

**INVITATION TO ATTEND AN INFORMATION SESSION ABOUT
BC HYDRO'S 2004 INTEGRATED ELECTRICITY PLAN**

REVISED DATE: DEC. 9
REVISED LOCATION: BAYSHORE HOTEL

IPPBC members are invited to attend an information session about BC Hydro's 2004 Integrated Electricity Plan (IEP).

The last IEP was prepared in 1995, and updated in January 2000. The issue of the BC Government's Energy Plan in November 2002 provides a basis for proceeding with the development of the 2004 IEP.

The 2004 IEP will define BC Hydro's customers' future electricity needs and provide information on how BC Hydro expects to obtain it through Power Smart, Independent Power Producers (IPPs), and Resource Smart. The 2004 IEP will be based on meeting the objectives from the government's 'BC Energy Plan' which are:

- Low electricity rates and public ownership of BC Hydro;
- secure, reliable supply;
- more private sector opportunities;
- and environmental responsibility and no nuclear power sources.

Content: This session will provide an overview of the 2004 IEP, including information about its components and the development process. In addition, summary information about the Resource Options components of the 2004 IEP will be highlighted.

BC Hydro will consider and document feedback received on the Plan in general, and specifically on the draft resource inventory of the Plan.

NOTE: Much of the direction, timing and content of the 2004 IEP are determined by the BC Energy Plan and BC Hydro's regulators. Decisions on the 2004 IEP are the responsibility of BC Hydro management, acting within the BC Energy Plan policy and other directives.

Agenda to follow.

Attendees: As an important part of meeting BC Hydro's customers' future electricity needs, the private sector (through IPPs) have an important stake in this process.

Time: 1:30 pm to 4:30 pm, **December 9, 2003** (Revised from earlier date of Nov. 18)
Following the BCTC Transmission Issues Workshop in the morning

Location: **Westin Bayshore Hotel.**

This information session is free of charge. Refreshments will be served.

Name: _____

Organization: _____

RSVP by December 2, 2003 to Lexa Hobenshield. lexa.hobenshield@bchydro.com
Fax 604 623-3883.

For further information about these workshops, please contact Lexa Hobenshield at lexa.hobenshield@bchydro.com or at (604) 623-4154.

2004 Integrated Electricity Plan Information Session for IPPs
December 9, 2003
1:30pm to 4:30pm
Westin Bayshore Hotel, Cypress Room
1601 Bayshore Drive, Vancouver, BC
(604) 682-3377

1:30 pm	Welcome and introductions (10 mins)	BC Hydro Executive
1:40 pm	2004 IEP Presentation (15 mins)	Ron Monk
1:55 pm	2004 IEP Resource Options presentation (45 mins)	Andrea Estergaard
2:40 pm	Break (15 mins)	
2:55 pm	Break Out discussion (30 mins)	Facilitated
3:25 pm	Report Back to Large Group (50 mins)	Facilitated
4:15 pm	Close (15 mins)	Ron Monk

2004 Integrated Electricity Plan

Independent Power Producers of BC

09 December 2003



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Presentation No. 1



2004 Integrated Electricity Plan

Overview

Ron Monk

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Outline

- ◆ Objectives of Today
- ◆ What is the Integrated Electricity Plan
- ◆ BC Utilities Commission's role
- ◆ BC Hydro's Existing Plan
- ◆ Developing the New Plan
 - Process
 - Progress
 - First Nations and Stakeholder Engagement

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Objectives for Today

- ◆ Provide information on the development of the 2004 Integrated Electricity Plan, specifically, the resource options section of the Plan
- ◆ Obtain input to the Plan, specifically the resource options section of the Plan

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What is the Integrated Electricity Plan?

- ◆ The long term (20 year) plan for how BC Hydro will meet its customers' demand for electricity.
 - Includes a long term (20 year) outlook
 - Medium term (10 year) direction
 - Short term (4 year) action plan

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British Columbia Utilities Commission

- ◆ BC Hydro is required to file its plan with the BC Utilities Commission (BCUC). This is part of the BCUC's role as:
 - Approval authority over large capital projects, purchase contracts and demand side management programs.
 - Regulator of BC Hydro's electricity rates for customers.

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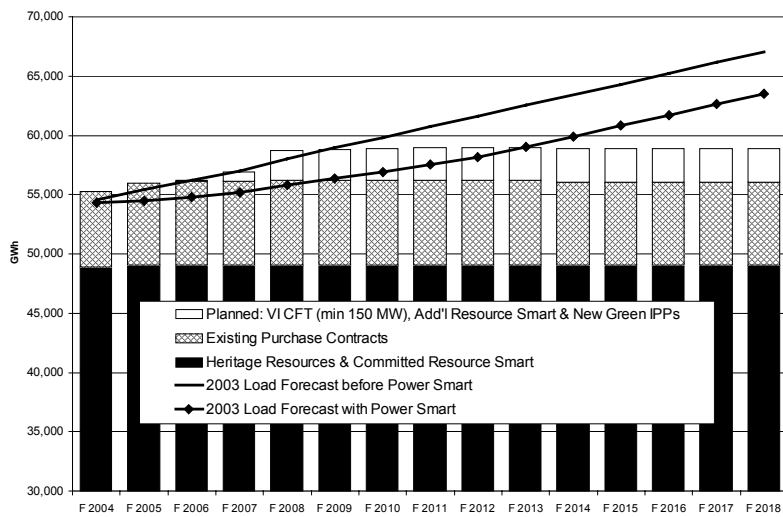
BC Hydro's Existing Plan

◆ Resource Acquisition Strategy for 2002-2012. Total by year 2012:

– Power Smart:	3,500 GWh/year
– Green & Customer Generation and future Independent Power Producer calls	3,300 GWh/year
– Vancouver Island:	2,100 GWh/year
– Resource Smart:	1,100 GWh/year
– Total	10,000 GWh/year

