2004 Integrated Electricity Plan

Mark Jaccard, SFU

27 November 2003

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

Objectives for Today

- Provide information on the development of the 2004 Integrated Electricity Plan
- Obtain input to the Plan
- Discuss how Mark can be involved in commenting on the Plan

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

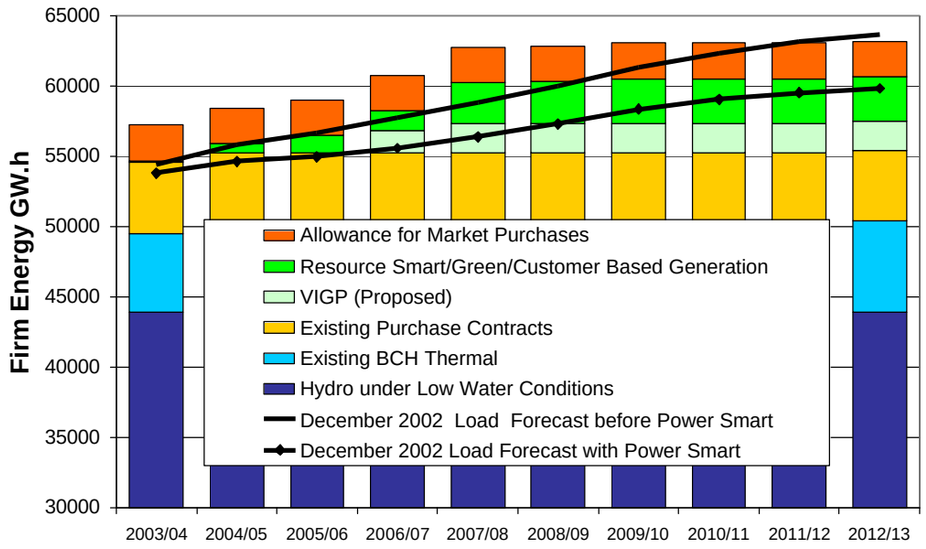
British Columbia Utilities Commission

- 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.

BC Hydro's Existing Plan

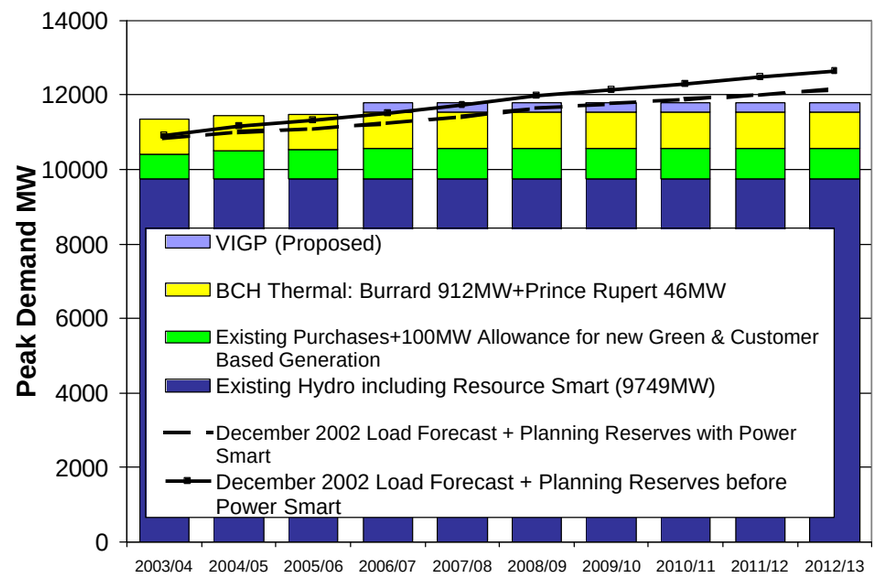
- Resource Acquisition Strategy for 2002-2012. Total by year 2012:
  - Power Smart: 3,500 GWh/year
  - Green & Customer Generation and future Independent Power Producer calls 3,300 GWh/year
  - Vancouver Island: 2,100 GWh/year
  - Resource Smart: 1,100 GWh/year
  - **Total** **10,000 GWh/year**

