Info Session Date and Location
March 1, 2005
Revelstoke Recreation Centre
600 Campbell Ave, Revelstoke, B.C.

Attendees and Interests

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation/Interest/Organization</th>
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<tbody>
<tr>
<td>Chris Beers</td>
<td>Private Citizen</td>
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<td>Pat Sieber</td>
<td>Private Citizen</td>
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</tbody>
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BC Hydro/IEP Representatives

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<thead>
<tr>
<th>Name</th>
<th>Organisation &amp; Department</th>
<th>Role</th>
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<tbody>
<tr>
<td>Nancy Macleod</td>
<td>Community Relations Manager</td>
<td>Host/Community Relations</td>
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<td>Chris O’Riley</td>
<td>Power, Planning and Portfolio Management</td>
<td>Presenter</td>
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<td>Kathy Lee</td>
<td>Power, Planning and Portfolio Management</td>
<td>Technical Resource Support</td>
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<tr>
<td>Victoria Grant-Smith</td>
<td>External Consultant</td>
<td>Note Taker</td>
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<tr>
<td>David Facey</td>
<td>Manager of Stakeholder Engagement</td>
<td>Facilitator</td>
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Discussion Highlights

The following is a summary of the key discussions

- **Need for benefits to be distributed to communities in which Generation facilities and reservoirs are located, such as Revelstoke.** A recommendation was made that BC Hydro should consider decentralizing to support more jobs in power Generation communities so that benefits flow back to the impacted communities. A comment was made that many of the jobs based in Vancouver could be done from regional locations.

- **Generation closer to the load.** Consider proximity of benefits and impacts when making resource choices, that is, if the power is needed in the Lower Mainland, develop resources there, rather than creating an impact elsewhere without the associated benefit. Locating generation in proximity to use has benefits to increase conservation awareness which may be a bigger factor than pricing in terms of changing energy usage behaviour.

- Concern regarding political control by Provincial Government of preferred portfolio.

- Conservation at the consumer level is important.

- Maintain low electricity rates for BC Hydro customers.

- Minimize environmental impacts and make resource choices that reflect that value.
1. Welcome and Introductions

Nancy MacLeod, BC Hydro Community Relations Manager, formally welcomed attendees to the 2005 Revelstoke Integrated Electricity Plan (IEP) information session, and introduced the IEP team members. She gave a brief introduction to the 2005 IEP process of which the purpose is to develop a long-term plan to meet BC Hydro’s customer’s needs over the next 15 to 20 years. The plan will set direction for short-term and medium-term planning, and is an ongoing process.

The IEP is a complex process which involves making various tradeoffs. The stakeholder engagement process is designed to assist BC Hydro in identifying values important to consumers, for example, reliability, cost, environmental protection or regional specific issues. The 2005 IEP builds on the 2004 IEP process, and future First Nations and stakeholder IEP engagement processes will be developed from the feedback received from stakeholders during the 2005 IEP process.

There is also a provincial IEP committee, with representatives from throughout the province who are tasked with developing a preferred portfolio. Feedback received from the evening’s session will be summarised and provided to the provincial committee. Input from the public about their priorities and values is very important to BC Hydro and can be provided through the information sessions, workshops and online through the BC Hydro website. Nancy MacLeod provided an outline of the evening’s agenda.

2. IEP Presentation

Chris O’Riley welcomed participants to the evening session and thanked everybody for coming to the session on a week night. He gave a presentation on the IEP process, providing a brief overview of the purpose, feedback received during the 2004 IEP consultation process, and the steps involved in developing the 2005 IEP. He explained that the outcome of the IEP process will be a preferred portfolio, which is a mix of resource options that will best meet future electricity needs of British Columbia and reflect the values of First Nations and BC Hydro stakeholders. Participants at the evening information session were invited to join the Revelstoke workshop to be held the following day. The forum was described as a full-day workshop where stakeholders would have an opportunity to discuss resource options, values and priorities in more depth than there is usually time for during the shorter information sessions.

2.1 Questions and Discussion

What do you consider negative environmental impacts?

BC Hydro is currently developing an environmental footprint assessment tool, which includes looking at impacts such as emissions, land use, chemical and waste emissions, use of non-renewable resources and using this information to quantify impacts which can be used when making decisions.

Where is the wind resource in the Kootenays?

