

## SUMMARY

Sept. 14, 2010

Time 8:30 A.M. – 3:30 P.M.

TYPE OF MEETING	Technical Workshop
PRESENTERS – in order of the presentations	<p>Anne Wilson, Integrated Resource Planning</p> <p>Cam Matheson, Director, Integrated Resource Planning</p> <p>Randy Reimann, Manager, Resource Planning</p> <p>Kenna Hoskins, Manager, Responsible for Consultation and Business Planning</p> <p>Nadja Holowaty, Team Lead for Resource Options Update</p> <p>John Duffy, Manager, Strategic Planning, Power Smart</p> <p>Edlira Gjoshe, Integrated Resource Planning</p>
FACILITATOR	Anne Wilson - Moderator
ATTENDEES	In attendance were individuals (names not disclosed due to privacy policy) that included resource options knowledge experts.
PURPOSE & AGENDA	<p>Purpose:</p> <p>To invite those with technical information on BC’s energy resource potential to provide input through subsequent resource-specific technical discussions.</p> <p>Agenda:</p> <ul style="list-style-type: none"> <li>• Context: Overview of the Clean Energy Act &amp; 2011 IRP development process</li> <li>• Overview of BC Hydro’s resource options data update process</li> <li>• Identification of specific data needs by resource type: <ul style="list-style-type: none"> <li>○ Break-out groups by resource type</li> <li>○ Sign-up to participate in subsequent technical sessions by resource type to be conducted between mid-September and October 15</li> </ul> </li> </ul>

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## MEETING SUMMARY

## 1. WELCOME AND REVIEW AGENDA

**Anne Wilson, Moderator (Integrated Resource Planning (IRP), BC Hydro)**

The technical workshop was organized by BC Hydro and brought together engaged stakeholders and other interested parties. The Moderator welcomed everyone, reviewed the safety exits from the building and noted that feedback forms on the session were available, encouraging all participants to complete the form and return it.

The Moderator noted that a power point presentation augmented the speakers' comments and that a copy of the power point presentation would be available on the BC Hydro website.

## 2. CONTEXT

**Cam Matheson, Director, Resource Planning, BC Hydro**

- Provided highlights of the Clean Energy Act
- Noted that the Clean Energy Act establishes the IRP process and requirements
- Discussed greenhouse gas reduction and electrification components of the Act
- Noted the projects, programs, contracts and expenditures exempted in the Act from BCUC review
- Noted direction to the BC Utilities Commission

**2.1 Questions, Answers and Comments**

*The following identifies key themes arising during the question and answer period and summarizes BC Hydro's associated response.*

***PARTICIPANT FUNDING DURING THE IRP***

BC Hydro is currently looking into participant funding guidelines for the IRP to ensure an opportunity for meaningful input.

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**ASSESSMENT OF TRANSMISSION NEEDS BY GEOGRAPHIC AREA**

It was clarified that this assessment, launched for the Section 5 Inquiry, is being continued within the IRP planning, with the idea of assessing whether it may make sense to extend a transmission line into a region if there are enough resources there to make it a viable option as part of a long term transmission strategy.

**LOAD FORECAST**

The load forecast forms the basis of BC Hydro's planning, and there are questions around whether the expected load will be there in the future to rationalize the increased procurement of electricity. It was mentioned that government policies will also play a role in affecting future load.

**3. 2011 IRP OVERVIEW****Randy Reimann, Manager of Resource Planning, BC Hydro**

- Purpose of the IRP
- Differences: IRP versus LTAP (Long Term Acquisition Plan)
- Process to develop IRP
- IRP key issues

**3.1 Questions, Answers and Comments**

*The following identifies key themes arising during the question and answer period and summarizes BC Hydro's associated response.*

**RISK ANALYSIS METHODOLOGY**

BC Hydro will be using the same decision tree methodology as was used during the 2008 Long Term Acquisition Plan.

**EXPORT POTENTIAL PRIOR TO IRP APPROVAL**

BC Hydro will be assessing export opportunities within the IRP, however, the IRP is a long term planning document and activities regarding export opportunities may occur prior to IRP approval.

**PORTFOLIO MODELLING**

BC Hydro uses a linear optimization model which considers how much more electricity demand BC Hydro is expecting, and how much current supply we have to meet that demand. Constraints can be placed on the model runs, and as well, the model can consider various future uncertainties (e.g. electricity price forecasts).