Demand Supply Outlook: Energy (at June 30, 2003)



Note: VIGP Application denied by the BC Utilities Commission on September 8, 2003

Demand Supply Outlook: Capacity (at June 30, 2003)



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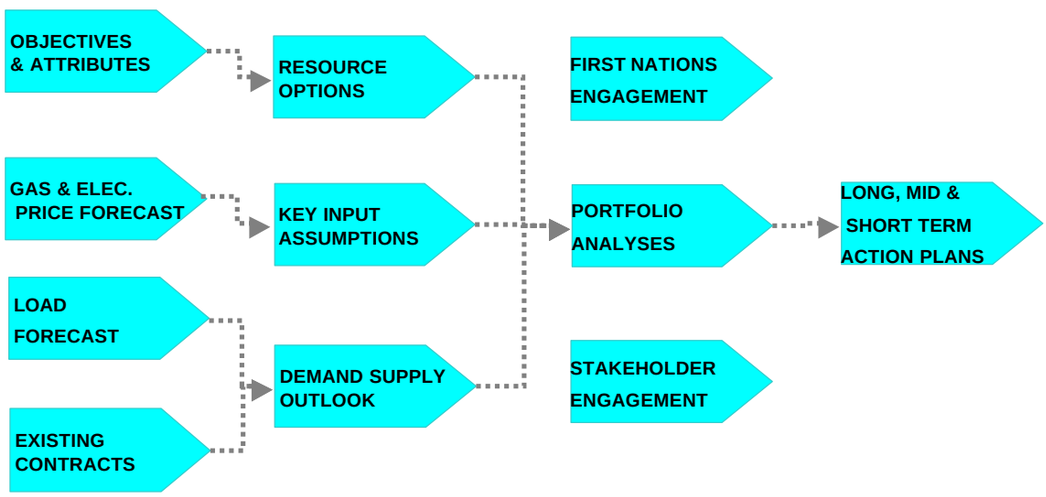
2004 Integrated Electricity Plan – Process Chart



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.

Demand Supply Outlook

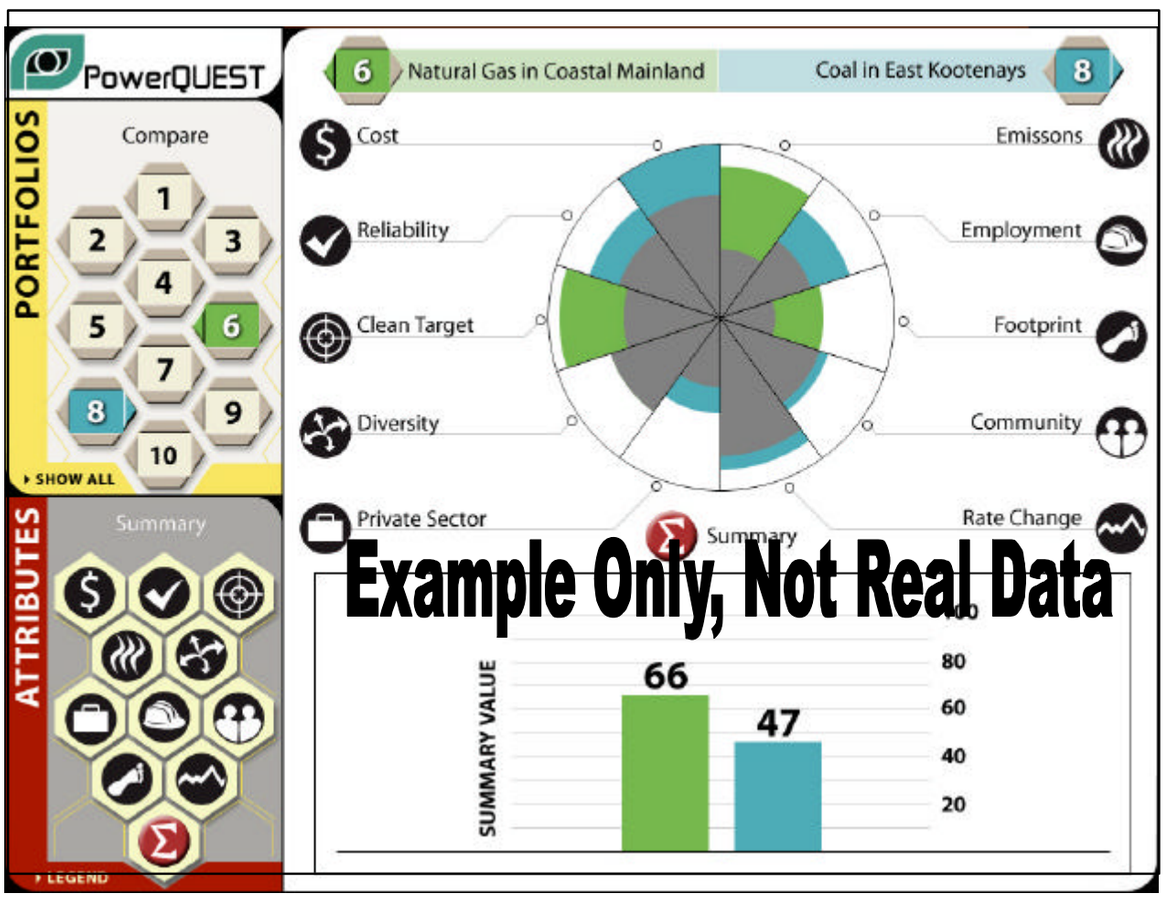
- Electric load forecast updated
- Updating the supply resources
  - Vancouver Island Supply
  - Heritage Contract
  - Burrard MLA Review
  - Project Attrition
  - Other Resource Uncertainty