According to the wind resource map, there are wind projects on mountain ridges in the Kootenays. However, all the wind projects used in coming up with the 1000 GWh resource bundle, that is, the wind projects used to characterize the wind resource option, are located in the Peace Region. Wind power is difficult for B.C. as opportunities are often in areas that
are remote from load, resulting in high transmission costs and projects that may have high environmental costs. BC Hydro has been working with the wind industry and recently held a workshop with the industry association to develop mutual understanding about particular issues relating to the development of wind power projects. These issues include wind industry needs, where the industry currently is in terms of its development, and key questions about wind power, such as dependable capacity. BC Hydro currently has one wind contract on Northern Vancouver Island from a call for proposals. The facility is not built yet, therefore it’s not currently contributing to meeting electrical load. There are a number of challenges associated with getting this project off the ground. Another problem faced by using wind technology is opposition from local communities, such as with the Duke Point project in Victoria. BC Hydro is currently spending a lot of time on wind as a developing resource, but it may be that small hydro is a better fit.

Wave and tidal power: A participant made a comment that the presentation portrayed wave and tidal power as only future options due to the need for significant technology development, however the participant recently saw a television program on tidal power in Europe and thought perhaps tidal power would be a good option for communities on the West Coast of Vancouver Island.

BC Hydro’s response was that BC Hydro is looking at these pilot projects in Scotland and Australia and hoping to learn from their experience. Information emerging from pilot projects such as these are critical for BC Hydro to support development of new technologies, such as wind, which are not currently commercially viable. BC Hydro is considering the possibility of a commercial call for power for less commercial technologies, such as tidal. Investment in these industries would support their development towards becoming more commercially viable resource options.

What is triple bottom line?
This is a concept and not a BC Hydro creation but it is used by industry across different sectors.

Is Revelstoke Unit 5 a Resource Smart resource option?
Yes, although perhaps not officially but internally. BC Hydro refers to it that way since it is improving the efficiency of an existing plant.

A concern was raised by a participant that low water levels are already a concern for Revelstoke and other Columbia generation facilities. Would the Revelstoke Unit 5 addition require additional water?
The amount of water used is fixed. A 5th unit allows you to shape water usage into a smaller number of hours and generate a higher amount of electricity over that timeframe. So it would continue to operate as a peaking plant with increased efficiency. Average flow over the course of a year would not change, just the amount of water per generating period. Minimum flow would follow the consensus agreement reached during the Columbia Water Use Plan (WUP) process. Later discussion focussed on other impacts of increasing flow rate over specific timeframes including environmental impacts to wetlands, fish and aquatic resources.
Will there be a stakeholder engagement process if BC Hydro is considering Revelstoke 5? If BC Hydro starts to pursue development of Revelstoke 5, there will be a stakeholder consultation process, and a WUP would be initiated to engage the Columbia WUP Consultative Committee members in discussions and modelling based on a 5-unit operation at Revelstoke generating station. The Columbia WUP Consultative Committee held its final meetings in June 2004 and the Water Use Plan for the three key BC Hydro Columbia basin facilities is in the process of being finalized for submission to the Water Controller. This would be the base case operation for discussion about Revelstoke Unit 5.

Would the addition of turbines to Keenleyside be a Resource Smart project? No.

Can you not put control mechanisms to water heaters which would ensure they were turned on and off to improve time-of-use efficiency? Yes, but they are expensive and rates are low so it is not as effective as it could be.

Regarding representation on regional groups and how to ensure effective stakeholder engagement, do you have the same people who were involved in the WUP involved in the IEP sessions? No they are different although there are some overlaps; however, people were identified separately.

If the Site C project proceeded, would there be flooding of agricultural land along the Peace River? Yes, there is some farmland included in the area for the possible Site C project. BC Hydro owns a large majority of that land and there is also some Crown-owned land. Much of that land is currently leased for agricultural use.

2.2 General Comments

• **Movement activated lighting has been installed in local schools:** BC Hydro has been quite successful in getting these installed and used in hospitals and schools, which helps reduce energy consumption.

• **Difference between capacity and energy:** Capacity refers to the capability of a generation unit or system to meet peak demand for energy at any given point in time while energy is the amount people consume over the year. So currently there are lots of possible resources which can produce energy, but only at specific times of the year and not consistently throughout the year. Large hydro resources essentially allow energy to be stored through water in reservoirs until required. A mix of resources is needed to ensure capacity. Thermal resources provide capacity and energy.

