estimate was also reviewed and validated by BC Hydro's Principal Engineer for Estimating and Scheduling and Site C's Estimating Team. The reasonableness of the final estimate was also validated against costs incurred for previous BC Hydro projects.

The work package was estimated based on the assumption that the work will be executed by a single large general contractor. Profit and overheads for the work package were determined mainly by BC Hydro's Principal Engineer for Estimating and Scheduling and Site C's Estimating Team Lead, based on their extensive experience from similar projects. BC Hydro has not allowed for any Joint Venture costs in its 2014 estimate for Main Civil Works. Contractor's contingency has not been allowed as BC Hydro's standard practice for the estimate. BC Hydro is carrying a significant portion of the risks except for the risks such as productivity, material logistics, and adverse weather conditions.
The credentials of the Integrated Engineering Team and Site C Estimating Team are summarized in Appendix 2.

Generating Station and Spillways: The estimate for Generating Station and Spillways ("GSS") was prepared by the Site C Estimating Team in collaboration with the Integrated Engineering Team, based on 30% complete design. The preparation of the estimate was a 2 stage process - IET did primary estimate and a secondary check estimate was done by the Site C Estimating Team .The two estimates were reviewed and final numbers agreed to carry and these were carried in the final primary estimate by the IET.

The Spillway is one of the largest scope change item when compared to the 2010 estimate. The overall dimensions of the spillway have changed and there was a reduction in parts designed for construction by Roller Compacted Concrete. This change reduced the cost of the Main Civil Works component, but the GSS cost has increased accordingly. The estimate for penstock was updated in the 2014 estimate from the low unit rates allowed in the 2010 estimate.

Turbines and Generators: The estimate for Turbines and Generators was prepared by the Site C Estimating Team. The design was in the feasibility stage at 10% of the overall design when the 2014 estimate was prepared. The 2010 estimate was based on quotes received from vendors. The 2014 estimate is based on the 2010 pricing, adjusted for inflation in the labour rate.

BC Hydro has also validated its assumptions on commodity prices through a study conducted by MMK Consulting. The report by MMK Consulting shows that prices of most commodities have remained largely flat during the last 4 years. Prices of commodities such as steel, cement, fly ash, diesel etc. have been reviewed and updated to reflect the trend in commodity prices. The 2014 estimate does not include any allowance for fluctuations in the currency rate as BC Hydro does not expect too much fluctuation in the currency rate over the duration of the project.

Substation, Transmission & Peace Canyon 500kv Upgrade: The estimate for substation, transmission & Peace Canyon 500kv upgrade was prepared by BC Hydro Transmission and Distribution Estimating

Team. A bottom-up approach was used to develop the estimate based on available designs. BC Hydro expects that some adjustments would be required in the final estimate once the location of the substation is finalized. BC Hydro is holding additional costs in Value Engineering for the new substation location. The estimate was reviewed and validated through the standard channels for such estimates, up to and including BC Hydro's Principal Engineer for Estimating & Scheduling.

BC Hydro Transmission and Distribution Estimating Team was led by Matt Drown. Mark is a Professional Engineer and certified Project Management Professional. Mark is a Transmission Project Management subject matter expert for PPM Committee and has substantial substation and transmission line design knowledge. Mark has worked at BC Hydro in several roles, including Mechanical Engineer- Stations Engineering, Stations Team Lead and Project Manager Transmission Engineering.

C. Indirect Construction Costs

The processes followed by BC Hydro to estimate indirect cost are illustrated below:

Definition and Regulatory Phase (including sunk costs): The Site C Finance Team estimated the definition and regulatory phase cost for the project. Approximately 84% of the costs are already sunk and actual at this stage of the project and BC Hydro Finance Team based its estimate on its accounting records. BC Hydro develops a baseline regulatory schedule at least once a year. The baseline schedule was last prepared in November, 2013 along with a forecast analysis for the rest of the regulatory phase. In addition, each month the Site C Finance Team reviews the Expected Total Cost to the end of the regulatory phase.

The Site C Finance Team was led by Kathy Young. Kathy has over 27 years experience in project cost control, project management, operations management and management accounting. Kathy is the Manager, Planning, Forecasting and Business Services for BC Hydro since 2010.

Management and Engineering: Management and engineering costs associated with the Project were estimated by BC Hydro Site C Estimating Team and based on a detailed resource plan of all activities required to execute the project. The hourly rates for Management and Engineering activities have not changed from the 2010 estimate. BC Hydro has not updated the quantities of Management and Engineering items except for the extra quantities added to account for the additional schedule duration for diversion and other related activities.