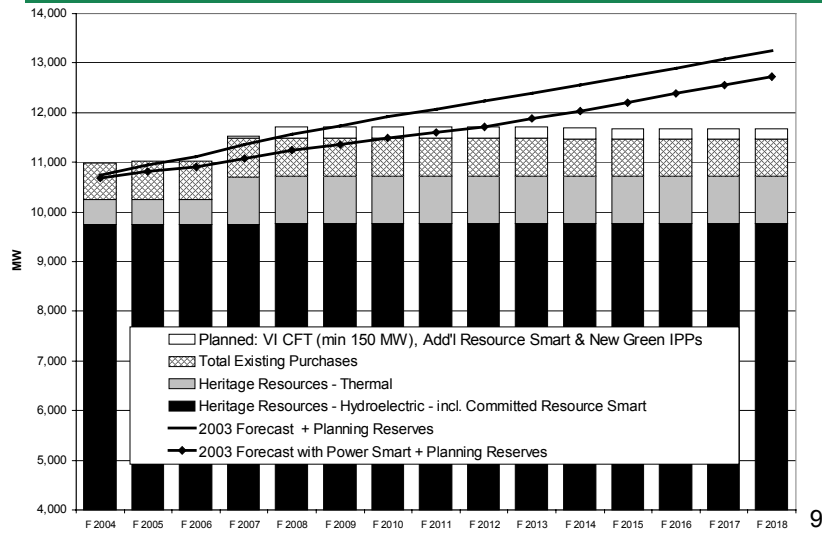
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Demand Supply Outlook: Energy



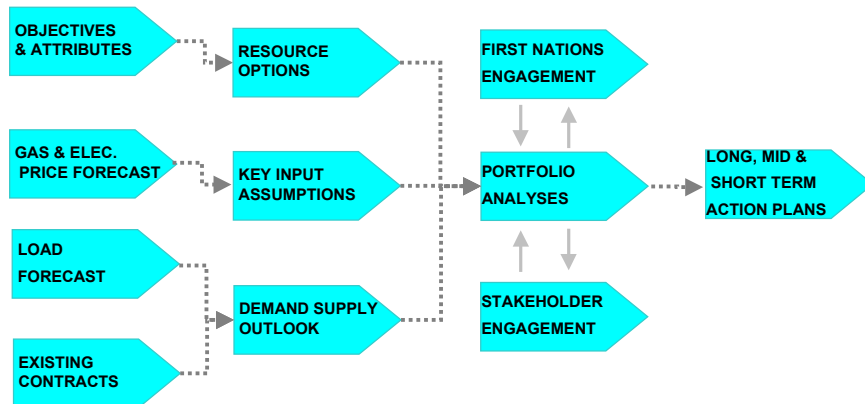
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Demand Supply Outlook: Dependable Capacity



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2004 Integrated Electricity Plan – Process Chart



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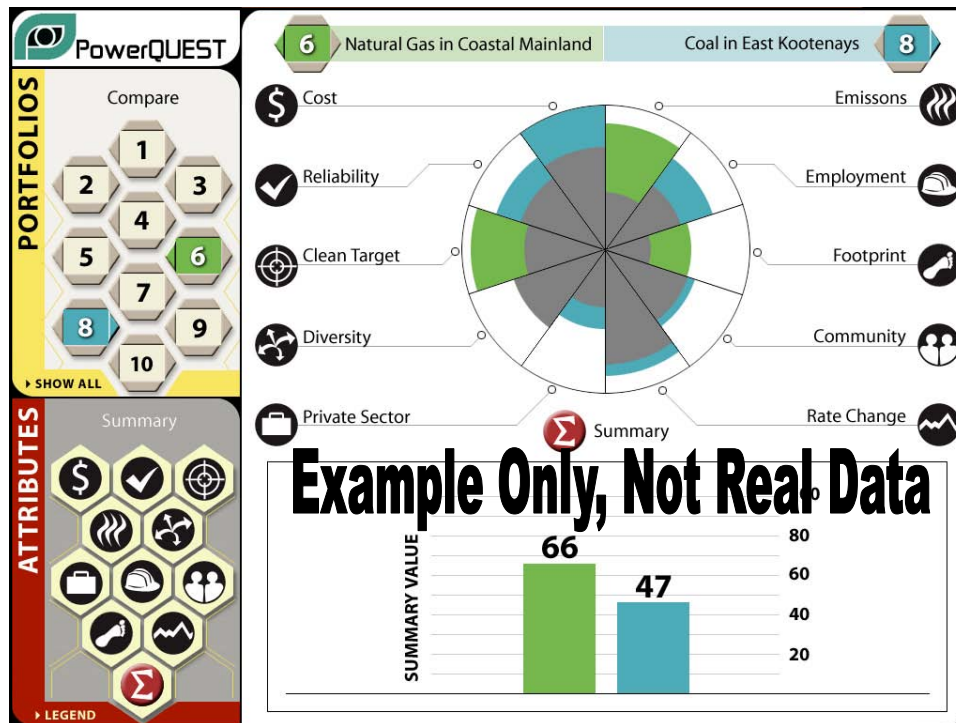
Objectives of the Plan

BC Government Energy Plan Objectives	2004 Integrated Electricity Plan Objectives
Low electricity rates and public ownership of BC Hydro	Minimize economic costs by establishing the least cost sequence of resources that meet customers' needs as well as other BC Hydro and provincial government policy objectives.
Secure, reliable supply	Maintain adequate dependable capacity and energy capability to meet customer needs through the application of relevant electricity industry and BC Hydro reliability planning criteria.
Private sector development of new electricity generation	Seek proposals from the private sector to supply power to BC Hydro
Environmental responsibility and no nuclear power sources	Enhance environmental and social responsibility with a voluntary 50% clean energy target through Power Smart, Customer-Based Generation, Green Energy, Resource Smart Programs and project proposals that meet or exceed environmental and social requirements.