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## CLEAN ENERGY OBJECTIVES

The Clean Energy Act compels BC Hydro to consider the 16 energy objectives as it is developing, analyzing and assessing risks in the plan. Ultimately, the 16 objectives will form the basis of the trade-offs that will need to take place as government approves the plan.

## 20 YEAR PORTFOLIO ANALYSIS AND 30 YEAR TRANSMISSION OUTLOOK

There seemed to be a disconnect between the 20 year portfolio analysis and the 30 year transmission outlook. It was clarified that the long lead time for transmission construction requires a longer outlook, and 20 years is an adequate time frame for resource planning and the IRP will align the two.

**4. 2011 IRP CONSULTATION PROCESS****Kenna Hoskins, Manager Responsible for Consultation and Business Planning, BC Hydro**

- Province-wide consultation on IRP
- Streams of engagement
- Timeline for consultation
- Scope of consultation
- 2011 IRP: Email Updates
- 2011 IRP: Contact Us at: [integrated.resource.planning@bchydro.com](mailto:integrated.resource.planning@bchydro.com)

**4.1 Questions and Answers**

*The following identifies key themes arising during the question and answer period and summarizes BC Hydro's associated response.*

## INTEGRATED POWER OFFER

The integrated power offer was described briefly. It is a new offer that provides an integrated portfolio of incentives and long-term contracts to optimize energy efficiency savings and renewable power production that a customer can offer BC Hydro. Currently, BC Hydro is working with eight pulp and paper customers, and while we are looking at expanding to other customer groups, BC Hydro is not at that point yet.

## GHG EMISSIONS REDUCTION

It was clarified that 80% reduction in GHG emissions by 2050 is a provincial goal. There was a question around the marginal GHG emissions rate. It was clarified that the marginal GHG rate is net zero or brought to net zero by 2016. In terms of operating margin, BC Hydro looks at the overall western grid for that number. A new build would not be able to sell offsets. With respect to emission rates

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regarding trade (ie the amount of GHG emission reduction that would occur by exporting clean electricity), BC Hydro is in the process of determining that and using the GHG registry and the Western Council Initiative as sources of information.

### CLEAN ENERGY TARGET

It was clarified that that the energy object to generate 93% of electricity using clean and renewable resources does not include trade (does not take into account what is being imported or exported.)

### LONG TERM RATES EFFECT ON LOAD GROWTH

There was a concern that increasing rates over time due to the cost of new generation would impact load growth. It was confirmed that BC Hydro is considering how increasing rates may impact load in the future.

## 5. 2010 – ROU – SCOPE, OBJECTIVES AND SCHEDULE

### **Nadja Holowaty, Team Lead for Resources Options Update**

- 2010 resource options update
  - Objectives
  - Scope
- Attributes
- Timeline

## 6. 2010 ROU – RESOURCE OPTION TYPES

### **John Duffy, Manager, Strategic Planning Power Smart**

- Demand-side management (DSM) resource options
- DSM options in 2008 LTAP
- DSM options under development for 2011 IRP
- Engagement on DSM options

## 7. 2010 RESOURCES OPTIONS UPDATE SUPPLY-SIDE RESOURCE OPTIONS

### **Nadja Holowaty, Team Lead for Resources Options Update**

- 2010 resources options update
- Categories of supply-side resource options
  - Biomass
  - Wind
  - Geothermal

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- Thermal
- Hydro
- Ocean
- Hydrokinetic
- Other resource options
- Transmission

**7.1 Questions, Answers and Comments**

*The following identifies key themes arising during the question and answer period and summarizes BC Hydro's associated response.*

**SPACE HEATING (DEMAND SIDE MANAGEMENT)**

There was a question around how space heating (e.g. in residential towers) would be addressed under existing standards and within the IRP. BC Hydro will be estimating the BC Building Code that could affect space heating on the residential side. Space heating for new and existing buildings would be in the scope of the plan.

**PUMPED STORAGE**

Pumped storage is being looked at in the Resource Options Update.

**ECONOMIC ANALYSIS OF PLAN**

BC Hydro will not be undertaking an economic analysis of the plan or government policy, however, as we develop and implement the plan, it is done in the most cost effective way.

**PUBLIC INFORMATION**

A question arose around a system to make information available to the public, and provide opportunities for input. BC Hydro is gathering information regarding the resource options and there will be opportunity to scrutinize the information on the website, as well as reporting out on it in December. This afternoon's breakout sessions are also providing people with an opportunity to provide input. The content of what is presented today will be posted on the website. It was noted that, as there is no longer a Utilities Commission process, more effort and thought should go into what is on the web and how people can have input.