Resource Options

- Demand Side Management:
  - Power Smart Programs
  - Rates
- 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)
  - Fuel Cells
  - Geothermal
  - Solar (Building Integrated Photovoltaic)
  - Tidal
  - Wave
  - Wind

Resource Options

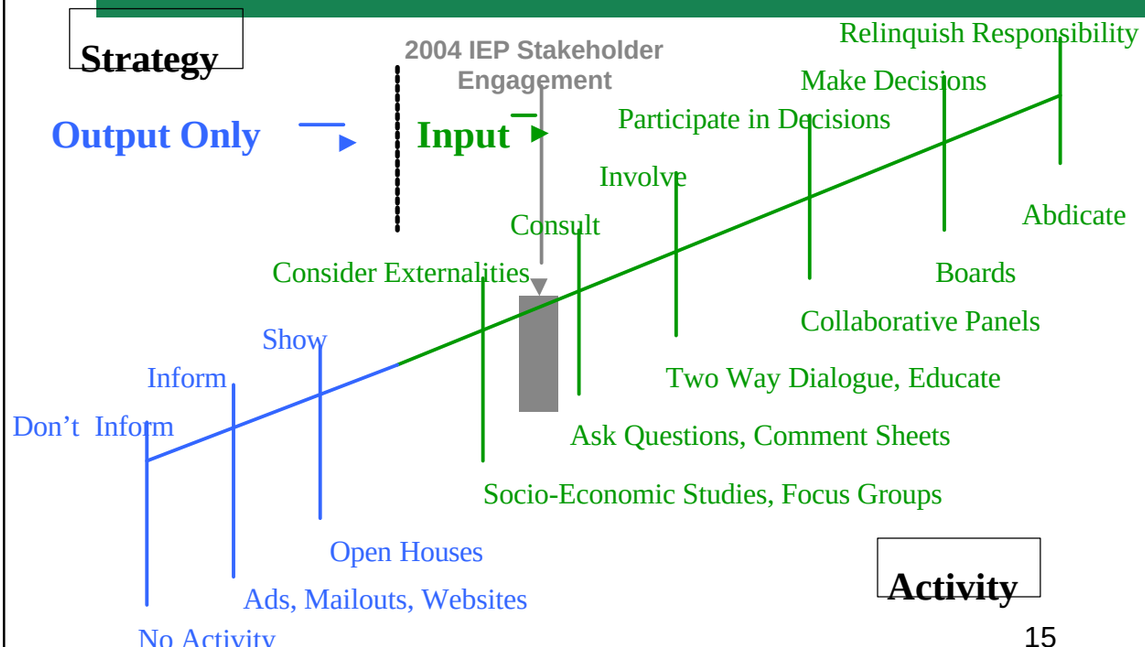
- Large Hydro (greater than 50 MW)
  - New Large Hydro
  - Pumped Storage
- Thermal Generation
  - Coal
  - Oil
  - Natural Gas
- Imports/Trade
- Transmission Options
  - New lines
  - Distribution Automation
  - Stations