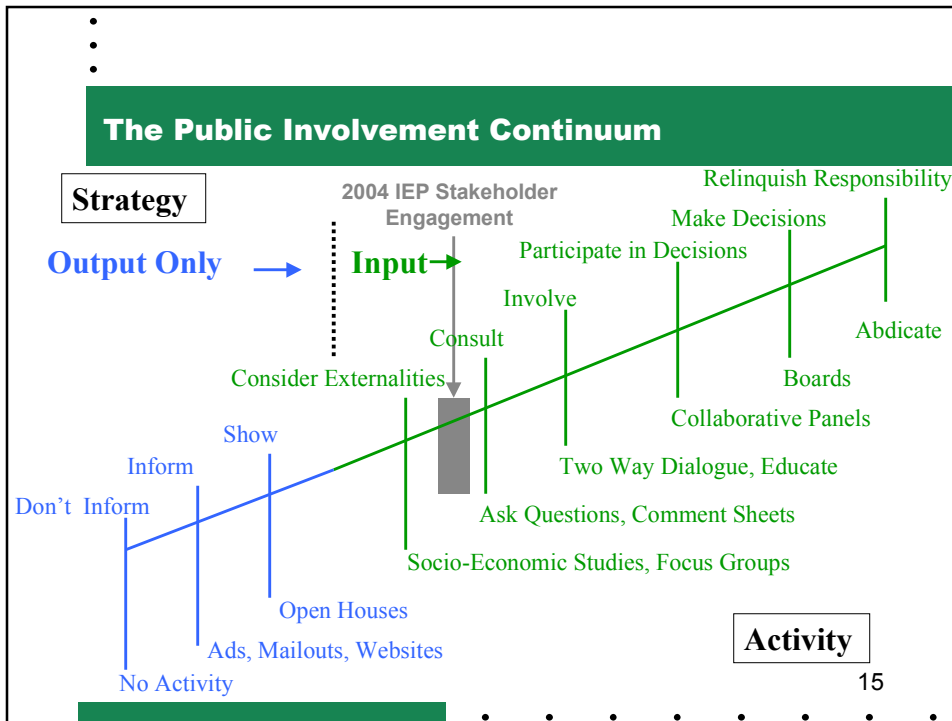
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Demand Supply Outlook

- ◆ Electric load forecast updated
- ◆ Updating the supply resources
 - Vancouver Island Supply
 - Heritage Contract
 - Burrard MLA Review
 - Project Attrition
 - Other Resource Uncertainty



- ## Next Steps
- ◆ We plan to file part of the 2004 IEP with the BCUC in December 2003:
 - Electricity Planning Introduction and Objectives
 - Demand Supply Outlook
 - Resource Options
 - Draft Action Plan
 - ◆ Balance of 2004 IEP will be completed in winter and spring 2004:
 - Portfolio Analyses
 - First Nations and Stakeholder Engagement
 - Long Term Outlook , Medium Term Direction, & Short Term Action Plan



- ### Stakeholder Engagement for the 2004 IEP - Goal
- ◆ To inform and obtain feedback from interested parties about the 2004 IEP
 - ◆ Purpose: to allay concerns, foster openness and trust between BC Hydro and interested parties
 - BC Hydro will proactively provide clear, factual information to key opinion leaders, the general public and employees about:
 - November 2002 provincial Energy Plan
 - BC Hydro's resource acquisition strategy
 - Resource Options, "illustrative" portfolios, Action Plan
 - Other considerations such as reliability, low cost, private development & 50% clean target
 - BC Hydro will encourage and document feedback from interested parties
 - feedback will be considered during the development of the 2004 IEP
 - BC Hydro, under the direction of the 2002 Energy Plan, will make decisions on the 2004 IEP
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Outcome of 2004 IEP

- ◆ IEP completed
 - interested party feedback considered & documented
 - interested party concern & expectation managed
 - public & interested parties more knowledgeable about resource options, BC Hydro IEP
 - elected officials well-informed and provided with consistent, accurate & timely information (no election issue)
 - 2004 IEP report will be written in sections to accommodate Revenue Requirements timing

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Presentation No. 2

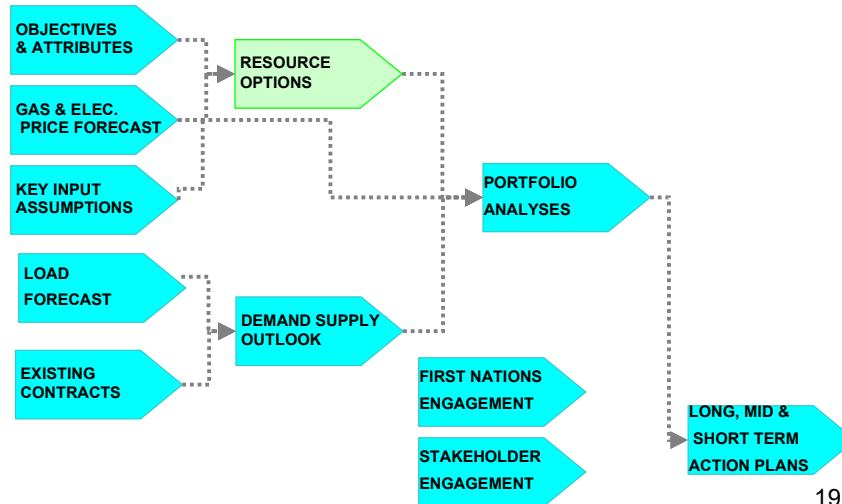


2004 Integrated Electricity Plan
Resource Options
Andrea Estergaard

BC Hydro Distribution LOB

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2004 Integrated Electricity Plan – Process Chart



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Objectives for this Session

- ◆ Information Sharing
- ◆ Discussion and Comments
 - ◆ Invite Questions on the Inventory & Methods
 - ◆ Break into work groups to discuss results.

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Resource Option Categories

- ◆ Demand-Side Management
- ◆ Supply Side Options
 - Clean & Alternative
 - Thermal
 - Large Hydro
 - Resource Smart
 - Imports

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Resource Options

- ◆ Demand Side Management:
 - Power Smart Programs
 - Demand-side Capacity Programs



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Resource Options

- ◆ Resource Smart (Upgrades to existing resources)

- ◆ Alternative and Clean Energy
 - Small & Micro Hydro (run of river, up to 50MW)
 - Biomass (Woodwaste, Municipal Solid Waste, Biogas)
 - Wind,
 - Geothermal,
 - Solar (Building Integrated Photovoltaic),
 - Tidal,
 - Wave,
 - Fuel Cells.

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Resource Options

- ◆ Large Hydro (greater than 50 MW)
 - New Large Hydro
 - Pumped Storage

- ◆ Thermal Generation
 - Coal
 - Natural Gas
 - Oil
 - Diesel

- ◆ Imports
 - Market purchases
 - Downstream Benefits

- ◆ Transmission Options
 - New lines
 - Distribution Automation
 - Stations

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Attributes

- ◆ Financial
 - Project costs, unit energy cost estimates
- ◆ Technical
 - Capacity and Energy production
- ◆ Environmental & Social
 - Emissions, footprint, employment, private sector involvement
- ◆ Uncertainty
 - Price and Development