Construction Insurance and Bonding: Construction insurance and bonding estimate in the 2014 model remain unchanged from the 2010 estimate. The 2014 estimate was prepared by BC Hydro Site C Finance Team in collaboration with BC Hydro Corporate Finance Team. BC Hydro Site C Finance Team led by Kathy Young reviewed the insurance requirements based on the final scope of work and contract packages and then worked with BC Hydro Corporate Finance Team to estimate the insurance cost for the project. Subsequently, BC Hydro Site C Finance Team has retained Marsh Canada to review costs and develop an insurance program within the allocated budget. Marsh has confirmed the estimate is sufficient based on current market pricing.

Regulatory Mitigation and Compensation: The Site C Environmental and Regulatory Group estimated the allowance for regulatory mitigation and compensation associated with the environmental impacts of constructing a new dam. The Site C Environmental experts consulted with subject matter experts and external consultants while developing the estimate back in 2010 and the estimate for 2014 remains unchanged.

The Site C Environmental and Regulatory Group was led by Danielle Melchior. Danielle Melchior has a Bachelor of Arts and a Masters degree in Economics. Danielle has significant experience in investment analysis and project financing for large infrastructure projects in the oil and gas sector and has worked at BC Hydro in several roles, including Director of Finance Generation/EARG, Project Director Site C and Director of Environmental Assessment & Regulatory.

D. Project Risk Allowances

Allowances that address risks are usually split into two components – Project Contingency and Project Reserves. Project Contingency is to address risks that are reasonably within the control of the Project Team and which can be addressed through timely mitigation measures and Project Reserve is to address macro risks that are outside the control of the Project Team.

Project Contingency: In 2014, the BC Hydro Site C Estimating Team performed Monte Carlo analysis, a leading industry practice for quantitative risk analysis, in assessing project risks. Using Monte Carlo analysis, BC Hydro Site C Estimating Team assessed the adequacy of the contingency fund to address the potential of risks occurring as the project progresses to the procurement and construction phase.The Team reviewed the 14 major work packages with respect to: scope changes, accuracy of estimate and labour cost fluctuations. The analysis considered best and worst case scenarios on each line item in the estimate. The impact of variations in mark up was also assessed as a total for the overall direct cost package. The resulting construction contingency was reviewed by IET on a top-down basis, to ensure that it made sense at the overall project level.

Project Reserves: In 2010, the Site C Team with assistance from Partnership BC conducted a full assessment of the external macro risk events that the Site C Project is exposed to and calculated a Project Reserve to address such risks. A number of positive and negative reserve events have materialized and been absorbed in the 2014 estimate. The reserve events that have been absorbed in the 2014 estimate include: overtime premiums increased from the rates included in the 2010 estimate, extra cost included for flight for turnarounds, quality of the camp improved, a decrease in interest rates, and nearly 2 years of schedule delay in the regulatory process during Stage 3. Considering the long construction schedule of the Project, BC Hydro should continue to update the Project Reserve calculation in the event that additional reserve events occur.

E. Loadings Including Inflation and Interest During Construction

The Site C Commercial Team worked with BC Hydro Treasury Group to determine the inflation rate for the 2014 model. BC Hydro Commercial Team has validated the inflation rate against the rates provided by MMK Consulting in its Construction Cost Trends and Outlook 2014 Edition. MMK Consulting recommended allowances for short and long term, for all construction at BC Hydro, in the range of 2% to 3.5%. Based on the report by MMK Consulting, and discussions with other Utilities, BC Hydro Site C project Team included an inflation rate of 2% per annum for the 2014 estimate, at the lower end of the predicted construction inflation

Interest During Construction ("IDC") is based on long term interest rate and it was provided by BC Hydro Treasury. Long term interest rate was also verified against the rates forecasted by the BC Ministry of Finance. Policies related to how to account for IDC for the various components is being worked on.

The Site C Commercial Team was led by Michael Savidant. Michael is the Commercial Manager in Site C's Commercial Team, and led the team at the time the cost estimate was developed. Michael has a Bachelor of Applied Science degree in Engineering Physics as well as an MBA. Michael has 10 years of experience

in the energy industry and has experience in financial modelling for power projects and economic modelling for resource planning.

F. First Nations and Regional Benefits Agreement

Estimates for First Nations and Regional Benefits are based on the expected outcomes from negotiations with First Nations. The estimates were calculated by the Site C First Nations Team in collaboration with BC Hydro Site C Commercial Team.

The Site C First Nations Team was led by Trevor Proverbs who is responsible for consulting with and negotiating Benefit Agreements with Aboriginal groups in relation to the Site C Clean Energy Project.Trevor has a Bachelor of Arts degree in Sociology and 35 years' experience working in the areas of fisheries and aboriginal relations, serving as Chief Negotiator for British Columbia for 15 years. Trevor has concluded both treaties and reconciliation agreements with the Nisga'a Nation, Lheidli T'enneh First Nation, Sliammon First Nation, In-SHUCK-ch First Nation, K'omoks First Nation and the Haida Nation.