• **Power Smart:** So far Power Smart is linked more to energy than capacity and has performed well with getting people more energy efficient. The program is now trying to focus on peak load shaving and time of use.
• **Peak Load /Time of Use:** A participant commented that in Switzerland, houses are wired so that you cannot run appliances like washing machines at peak times like when you are making dinner. BC Hydro’s comment was that current metering systems and policies in B.C. do not encourage efficient time-of-use energy management, however BC Hydro currently has pilot projects underway to look at time-of-use metering to track usage. The results of these pilot projects will help determine if and how BC Hydro rolls out a program to improve time-of-use efficiency.

3. **Values/Resource Options Exercise**

Due to the limited number of attendees and with the support of the participants, it was agreed that the participants would complete the in-depth workshop exercises rather than discuss the general values and resources preference questions.

David Facey introduced the values exercise and gave a brief explanation as to their purpose, how the exercises should be completed and the intended use of the information.

The following key points were noted:

• The exercise does not include the full suite of resource options as there are a number which are not listed.

• The exercise is intended to encourage discussion around attributes and resource options. Some of the data is a rough estimation and is not meant to be exact, but rather illustrative to stimulate discussion.

• Agreement was reached regarding the attribute “number of projects”, a lower number of projects was deemed preferable.

• Where do the GHGs come from in Geothermal? Greenhouse gases are found in steam from underground dissolved gas.

• Is the data for wind farms taken from agricultural land? Data in the table is a mixture of five different wind projects in the Peace Area. The five projects are Mt. Wartenbe, Pingle Creek Ridge, Aasen, Bear Mountain North and South. The Aasen site is located within a rural farming area, and the Bear Mountain North site is located within a designated recreation area. The present land use of the Bear Mountain South site, the Pingle Creek Ridge site and the Mt. Wartenbe site is unclear but they fall within the limited B.C. breeding range of several prairie and eastern songbirds. They likely are not on agricultural land. It was noted that during operation of the wind farm, a significant portion of the wind farm can be used for agriculture or limited forestry purposes.

• **Why is there “not applicable” for temporary jobs under biomass?** BC Hydro did not have data.
Agreement was reached to finalise the list of attributes as follows:

- Adjusted cost vs. raw cost
- Footprint land vs. permitted area (Note: issues regarding access roads, amount of infrastructure and transmission lines were discussed.)

### 3.1 Exercise Results

**Direct Ranking:**
- Coal ranked lowest.

**Swing Weighting (Attributes)**
- Reduction of GHG considered important

**Swing Weighting (Resource Options)**
- Geothermal, Power Smart and Biomass top resources
- Coal performs worst, with wind and natural gas
- Middle, large and small hydro

### 3.2 Questions and Discussion on Exercises

- One participant felt natural gas was an important resource option, as natural gas would have impacts closer to people receiving the benefits of energy and jobs. Impact of location as opposed to using price as an incentive to users would be a useful incentive to improve efficiency.
- Participant felt that with regard to biomass as a viable resource option, location to load is important. Biomass energy opportunities are mainly in the interior whereas power demand/requirements are in the Lower Mainland.
- **Would Biomass include the biogas methane projects?** Yes, it would.
- One participant felt that the data used for wind, in particular impacted area, affected their overall value.

### 4. Questions and Discussion

How independent is BC Hydro and how much political pressure could there be for BC Hydro to take a particular route in developing the IEP?

IEP processes are regulated by British Columbia Utilities Commission (BCUC) which has the responsibility to approve plans. The Energy Plan 2002 provided by the provincial government has also set good policy outline and framework, rather than micro managing. A long-term goal developed by BC Hydro and approved by the Board of Directors includes a good policy outline and framework, which focuses on stakeholder engagement.
Is there anything to ensure that the IEP addresses a key issue that benefits from energy generation have mainly been in the lower mainland while effects have been in the interior?
A key part of the current process of developing a provincial plan is undertaking regional workshops. It is not just where impact is located, but about appreciating impacts and where the benefits, such as local economic development and employment, are felt. Participants had concerns about where BC Hydro jobs benefits are located, limited in Revelstoke, which is responsible for producing large proportion of provincial energy. A recommendation was that BC Hydro should look at the option of decentralizing to support more jobs in power generation areas so that the benefits flow back to them.

5. Summary of Meeting / Next Steps
Nancy MacLeod thanked everyone for their valuable comments and input. The information session notes and other information relating to the IEP process can be seen online at the BC Hydro website. Participants were asked to fill out the evaluation sheet and the door prize was awarded.

Participants were reminded that they could attend the workshop to be held the following day, March 2, if interested.

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