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Energy Resources Identified

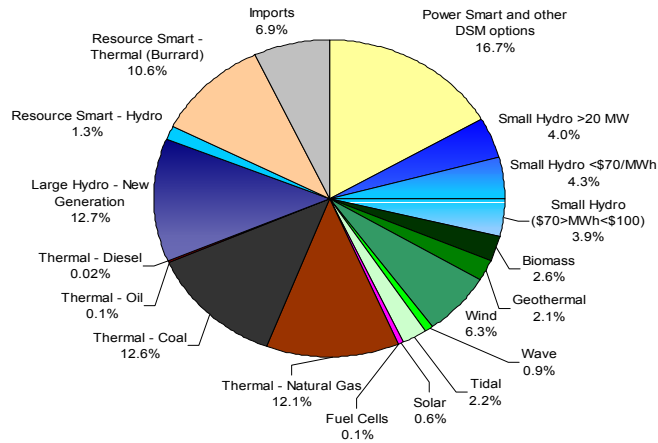
Resource Type	Annual Average Energy (GWh)	Unit Energy Cost (\$/MWh)
Power Smart (2 – 5) and other DSM options	11,300	44 – 60
Small Hydro (>20 MW)	2,730	55 – 91
Small Hydro (< 20 MW, < \$70/MWh)	2,930	30 – 70
Small Hydro (< 20 MW, \$70 to \$100/MWh)	2,600	71 – 100
Biomass	1,800	56 – 190
Geothermal	1,400	67 – 97
Wind	4,300	74 – 140 ³
Wave	630	100 to 130
Tidal	1,500	150 to 360
Solar ⁴	400	700 to 1,700
Fuel Cells	50	n/a
Thermal – Natural Gas > 59 MW	8,200	54 – 85
Thermal – Coal	8,500	55 – 60
Thermal – Oil	70	130
Thermal – Diesel Internal Combustion Engine	12	180
Large Hydro	8,600	50 -110
Resource Smart – Hydroelectric	900	n/a
Resource Smart – Thermal (Burrard) ⁵	7,200	n/a
Imports	4,700	40 - 65
Reference: BC Hydro Customer Based Generation Call 2002		\$55

Refer to Table Notes in Report

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Energy Resources Identified

Energy Resources Identified (% GWh/year)



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Capacity of Resources Identified

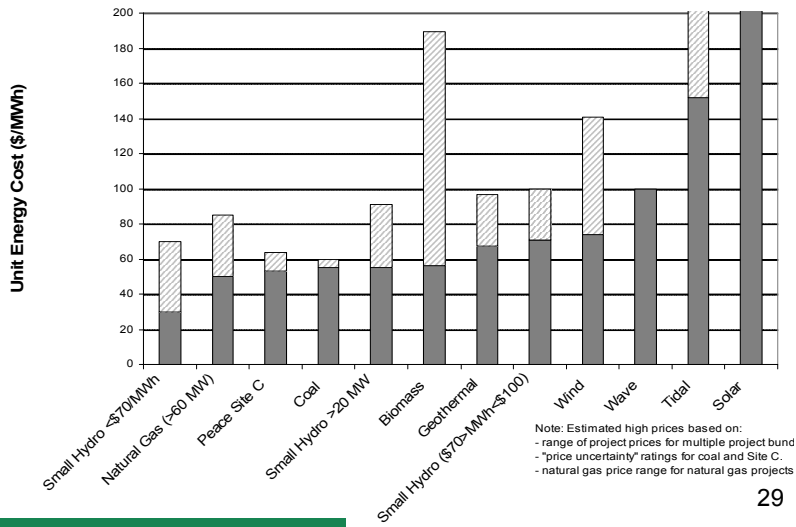
Dependable
Capacity Identified,
Supply Curve

Resource Type	Installed Capacity (MW)	Installed Capacity Capital Cost (1,000 \$/MW)	Dependable Capacity (MW)	Dependable Capacity Capital Cost (1,000 \$/MW)
Power Smart and other DSM options	Not Calculated	-	1,655	180 – 1,100
Small Hydro (>20-MW)	750	1,500 – 2,900	10	15,000 – 32,000
Small Hydro (<20 MW, <\$70/MWh)	630	1,100 – 2,200	86	3,400 +
Small Hydro (<20MW, \$70 to \$100/MWh)	610	2,200 – 2,600	89	4,600 +
Biomass	220	1,500 – 6,300	220	1,500 – 6,300
Geothermal	185	3,000 – 4,200	185	3,000 – 4,200
Wind	1,450	1,900 – 2,700	0	-
Wave	200	700 – 800	10	14,000 – 16,000
Tidal	840	1,400 – 3,400	42	28,000 – 66,000
Solar	440	3,000 – 11,000	0	-
Fuel Cell	6	880 – 3,500	6	-
Thermal - Natural Gas	1,400	440 – 1,800	1,400	500 – 2,000
Thermal - Coal	1,300	1,100 – 1,700	1,200	1,200 – 2,000
Thermal - Oil	42	1,000	41	1,000
Thermal - Diesel	7	360	6.7	370
Large Hydro - New Generation	1,650	2,500 – 4,700	1,650	2,500 – 4,700
Large Hydro - Pumped Storage	500	1,200	500	1,200
Resource Smart - Hydro	2,000	240 – 4,700	1,800	280 – 4,700
Resource Smart - Thermal	900	700 - 800	870	700 - 800
Imports	1,400	-	1,400	-

Refer to report notes for details.

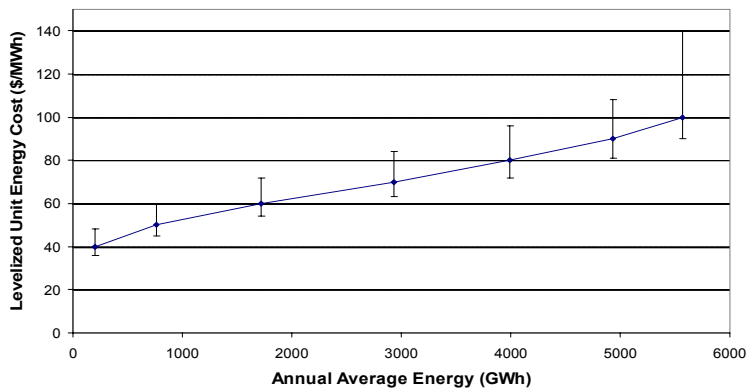
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Unit Energy Cost Comparison