G. Oversight

The development of the Assumptions and the resulting cost estimate has been reviewed internally by various boards. The Technical Advisory Board reviews major decisions on the project, including the general arrangement and the robustness of the design, upon which the cost estimate is based. We understand that the process followed by the Site C Project Team also included consultation with its Technical Advisory Board and Executive Project Board. The boards that have an oversight role with respect to Site C are outlined in Table 4.

Table 4: Role of Oversight Groups with respect to Site C

Board	Chair of Board	Executive Members (non-exhaustive)	Role with respect to Site C
BC Hydro Board	Chair BC Hydro	Stephen Bellringer (Chair); Bill Adsit; W.J. Brad Bennett, O.B.C.; Larry Blain; James M. Brown; James P. Hatton, Q.C.; John Knappett; Tracey L. McVicar; Janine North, ICD.D; John Ritchie; Jack Weisgerber	• Overall approvals on project goals, scope, budget and schedule; • Approval of any significant changes to budget, scope and schedule; • Approval on contract awards over $50 million; and •
Executive Project Board	Chair BC Hydro	Stephen Bellringer (Chair) ; John Ritchie; Brad Bennett; Janine North	• Provide guidance and oversight to project staff and to the CEO on project strategy as well as on regulatory, First Nations, procurement and other issues as required

Table 4: Role of Oversight Groups with respect to Site C			
Board	**Chair of Board**	**Executive Members (non-exhaustive)**	**Role with respect to Site C**
Executive Team	President and Chief Executive Officer	President and CEO, BC Hydro; Senior Vice-President & Chief Human Resources Officer; President & Chief Executive Officer, Powerex; Executive Vice-President, Transmission & Distribution; Executive Vice-President, Generation; Executive Vice-President, Site C Clean Energy Project; Executive Vice-President & Chief Financial Officer; Senior Vice-President, Corporate Resources and General Counsel;	• Advise Executive Vice-President, Site C Clean Energy Project regarding the project and integration with other BC Hydro operations and considerations
Technical Advisory Board	Dr Norbert Morgenstern, Geological Engineer	International panel of experts in the development of major hydro-electric projects: • Dr Norbert Morgenstern, Geological Engineer • Karl Rytters, Hydraulics Engineer • Wynfrith Riemer, Geologist • Cassio Viotti, Dam Engineer	• Advise Executive Vice-President, Site C and Executive Project Board regarding the engineering and technical decisions related to project design consistent with best practices and current international guidelines.

Appendix 2: Integrated Engineering Team & BC Hydro Site C Estimating Team

The Site C Integrated Engineering Team comprised engineers and cost estimators from Klohn Crippen Berger, SNC-Lavalin and BC Hydro, and was led by John Nunn, Alfred Hanna and Andrew Watson. Klohn Crippen Berger is an internationally-recognized engineering and environmental services firm. SNC-Lavalin is an internationally-recognized engineering, procurement, construction and related technical services firm. Each of the team leaders (John Nunn, Alfred Hanna and Andrew Watson) is a senior engineer with several decades of relevant professional experience.

John Nunn has a Bachelor of Science degree in Civil Engineering, a Master of Science degree in Soil Mechanics & Foundation Engineering and is a Professional Engineer with 35 years' experience. Previous project roles have included Project Director and Design Manager.

Alfred Hanna has a Master of Engineering degree in Civil Engineering, a Doctorate in Geotechnical Engineering and is a Professional Engineer with 35 years' experience. Previous project roles have included Project Manager and Project Director.

Andrew Watson has a Master of Engineering degree in Geotechnical Engineering and is a Professional Engineer. Andrew is the Engineering Division Manager for BC Hydro and has worked on the Site C project since 2007. Andrew has worked as Lead Project Engineer for a variety of dam safety deficiency investigations, seismic upgrades and remediation projects within the past ten years at BC Hydro. Prior to joining BC Hydro Andrew gained several years' experience in the mining and engineering consulting fields

BC Hydro Site C Estimating Team was led by Alan Le Couteur. Alan is a Certified Management Accountant and has a Bachelor of Science degree in Forestry. Alan has significant experience in financial modelling and analysis, business case development and risk management of projects and has taken up various roles in BC Hydro since 2006.

Jeff Acland is BC Hydro's Estimating Team Lead. Jeff has a Bachelor of Applied Science degree in Engineering and is a Professional Engineer. Jeff has 16 years of construction and engineering experience, including significant experience estimating costs for major projects.

John Boots is BC Hydro's Principal Engineer for Estimating and Scheduling. John has a Bachelor of Applied Science degree in Civil Engineering and is a Professional Engineer. John has 33 years of experience in heavy civil construction and hydroelectric engineering, and is a member of the Association for the Advancement of Cost Engineering, and the BC Labour Market Industry.