Site C
Technical Briefing

Don Wright
Deputy Minister to the Premier
December 11, 2017
After review by BCUC, meeting with Treaty 8 First Nations, advice from independent experts and lengthy deliberation

Cabinet has made the difficult decision to complete Site C construction
Outline of Technical Presentation

I. Historical Context
II. Government’s Decision Criteria
III. Revised Cost Estimates
IV. Ratepayer Impacts
V. Fiscal Impacts/Risks
VI. Concluding Comments
I. Historical Context
Hydro Rates Have Been Rising Significantly Since 2003

[Graph showing BC Hydro rate increases from 2000 to 2017.]
## New Power More Expensive Than Heritage Assets

<table>
<thead>
<tr>
<th>Heritage Assets</th>
<th>Average of IPP</th>
<th>Projected Site C</th>
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<tbody>
<tr>
<td>$32 / MWh</td>
<td>$100 / MWh</td>
<td>$60 / MWh</td>
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</table>
IPP Share of Supply Growing

IPP Historical Generation (GWh)
BC Hydro Debt is Growing

BC Hydro Net Long-Term Debt ($ Millions)
BC Hydro’s Regulatory Account Balance Is Growing

BC Hydro Regulatory Account Balances ($ Millions)
Current 10-Year Rate Plan Schedules Further Increases
How Our Rates Compare, Residential

Source: Hydro Quebec, NRCAN, US EIA
Sources of Electricity

Source: Hydro Quebec, NRCAN, US EIA
Other sources to 100% includes biomass, nuclear
II. Government’s Decision Criteria
Criteria

1. Ratepayer Impact
2. Fiscal Impact / Risks
3. First Nation Impacts
4. GHG Targets
5. Agriculture / Food Security
III. Revised Cost Estimates
Projected Cost to Complete: $10.7 Billion

- 2014 approval was for $8.335 billion
  - With an additional $440 million risk reserve
  - For a total of $8.775 billion
- Costs to date have exceed budgeted amounts
- One-year delay of river diversion estimated to increase costs by $610 million
- Future contracts projected to be higher than budgeted amounts
- Current mid-point estimate is now $9.992 billion
  - $1.657 billion over 2014 estimate
- Given what has happened to date, risk reserve has been increased
## Change in Cost Estimate

<table>
<thead>
<tr>
<th>Cost</th>
<th>2014</th>
<th>Current</th>
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<tbody>
<tr>
<td>Direct Costs</td>
<td>4,940</td>
<td>5,839</td>
</tr>
<tr>
<td>Indirect and Overhead</td>
<td>1,194</td>
<td>2,010</td>
</tr>
<tr>
<td>Contingency</td>
<td>794</td>
<td>858</td>
</tr>
<tr>
<td>Interest before completion</td>
<td>1,407</td>
<td>1,285</td>
</tr>
<tr>
<td><strong>Total Before Risk Reserve</strong></td>
<td>8,335</td>
<td>9,992</td>
</tr>
<tr>
<td>Risk Reserve</td>
<td>440</td>
<td>708</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,775</strong></td>
<td><strong>10,700</strong></td>
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Comments on Cost Escalation

• Government will be putting in place enhanced oversight to ensure final costs are at or below $10.7 billion
• $10.7 billion is used in making comparisons of the continue versus terminate scenarios
IV. Rate Impacts
Comparison of Load Forecasts

- **Low-High Load Forecast Range**
- **BC Hydro Mid-Load Forecast**
- **Deloitte Alternative Load Scenario**
- **Electrification**

Energy (GWh) vs. Years:

- **F2018** to **F2036**
Rate Impact Analysis Assumptions

- BCUC Low Load Forecast
- BCUC “Alternative Portfolio” assumptions
- $10.7 B Site C Cost
- 10 year amortization of $4 billion in termination scenario
Rate Impacts Under a Low Load Forecast

- **L1** - Low load, continue with Site C, BCH portfolio
- **L2** - Low load, terminate Site C, pursue BCUC portfolio

Chart showing the rate impacts from F2019 to F2049 with two scenarios:
- **Terminate Site C**
- **Continue Site C**

The chart indicates that continuing Site C leads to higher rate impacts compared to terminating Site C.
## What Is The Impact On Ratepayers?

<table>
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<th>Complete Site C</th>
<th>Terminate Site C</th>
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<tr>
<td>• Rate impact 1.1% in 2025, and 1.1% in 2026 under a rate smoothing scenario over 10 years, then decreasing (assuming revised $10.7B project cost)</td>
<td>• Increases rates, starting in 2020 to recover sunk and termination costs</td>
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<td></td>
<td>• A 12% rate increase would need to be in place for 10 years</td>
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Impact of Terminating Site C on Customers

Results in a rate increase of 12%, effective 2020

Single Family Home, Vancouver Island
• Annual hydro bill $1,650
  +$198 / year

Lumber Mill, BC Interior
• Annual hydro bill $1.6 million
  +$192,000 / year

Medium Data Centre
• Annual hydro bill $1.5 million
  +$180,000 / year

Large Lower Mainland Hospital
• Annual hydro bill $3.1 million
  +$372,000 / year
Demand Affects Relative Rate Impact

• If demand exceeds low load forecast, relative advantage of complete scenario increases over terminate scenario
Rate Impacts Under a Mid Load Forecast

Option M1 - Mid load, continue Site C
Option M2 - Mid load, terminate Site C, pursue BCH portfolio
V. Fiscal Impacts / Risks
Some Inconvenient Arithmetic

• If government decided to terminate, $4 billion in debt has to be absorbed by someone
  • Ratepayers
  • BC Hydro
  • Taxpayers

• The previous section looked at the implications if ratepayers absorbed the cost
Could BC Hydro Absorb Termination Costs?

• They could
• But this would
  • Wipe out more than 80% of BC Hydro’s equity
  • The $4 billion loss would still be consolidated on the books of the Government Reporting Entity
  • Involve ongoing debt interest costs of $120-150 million per year
Biggest Risk Of The Hydro Absorb Scenario

• In a scenario where BC Hydro was to absorb the $4 billion termination costs:
  
• Credit rating agencies could determine that BC Hydro was no longer a commercially viable entity
  Resulting in $20 billion debt being reclassified as taxpayer-supported debt
  • Likely leading to a downgrade of the Province’s credit rating
  • Resulting in higher interest costs for the (then) $65 billion in taxpayer-supported debt
Could the Minister of Finance Absorb Termination Costs?

• Central Government’s Consolidated Revenue Fund would take on the $4 billion of debt and recapitalize BC Hydro
• This would likely preserve BC Hydro’s status as a commercial entity
• But...
Having the Minister of Finance Absorb Termination Costs Would

- Still entail a $4 billion loss in Government Reporting Entity
- Still involve $120-$150 million / year in interest costs that would have to be serviced
- Could lead to a credit rating downgrade, adding even more debt interest costs to taxpayers
- Crowd out room for new capital project spending
  - Schools, hospitals, housing, bridges, highways, etc.
What is $4 Billion Equivalent To?

- 66 secondary schools ($60 million each); or,
- 11 hospital projects similar to the North Island Hospitals (Province’s share $365 million); or,
- 12 highway projects similar to the Okanagan Valley Corridor Project (Province’s share $330 million); or,
- 3 Pattullo Bridges ($1.3 billion each).
VI. Concluding Comments
In Summary

• Very tough decision for Government

• Decision to proceed primarily driven by need to:
  • Minimize impacts on BC Hydro ratepayers
  • Preserve the fiscal room to build schools, hospitals, housing, bridges etc.
Questions?