Small Hydro Supply Curve

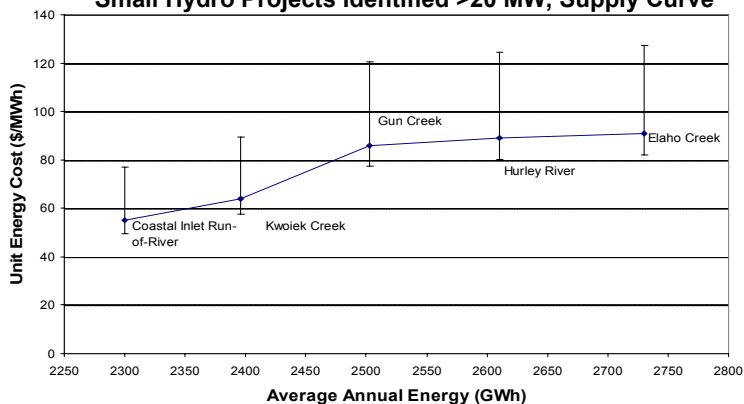
Small Hydro Projects Identified, Supply Curve



Note: Cost range bands are displayed in the supply curves based on the price uncertainty ratings, and reflect uncertainty in the technical assumptions used to make cost estimates. Price uncertainty does not include uncertainty in market or fuel prices. Additional description of these price uncertainty ratings can be found in Appendix A.

Small Hydro Supply Curve

Small Hydro Projects Identified >20 MW, Supply Curve

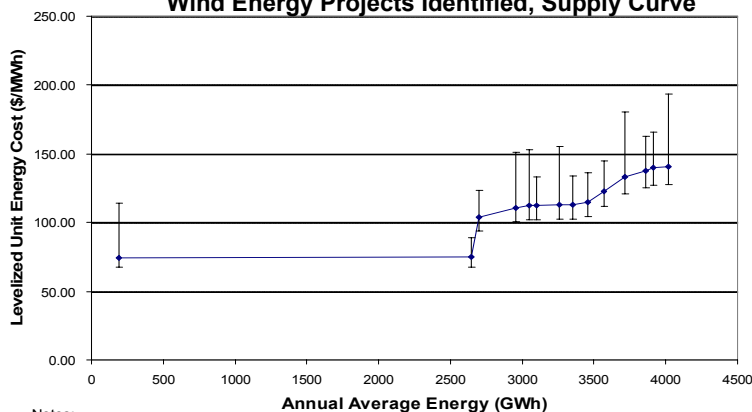


Note: Cost range bands are displayed in the supply curves based on the price uncertainty ratings, and reflect uncertainty in the technical assumptions used to make cost estimates. Price uncertainty does not include uncertainty in market or fuel prices. Additional description of these price uncertainty ratings can be found in Appendix A.

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Wind Energy Supply Curve

Wind Energy Projects Identified, Supply Curve



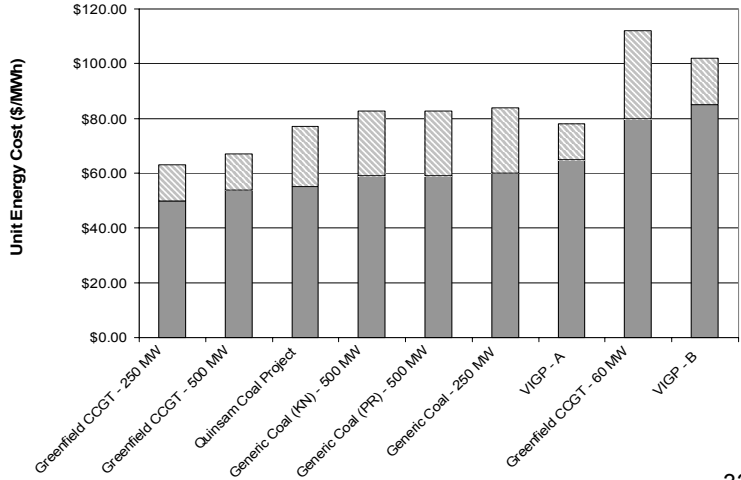
Notes:

1. Based on identified projects. The extent of resource is far greater, but at unknown cost.
2. Cost range bands are displayed in the supply curves based on the price uncertainty ratings, and reflect uncertainty in the technical assumptions used to make cost estimates. Price uncertainty does not include uncertainty in market or fuel prices. Additional description of these price uncertainty ratings can be found in Appendix A.

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Thermal Projects - Unit Energy Cost Comparison

Thermal Projects Identified, Unit Energy Cost Comparison



Database Sample Page

- ◆ Discuss Handout

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Break-Out Group Objectives

- ◆ Discuss the projects and programs included (inventory)
 - Identify opportunities for expansion
- ◆ Discuss the attributes for projects and programs
 - Ideas for improvement or enhancement
- ◆ Summarize group findings and any recommendations
- ◆ Report back.

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Principles to Remember

- ◆ Resource Options and Attributes Must Be:
 - Transparent, reviewable and feasible.
 - Meaningful and add value to the planning context.
 - Based on best available information.

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Break-Out Groups

- ◆ Group 1: Clean & Alternative - Small Hydro
- ◆ Group 2: Clean & Alternative - Wind
- ◆ Group 3: Large Hydro and Thermal
- ◆ Group 4: Clean & Alternative: (Biomass, Geo-therm etc.)
- ◆ Group 5: Clean & Alternative - Small Hydro

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BC Hydro
2004 Integrated Electricity Plan
Information Session for Independent Power Producers

December 9, 2003, 1:30 to 4:30 p.m.
Vancouver, BC

1. Introduction and Welcome

Mary Hemmingsen, Manager, Power Planning and Portfolio Management, BC Hydro

- Mary Hemmingsen welcomed the 55 participants to the information session, and said that it is part of a stakeholder and First Nations engagement process to request input for BC Hydro's Integrated Electricity Plan (IEP). It is an opportunity to share key assumptions, which are drafts at this point. BC Hydro wants stakeholders' perspectives to help finalize the IEP. This forum is one of several, and it focuses primarily on getting input on resource options. There will be further opportunities, and participants can provide comments by telephone, email, in person, or at subsequent information sessions in January and February 2004.
- Ms. Hemmingsen noted that while BC Hydro values the perspectives of participants, the company cannot guarantee that all comments will be incorporated, as decisions on the 2004 Integrated Electricity Plan are the responsibility of BC Hydro management, acting within the policies defined by the B.C. Energy Plan and other directives.
- Ms. Hemmingsen also noted that there are other forums to discuss the Vancouver Island Call for Tenders and this forum was not designed for discussion of that subject.

