Introduction and Agenda

• What is an Integrated Electricity Plan and why are we doing one?
• How are we getting input on the IEP?
• What have we heard in the process?
• What are your thoughts on BC’s energy future?
• What are the next steps?
What is an Integrated Electricity Plan?

- A long-term plan that describes how BC Hydro will meet its customers’ needs for electricity

- Plan covers 20 years, updated every 2 years

- Ensures we meet customer electricity needs while factoring in financial, social and environmental considerations
### IEP Process

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<tr>
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First Nations and Stakeholder Input to the 2005 IEP

First Nations
Input as requested

Provincial
Selected Committee undertook facilitated decision analysis process

Regional
Information and facilitated sessions

Technical Resource Options
Open sessions to provide broad review of inputs to IEP process

Public Website / Polling

Dec 04 - Apr 05

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Public Website / Polling

Sep 05 - Nov 05

First Nations

Provincial

Regional

Resource Options Report

2005 IEP: 20-year study, 10-year Action Plan

Filed with BC Utilities Commission - Public Hearing Process
Input - First Nations

• Small hydro, biomass and Power Smart most desirable
• Placed high value on environment - land and flooded land, and GHG emissions
• Cost - least important attribute
• Employment & economic development opportunities are important to First Nations
Input - Your Region

• **Resource Options**
  – Favoured Power Smart, large hydro, small hydro
  – Renewable resources highly ranked
  – Strong support for small hydro
  – Some felt nuclear should be considered
  – Generally coal ranked lowest, but support for review of cleaner technology

• **Attributes**
  – Suggestion for new attributes
  – Attribute definitions need clarification
  – Most important attributes - environmental, especially GHG (not universal)
  – Permanent jobs important
  – Least important - number of projects and temporary jobs (Vernon) and land impacts (Kamloops)

**Other Concerns**
– Some believe Site C is a given
– Support for full life-cycle accounting
Normalized Swing Weights for Attributes:
Median by Region

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted UEC</td>
<td>0.25</td>
</tr>
<tr>
<td>GHG</td>
<td>0.20</td>
</tr>
<tr>
<td>Impacted Land - Footprint</td>
<td>0.15</td>
</tr>
<tr>
<td>Inundated Land (Water)</td>
<td>0.10</td>
</tr>
<tr>
<td>Local Emissions (Nox)</td>
<td>0.05</td>
</tr>
<tr>
<td>Permanent Jobs</td>
<td>0.00</td>
</tr>
<tr>
<td>Temporary Jobs</td>
<td>0.00</td>
</tr>
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</table>

- All Regions
- Abbotsford
- Campbell River
- Castlegar
- Cranbrook
- FN Abbotsford
- FN Kamloops
- FN Nanaimo
- FSJ 1
- FSJ 2
- Kamloops
- Kitimat
- Nanaimo
- Revelstoke
- Squamish
- Vancouver
- Vernon
- Victoria
Examples of “What Matters” in Electricity Planning

• **Social Impacts**
  – Regional Equity, Ownership Structure, Employment

• **Environmental Impacts**
  – Land Impacts (across six categories)
  – Air Impacts
    • GHG Emissions (upstream, in BC, net of exports)
    • Local Air Emissions (across seven emissions)
  – Aquatic Impacts (on fish habitat)

• **Financial**
  – Average Costs (including GHG offset costs), Cost risk

• **Other**
  – Resource Diversity, % Green Energy, Reliability of Supply
Input - Public

• Wind turbines - High support expressed
• Power Smart - High support expressed
• Small hydro - High support expressed
• New large hydro - Medium support expressed
• Gas plants - Medium support expressed
• Coal plants - Low support expressed
• Site C dam - Medium support expressed
• Demand Side Management: key questions addressed regarding calculation of costs, evaluation of savings, and new technologies. Suggestions made for rate design and energy efficiency technologies, programs and tools.

• Environmental attributes: Discussion about the difficulties and challenges of representing planning level information on environmental impacts. Discussion about the treatment of upstream impacts.

• Reliability & planning criteria: Improved understanding of planning criteria.
## Example of Key Resource Options by Region

<table>
<thead>
<tr>
<th>Resource</th>
<th>Interior</th>
<th>Kootenays</th>
<th>Lower Mainland</th>
<th>North</th>
<th>Vancouver Island</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
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<tr>
<td>Biogas</td>
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<td></td>
<td>✔️</td>
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<tr>
<td>Coal</td>
<td></td>
<td>✔️</td>
<td></td>
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<tr>
<td>Cogen</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
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<tr>
<td>Large Hydro</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td></td>
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<td>Natural Gas</td>
<td>✔️</td>
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• Provincial IEP Committee
  – Sixteen diverse participants representing a wide range of interests (First Nations, customer groups, environmental & social groups, BC Hydro, IPP Association, etc)
  – Met six times over fourteen days from December, 2004 to September, 2005.
  – Received input from:
    • 2004 IEP
    • Resource Options Workshop
    • Regional IEP Workshops
    • First Nations Workshops
    • subject area experts
    • BC Hydro electricity planning team
Five Key Planning Questions

- Addressed five high level questions:
  - What degree of energy **Self Sufficiency** is appropriate for BC Hydro to pursue?
  - What overall **Resource Mix** should be pursued?
  - How much **Demand Side Management** to pursue?
  - Future role of **Site C**?
  - Future role of **Burrard Generating Station**?
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## Proposed Strategies - Common Elements

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• Cost Risk
• Site C and past grievances
• Capacity Projects
• Transmission Projects
## Proposed Strategies - Outcomes

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Next Steps

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<th>Late 2006/2007</th>
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<tr>
<td>File IEP</td>
<td>Revenue Requirement Application</td>
<td>Initiate 2007 IEP</td>
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<tr>
<td>(with the Action Plan as the last chapter)</td>
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Continuation of Programs like Power Smart
Continuation of Competitive Acquisition Process
Continuation of Individual Project Development

Feedback will inform future IEP Engagement, competitive acquisition processes, and individual project development
Any further questions or comments?

Thank you for participating in this discussion

Your views are appreciated