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
  - Interim 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

The Public Involvement Continuum



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

Stakeholder & First Nations Engagement Strategy

- July 2003 - Focus group qualitative research complete
- July 2003 - Rocky Mountain Institute Workshop complete
- Fall 2003 - existing opportunities to provide information
  - Oct 8 First Nations Committee Water Use Planning meeting
  - Oct 22 - initiated employee input to Plan
  - Oct 23-25 - information at IPPBC conference
  - Oct 30 - meet with IPPBC representative
  - Nov - website launch
  - ongoing - identify opportunities to provide information on the 2004 IEP
- Winter 2004
  - regional information sessions
  - presentations at existing committees and speaking opportunities
  - IEP complete - report to be completed in stages

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

Key Questions

- How do you want to be engaged on the 2004 IEP? Best ways to do this given the constraints.

Meeting with Mark Jaccard, Simon Fraser University
Mary Hemmingsen's Office, Dunsmuir 10
November 27, 2003

Attendees:

- Mary Hemmingsen — BC Hydro, Power Planning and Portfolio Management
- Lexa Hobenshield — BC Hydro, IEP Stakeholder Engagement
- Mark Jaccard — Simon Fraser University
- Ron Monk — BC Hydro, IEP Project Manager
- Ken Tiedeman — BC Hydro, Load Forecast

Discussion highlights:

Mary reviewed BC Hydro's justification for the current IEP stakeholder engagement direction:

- Since the 1995 IEP, the market dynamics have changed - IPPs are an important part of future electricity supply and BC Hydro is no longer 'building' new generation.
- The role of the regulator is stronger – this has been facilitated by the provincial government's BC Utilities Commission Act changes.
- With increased filings to the BCUC, stakeholders have more forums and more opportunities to be heard.
- The provincial government, has set energy policy with the issue of the BC Energy Plan.
- Resource planning is an ongoing task – we intend to engage stakeholders on an ongoing basis, so there will be opportunities for stakeholders to be engaged in an IEP in the future.
- We have a time constraint – the Revenue Requirements process is occurring now without a resource plan in place. We need to complete an IEP to get things in the right order.

Ron reviewed the presentation with Mark.

Mark's recommendations/input for consideration:

- The IEP Team should be doing a collaborative (e.g. consultative committee) stakeholder engagement process. He suggested some key stakeholders to participate in this exercise**.** Mark believes they would reach consensus.
- Legally, the energy policy has no authority over BCUC review of BC Hydro. If the government wants BC Hydro to comply with its energy policy it must direct BC Hydro through legislation (Orders in Council).
- The West Kootenay Power IRP as a very good example of an IRP. They considered social, economic and environmental considerations. This IRP was led by Robert Hobbs (now the Chair of the BCUC).
- Present only three or four attributes to stakeholders. Mark's decision analysis research indicates that this is important to prevent stakeholder 'information overload'. He suggests cost, environmental and risk. Further, the BCUC has the jurisdiction to

consider financial attributes – so he suggested attaching a ‘dollar’ figure to environmental risk.

- Present only two portfolios in the PowerQUEST model for the same reason noted above.
- Request that M. Connors of MIT review PowerQUEST and provide advice on the tool.
- Determine preferred resources first from stakeholder input and then develop portfolios.
- If a consultative committee is not possible, consider polling.

Lexa indicated that BC Hydro’s research group recommended that for such a complex topic (electricity planning), it is difficult to provide enough information in a survey type situation to allow those polled to make an informed decision.

- Stakeholders could be overwhelmed by the complexities in the PowerQUEST tool.

Mary indicated that she believes that overall, BC Hydro is trying to achieve similar goals as Mark is suggesting.