2. Overview of the 2004 IEP

Ron Monk, Manager of Energy Planning and Project Manager for the 2004 IEP, BC Hydro

- Ron said that, after discussions with IPPBC executive members, it was decided to focus this session on resource options, as that is the members' greatest interest at present. The resource options are in draft form now, so this is a good time to provide input. If members have other needs, please let us know so we can plan future meetings. Ron's presentation included the following:
- The IEP is a long-term plan on how BC Hydro will meet its customers' demand for electricity, comprised of a 20-year outlook (with provisions for uncertainty), a medium-term (10-year) direction and short-term (four-year) action plan, which has the most specific items. BC Hydro files the plan with the B.C. Utilities Commission, which has approval authority over large projects and regulatory authority over electricity rates. The BCUC has issued draft planning guidelines and BC Hydro plans to respond to the guidelines once they are finalized.
- BC Hydro's current acquisition strategy for 2002 to 2012 totals 10,000 GWh per year from Power Smart, Green and customer-based generation, independent power producer calls, Resource Smart and the Vancouver Island call for tenders.
- The demand-supply outlook for energy and capacity (which is available in BC Hydro's quarterly reports on-line), currently shows a system-wide need for new energy in 2013, including the effects of Power Smart and assuming that Burrard Thermal will be available.

- The process of developing the IEP involves modelling a number of inputs such as resource options, gas and electricity prices and economic factors, and a stakeholder and First Nations engagement process. The objectives of the plan are based on the B.C. Energy Plan of November 2002, formulated into more specific objectives related to the IEP. Parts of the IEP will be filed with the BCUC once the final resource planning guidelines are released. Summaries of Part 1 (Introduction and Planning Objectives) and Part 2 (Demand-Supply Outlook) of the IEP were circulated, and Part 3 (Resource Options) will be discussed later in the meeting. The Four-Year Action Plan is not yet public as it is to be filed as part of BC Hydro's Revenue Requirements Application. The balance of the IEP (portfolio analysis, stakeholder and First Nations engagement, and medium- and long-term outlook) is planned for completion by the end of March 2004.

3. 2004 IEP Resource Options

Andrea Estergaard, Senior Engineer, BC Hydro

Andrea said that BC Hydro has been collecting information about electricity resource options from many sources, and wants input from IPPs because they may have new information that available studies do not include, and they can give feedback on the existing information. The objective is two-way information sharing. Information on resource options included the following:

- Resource options include two categories: demand-side management programs such as BC Hydro's Power Smart, and supply-side options in five main categories: Clean and alternative; thermal; large hydro; Resource Smart (BC Hydro's generation efficiency program); and imports. Transmission options also have to be modelled as part of the system to get power from generation sources to customers.
- Alternative and clean energy includes small and micro hydro projects up to 50 MW (800 different projects have been included in the database), wind, geothermal, biomass, tidal current, wave and fuel cells.
- To evaluate resource options, BC Hydro has developed characteristics based on the objectives of the B.C. Energy Policy, such as:
 - Financial: unit energy costs, project cost, operating and maintenance cost;
 - Technical: capacity and energy produced, dependable and firm capacity;
 - Environmental and social: greenhouse gases, local air emissions, land use footprint, employment, private sector involvement;
 - Uncertainty: development uncertainty and price uncertainty depend on the amount and quality of information available, confidence in cost estimates, etc.
- Sample data on a range of electricity resource options include dependable and installed capacity; unit energy costs, energy supply curves, uncertainty bands. Complete data tables were provided for discussion in break-out groups.
- In response to queries, it was noted that:
 - Data are for future projects, so they do not include projects already contracted from previous calls. All costs are given in levelized 2003 dollars.
 - Co-generation projects are included in each of fuel categories.
 - For customer-based generation and Power Smart, the model uses total resource cost with breakdowns for specific cost categories, but does not go into ownership, although

ownership can affect project costing in a co-generation project if the value of steam to the host is calculated. BC Hydro will try to provide an estimate of the value of steam to the steam host in the project sheets for cogeneration projects.

- Transmission cost to the nearest transmission line is included in project cost, as well as transmission losses, as they increase the cost of distant projects. Credit is not given for projects near to load centres.
- Thermal costs do not include charges for greenhouse gas offsets or charges, which would probably move the cost of coal-fired electricity higher.
- The amount of electricity imports is identified as a resource option given the current understanding of electricity supplies in the Pacific Northwest U.S. and Alberta, with current restrictions on transmission interties. The figure used represents the electricity available to BC Hydro in the market, primarily the Canadian Entitlement to the Columbia River Treaty downstream benefits.
- Concerns were raised regarding the way fuel price risk is handled, and who is to assume the risk. In response, it was said that four different gas price scenarios are examined as well as a new scenario examining a disconnect between gas and electricity prices; the cost estimates for the gas-fired projects presented is based on an average of the four scenarios. BC Hydro ends up paying either directly or indirectly, because developers will factor in a premium to cover the risk if Hydro does not cover it directly. A price of \$55/MWh was established in recent calls for tenders, and the call was fully subscribed, which indicates that the market considers the price level reasonable. However, Hydro remains willing to talk about the risk in future calls for tenders.
- Concern was raised over the demand-supply outlook, which indicates that with Power Smart no new electricity supplies are needed until 2013. This brings into question the need for a call for tenders in 2004, and suggests there is little need for IPPs in the short term. In response, it was noted that there is uncertainty in load forecasting, including different high and low cost scenarios and changes in the economy, Hydro's ability to meet its Power Smart target, availability of Burrard Thermal and the cost of market electricity. The outlook is a projection of needs, but it may be more economic to buy electricity from producers within the province than to rely on options such as market purchases or Burrard.

Breakout Sessions

Participants divided into five breakout groups to discuss specific groups of resource options. They were asked to focus on two questions:

- Are there any major additions to the listings of resource options under each topic?
- Are the attributes used to characterize each resource option adequate? Can they be improved or enhanced?

The groups reported back as follows:

Wind Session

Facilitator: Charlotte Bemister, BC Hydro

Technical Resource and Presenter: Heather Matthews, BC Hydro

- Participants identified several projects that were not included in the resource database including:
 - A 1,500-MW proposal on northern Vancouver Island;

- Up to 2,000 MW of capacity in the Peace region, currently at data collection stage;
- 17 projects being considered by one IPP;
- a 450-MW project under environmental assessment in northern Vancouver Island;
- 700 to 4,000 MW of capacity in northwest Hecate Strait; and
- a 65-MW project in Holberg on northern Vancouver Island.