**BUILDING CODE**

As part of the DSM plan, BC Hydro is estimating savings coming from the result of building code updates, for example requirements for insulation. It is expected updates to occur again in 2011 and those are being considered in our analysis.

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### TRANSMISSION

Transmission options will be reviewed in the December report out session.

## 8. 2010 ROU – ATTRIBUTES SUPPLY-SIDE ATTRIBUTES

### Nadja Holowaty, BC Hydro

- Introduction to:
  - Technical attributes
  - Financial attributes
  - Environmental attributes
  - Economic development attributes

## 9. 2010 RESOURCE OPTIONS UPDATE ENVIRONMENTAL ATTRIBUTES

### Anne Wilson, BC Hydro

- Environmental attributes:
  - categories and lenses
  - land metrics
  - marine metrics
  - atmosphere metrics
- Next Steps in developing methodology

### 9.1 Questions, Answers and Comments

*The following identifies key themes arising during the question and answer period and summarizes BC Hydro's associated response.*

#### USING THE ATTRIBUTES AS A SCREEN IN DEVELOPING PORTFOLIOS

Screening is applied to remove resource options for consideration if they fall within legally protected areas. Attributes will be used to characterize the portfolios rather than as a screening tool for selecting portfolios.

#### LINEAR DENSITY

It was clarified that there was no intention of putting a value on the linear density classes of Wilderness, Rural, Urban. That is, at this point we are not stating whether projects that disturb wilderness are more or less disruptive than disturbing land in a different category. It is a way to describe what is there now.

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### ASSESSING HISTORIC IMPACTS

It was identified that a lot of historic impacts have already occurred and the plan should consider these. There is a need to look at the history of land use and the history of use by First Nations, particularly if compensation programs look at current impact and don't take into consideration previous impacts on land. The differences between portfolio level planning versus project specific issues were discussed.

### WEIGHTING AND EVALUTING ATTRIBUTES AND TRADEOFFS

The analysis will characterize portfolios using the attributes that are under development. At this point BC Hydro cannot say exactly how they will be used until they have the information, except that they will be used to inform the analysis and ultimately the plan. The attributes will be applied to portfolio comparisons, which will include transmission and energy for exports.

### RELATIONSHIP WITH ENVIRONMENTAL ASSESSMENT PROCESS

The IRP is not conducting an impact assessment; rather it is characterizing the environmental implications at a level that is appropriate and useful for portfolio analysis. Project-specific impact assessments cannot be undertaken for provide-wide portfolio analysis.

### IMPACTS ON PROJECTS IN SPECIFIC REGIONS

Some concern was raised as to how the portfolio analysis and the environmental characterization may impact projects in certain regions of the province. It was clarified that portfolios do not focus on single points or projects, rather potential projects are aggregated. As a portfolio, they will be characterized. This is a high level planning exercise, and the need to assess granularity as the projects and attributes are rolled up was acknowledged.

## 10. 2010 RESOURCE OPTIONS UPDATE – ECONOMIC DEVELOPMENT ATTRIBUTES

### **Edlira Gjoshe, BC Hydro**

- Initial thoughts on developing economic development attributes
- Next steps

### **10.1 Questions, Answers and Comments**

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### ELASTICITY

Discussion arose around how the provincial Input/Output model would consider changes in demand from rate increases. Initial observations on the available Input/Output models suggest that these models are typically not set up to explore the relationship between rate increases and the provincial economy. However, in the course of the economic development attributes work, BC Hydro will further explore the capabilities of existing models and whether and how they can be used to address the above relationship.

### COMMUNITY ECONOMIC DEVELOPMENT

The provincial Input/Output models focus on the impacts to the provincial economy and may “overlook” some of the more regional or local considerations of encouraging community economic development, and in particular how that relates to First Nations. BC Hydro is interested in hearing comments and recommendations on how to incorporate these considerations in its portfolio analysis.

## 11. NEXT STEPS, WRAP-UP AND THANK YOU

### **Nadja Holowaty, BC Hydro**

- Thanked participants
- The list of options that will be updated was provided along with an understanding regarding the associated attributes.
- Invited participants to help BC Hydro update its understanding of BC’s energy resource potential by joining in the breakout groups this afternoon.
- Technical leads were introduced.

## 12. CONCLUSION

The event concluded at 11:55 a.m. and breakout sessions resumed at 1pm.