Participants agreed to provide information that could be included in the database.

- Participants raised concern about the use of land use footprint as an attribute, since with wind power the total amount of land might be extensive, but impacts might be limited to a small area; the land might continue to have use for agriculture or other productive uses; and the height of towers does not seem to be considered.
- Participants raised concerns that a limit of \$55 per megawatt-hour in BC Hydro's calls for tenders is difficult for wind-based producers and prevents Hydro from seeing wind as a viable source. In response, it was pointed out that the figure is based on natural gas price forecasts and the cost to build a hypothetical combined-cycle gas turbine located in the Vancouver load centre; location in a different region may result in different prices. Hydro will continue to look at a range of price forecasts in planning, but competitive electricity projects are available with that price cap as demonstrated by the 2002 Green Call.

Thermal/Large Hydro Session #1

Facilitator and Technical Resource: Andrea Estergaard, BC Hydro

Presenter: Rick Hopp, Maxim Power Corp.

- Participants discussed the projected need for new electricity sources if Burrard Thermal continues in service and the demand-supply outlook shows little need for new energy before 2012.
- The lowest-cost available capacity could be Site C on the Peace River, but cost evaluation has to include transmission costs, line losses, etc. Participants discussed distributed generation and said that projects near to the load centre should also receive a credit for distribution system savings. Participants suggested that to avoid expensive transmission studies, the BC Transmission Corporation should post a transmission credit schedule on a capacity map, so that developers can see where generation is competitive.
- Participants questioned the capital costs used in the database for thermal dependable capacity, and said the variance between gas and diesel costs does not look reasonable. Also, participants emphasized the need to recognize the value of peaking capacity and explain clearly how factors such as load dispatch are handled.

Thermal/Large Hydro Session #2

Facilitator and Technical Resource: Ron Monk, BC Hydro

Presenter: Ian Macdonald, Terasen

- Participants said that natural gas price was the main issue, and that high gas prices would move customers to choose electricity over gas as a source of energy. They wanted to know the analysis used to come to prices and forecasts, and suggested that AECO could be a better index. They also discussed the impact of higher gas prices, and wanted to know if a move to higher electricity demand due to higher gas prices had been considered. They raised concerns about carrying the gas price risk in power projects, and said putting the full risk on the developer would kill the projects. They said that cogeneration has not been

optimized due to risk issues. They also noted that fuel switching and the ability to use alternative fuels should be considered.

- Participants suggested that GVRD hydro projects should be in separate category, and that thermo-mechanical pulping could also be separate category that Power Smart could support as it is a very efficient technology.
- Participants confirmed the value of Burrard Thermal as a Heritage resource, and said there is a need to know when the results of MLA Technical Review of Burrard would be released.
- Participants said Site C should have been built a long time ago, and pumped storage should be considered.

Small Hydro Session #1

**Facilitator: Joanne McKenna, BC Hydro; Technical Resource: Niels Nielsen, BC Hydro
Presenter: David Kiess, Rockford Energy Corp.**

- Participants questioned the parameters of the 2000 Sigma study on small hydro sites, particularly regarding transmission issues, and said that more sites would be viable if BC Transmission provided access. It was said that “pioneers” have to bear the cost of transmission access, and they should receive compensation if other developers later build projects that use the same transmission facilities. It was suggested that ratepayers might absorb the cost of building transmission facilities.
- Participants said that in order to calculate costs in the resource option analysis, it is necessary to look at all the resources available. Developers need to know what assumptions are being made about projects, and it is not always clear how the numbers on the resource sheets have been arrived at. They said that if Hydro assumes there is enough capacity available to get to 2010 without new projects, it would kill the independent power producers industry.
- Participants questioned whether BC Hydro is involved in joint ventures through its customer-based generation program when it assists in financing projects.
- Participants noted that a zero value is shown on the resource sheets for social and environmental factors such as greenhouse gases, although these factors are used in overall resource evaluation.
- Participants said that greater coordination is needed in acquisition and licensing, as developers put in a lot of work but do not know if a call for tenders coming. They suggested a standing call so that developers would know that there is a program even if amount of the call is not known. In addition, the length of contract could be highly influential in evaluating project costs; at 20 years, a project might be marginal, but over a 25- or 30-year life, it could be more viable.

Small Hydro Session #2

**Facilitator: Lexa Hobenshield, BC Hydro
Technical Resource: John Croockewit, BC Hydro
Presenter: Joel Ronne, Sound Energy Inc.**

- Participants suggested some projects for capacity additions, including Hurley River and municipal water storage opportunities. They suggested BC Hydro review information from Land and Water B.C. water license applications to identify other possible additions.

- Participants suggested that evaluation attributes include the electrification of rural areas. They also noted that ability to finance and develop some projects is not addressed in evaluation – they may exist on paper, but not really be developable.
- Participants suggested that it would be beneficial if BC Hydro focused on demand rather than supply forecasts and suggested that Hydro issue a standing call including a forecast of the type of supply required. With that approach, developers would know the capacity and energy requirements, and would be free to identify the technology to fill the need; it would also give good market indicators, and let the market bring forward appropriate projects. Participants also said they would like a clearer idea of how much of the Power Smart projection has been filled and how much remains.

Wrap-up

- Ron Monk identified six key themes that had come up through the day:
 - Additional projects to be included in the resource database, particularly the small hydro and wind databases;
 - The gas price forecast for thermal projects and who takes the price risk;
 - The need for new electricity resources based on the current forecast, and concern about whether a 2004 call for tenders is needed and the impact on the IPP industry if no call is made;
 - A desire to see a standing call to provide more certainty to the industry, reduce the heavy workloads at call times and allow developers to submit their projects when they are ready;
 - Detailed discussion of attributes, such as the land impact of wind projects; and
 - Transparency of information.
- BC Hydro will take the input from participants, attempt to address concerns and incorporate ideas into the planning process.
- Ron thanked participants and asked them to fill in the feedback forms to help design future sessions and incorporate any comments that have not yet come out.
- Regional workshops will take place in January and February in the Lower Mainland, Vancouver Island, the North, the Southern Interior and the Kootenays. Further sessions can be arranged for IPPs if needed to discuss specific issues. However, the restricted timeline and the need to coordinate the IEP process with the Revenue Requirements Application before the B.C. Utilities Commission impose some limitations.

<p>If participants have additional questions or comments, please contact Lexa Hobenshield at Lexa.hobenshield@bchydro.com</p>

2004 Integrated Electricity Plan

Feedback Form

Thank you for attending today's information session about BC Hydro's 2004 Integrated Electricity Plan. Your feedback is important to us. Please take a few moments to provide us with your thoughts about the session.

1. Did the information session meet your expectations?

Yes

No ⇒ Why not?

2. Please indicate how informing you found the presentation material to be around each of the specific components of the 2004 IEP.

a) Electricity Planning Introduction and Objectives

Very
informing

Somewhat
informing

Not too
informing

Not at all
informing

Don't
know

b) Demand-Supply Outlook

Very
informing

Somewhat
informing

Not too
informing

Not at all
informing

Don't
know

c) Resource Options

Very
informing

Somewhat
informing

Not too
informing

Not at all
informing

Don't
know

d) Interim Action Plan

Very
informing

Somewhat
informing

Not too
informing

Not at all
informing

Don't
know

e) Stakeholder and First Nations Engagement

Very informing

Somewhat informing

Not too informing

Not at all informing

Don't know

f) Action Plan

Very informing

Somewhat informing

Not too informing

Not at all informing

Don't know

3a. Overall, how informing was the presentation material on the 2004 IEP.

Very informing

Somewhat informing

Not too informing

Not at all informing

Don't know

3b. Why do you rate it that way?

4. Do you have any comments or feedback about the 2004 IEP?

5. Would you like an IEP team member to follow up with you to address your comments? If so, please provide your email address or telephone number.

6. Would you like to be placed on an e-mail list to receive information about the 2004 IEP? If so, please provide your e-mail address.

NOTE: decisions about the 2004 Integrated Electricity are the responsibility of BC Hydro management acting within the context of the government's Energy Policy and other directives. Your feedback is important to us and will be considered and incorporated – where feasible – into the 2004 IEP. Feedback received will be documented.

2004 Integrated Electricity Plan – IPP Information Session
Vancouver, December 9, 2004
Feedback Form Response Compilation

1. Did the information session meet your expectations?

Yes (21)

- Good start. Look forward to follow up based on input provided.
- Lots of info.
- Break-out needed more time.
- To add the break-out group did not address concerns of being treated like everyone else in terms of 5.5 cents/kw or \$55/MW. Was in wind group.
- Well organized & presented, but somewhat rushed with some dialogue cut off.

No's (8)

- More time needed. A complex topic. Pre-reading material circulation would have been helpful.
- Discuss the format of the final IEP product in more detail.
- Should clearly define demand side requirements then market can respond with supply.
- Not enough info on what the IEP really is.
- How much energy is needed from IPPs?
- Hydro appear to be asking "what can IPP's do" xxxx is asking "what do you want us to do" – need more clarity around firm demand.
- I found the session very rushed and somewhat lacking in guidance. We could have been better prepped beforehand. I am a tough customer! Presentations were helpful.
- More detail required, but thanks for the opportunity.

3b. Overall, how informing was the presentation material on the 2004 IEP. Why do you rate it that way?

Very informing.

- Excellent idea on breakout sessions.
- From what was discussed.
- Lot of info to present in a short time frame. Commend BC Hydro on involving public at this stage – keep it up.

Somewhat informing.

- Would be useful to know where one could see the detail behind the "high-level" presentation.
- Good overview – still a lot of questions regarding how database will be used vis-avis transmission live options. No information on future acquisitions/calls.
- IPPs need more certainty. Currently the plan and projections indicate that no new energy is needed from IPPs until 2012. What is happening with Burrard Thermal? Does Kyoto come into the evaluation? (i.e. GHG credits, green credits, etc.)
- Didn't get a feel for what the IEP process would produce.
- This is an introduction to the IEP for me. We need time to look through the info and specifically details of the projects used in developing the cost forecast for the project types listed.
- Needed to be able to review data base of supply options.
- Good introduction to some of the thought process and analysis.
- Not at all informing. Don't know if it is registered.

- Too many unknowns to put together a firm business plan.
- Questions generated were comprehensive.
- Gave a general outlook – not too specific.
- I think the input section was the most important but the energy needs and alternate sources is valuable information.
- Not enough time to deal with more of the issues.
- There was not enough time allocated for all the subjects.
- This is a complicated and in-depth process that is difficult to understand in one day with only an overview of the processes. BC Hydro should make available the calculations used to reach various charts & graphs (attributes)
- Just learning power so not great expectations but a good introduction for me.

Not too informing.

- Too much material to digest. Needed more time for discussion.

4. Do you have any comments or feedback about the 2004 IEP?

- More information would be helpful on methodology used to arrive at xxxx unit cost of energy. Is the spreadsheet available?
- Discussaround programs like xxxx/Power Smart. Differentiate between “goals” and “expectations” regarding the output of these programs.
- Increase amount for small hydro.
- Need to make the projects (on which cost estimates are based) public so we can analyze the assumptions.
- Provide more detail on the different options much as xxxx and bare load generation.
- Make the data base available asap for feedback.
- Required to understand evaluation and planning process.
- May have feedback on assumptions.
- When and how much? The sooner we know the better.
- You can't develop a reliable “list” of projects to fill demand in a competitive market! Better to provide clear definition of need for capacity and let the developers bid to clear criteria. Further – bid process is lumpy (strains LWBC, DFO, consultants, BCH, etc.) Better to provide standing offer for IPP's – will save everybody time and money & provide certainty!
- Open door green call
- No price ceiling \$55
- When it is officially available I would like a xxxxcopy to study the available business opportunities.
- Longer breakout sessions – 2 and then a break.
- Gave a general outlook – not too specific.
- Need to address natural gas price risks more thoroughly and who should take/share it.
- What will be done with Burrard?
- Verification of cost data.
- Verification of methodology.
- Consideration of real xx credits.
- Do you want comments re: Resource options?
- Presumably this session was a quick “fly-past”. Future sessions need to be longer & considerably more intense.
- BC Hydro simply does not take wind energy seriously. It's a perfect compliment to a hydro powered utility. Will the 2004 IEP consider green credits and/or GHG emissions?
- How can transmission upgrades be accelerated?
- More xxxx would help – perhaps focus on one of the most important issues – how BCH calculates costs for specific resource options.

5. **Would you like an IEP team member to follow up with you to address your comments? If so, please provide your email address or telephone number.**

CONTACT INFORMATION REMOVED

6. **Would you like to be placed on an email list to receive information about the 2004 IEP? If so, please provide your email address.**

CONTACT INFORMATION REMOVED