

BC Hydro's Electricity Conservation & Efficiency Advisory Committee



2009 Annual Report

The Year in Review: A Message from the Advisory Committee

After two productive years building the essential foundation, 2009 – our third full year in operation – was the year we started to experience significant progress in our overall goal of generating constructive, effective and innovative ideas that will help inspire a comprehensive culture of conservation across British Columbia.

This past year, we continued to build upon the Strategic Framework we presented to BC Hydro, and BC Hydro adopted, in 2007/8, by providing BC Hydro with informal input and detailed formal recommendations for significantly expanding or improving its current conservation initiatives and programs at three levels:

- the individual level, by continuing to encourage all British Columbians to conserve both at home and at work
- the market level, by changing market parameters that influence consumer and business decisions on consuming energy and investing in energy efficiency projects, and
- the societal level, by working toward broad change in the way society as a whole views using energy, and helping to make energy conservation the “right” thing to do.

We are proud to report that BC Hydro has already begun to move forward on the majority of our recommendations.

In addition, we gave BC Hydro advice on a range of other critical topics, including how we think it is best to:

- revise the current Large General Service rate structure to encourage greater conservation while minimizing the impact of rate increases on business customers
- structure BC Hydro's incentives for large industrial customers, such as pulp and paper mills, sawmills, mines and chemical plants, to encourage the implementation of major energy-efficiency upgrades, and
- develop a Distributed Generation strategy that will help B.C. communities move towards the goal of being net-zero – capable of producing as much energy as they consume.

We also continued to identify and develop the best ideas for a stronger market for electricity conservation by encouraging private sector investment in energy-efficiency projects; for removing the barriers that are currently preventing developers and property owners from installing energy-saving measures; and for changing government policy to more actively support electricity conservation and efficiency.

We believe it is only once BC Hydro can effectively engage the people and businesses of British Columbia on all possible fronts that we will be able to meet the rising demand for electricity in this province and meet the targets contained in the 2007 BC Energy Plan. BC Hydro is not there yet, but it is getting closer. We are confident that our plans for 2010, outlined briefly in this report, will ensure it gets closer still.

Sincerely,

The Members of the Electricity Conservation and Efficiency Advisory Committee

A Message from the Acting President & CEO of BC Hydro

I would like to recognize and thank the members of the EC&E Advisory Committee for their time and commitment to improving BC Hydro's electricity conservation and efficiency initiatives for 2009. Over the last three years, the Committee has become an integral part of BC Hydro's electricity conservation strategy, moving BC Hydro towards achieving our goal.

The Committee's work and recommendations have assisted in building up the Power Smart programs and strategy, and there is a lot to be proud of. The combination of behavioural work through programs like Team Power Smart and Outreach; implementation of new rate structures; and programs which continue to show creativity as well as solid results – add up to a unique accomplishment in a world where our low rates make it hard to achieve a conservation culture.

Many of the Committee's recommendations have already been adopted, and there are several more sizeable changes that you are proposing to our strategy and planning that will take time to realize. You are adding tremendous value to our organization – I know this not only because of the many individual successes that you are responsible for, but also because the Committee's work has begun to permeate BC Hydro's conversations about DSM strategy and planning. People now ask - what does the Committee think?

I am sure the Committee is now more aware than ever that achieving BC Hydro's goal will require personal action and leadership from each one of us. Thank you again for your dedication and commitment to working with BC Hydro in helping us attain our electricity conservation and efficiency goal.

Sincerely,



Bev van Ruyven



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Our Purpose & Priorities

The EC&E Advisory Committee's purpose is:

To use our collective expertise and experience to help BC Hydro identify and remove the barriers – at the individual, market and societal levels – that may be preventing British Columbians from fully embracing electricity conservation and efficiency.

We do that by providing informal advice and formal recommendations to BC Hydro on how to:

- improve the design and delivery of current electricity conservation and efficiency programs and initiatives to encourage more BC Hydro customers to make a dramatic and permanent reduction in their electricity use
- develop new programs and initiatives that will successfully engage British Columbians across the province in electricity conservation and efficiency, and
- encourage the involvement of even more stakeholders in planning BC Hydro's programs and initiatives and how best to work with stakeholders in any future stakeholder engagement process.

Our eight priorities are:

- Changing market parameters to increase energy efficiency
- Encouraging change at the societal level
- Moving to net-zero communities
- Improving demand-side management planning
- Removing the split incentive barrier
- Encouraging greater electricity savings from the large industrial sector
- Enabling government policy
- Developing a long-term rate strategy

Why they are priorities:

Before consumers can install energy-efficient products and technologies in their homes and businesses, they must be both readily available and affordable. The best way to foster the **market** for energy efficiency is by encouraging the private sector to invest in and implement energy-efficiency projects.

We've seen it with smoking, with drinking and driving and with recycling: **society** as a whole can change its attitudes and modify its behaviour. We believe BC Hydro can and should support a similar

Our History

BC Hydro established the Electricity Conservation and Efficiency (EC&E) Advisory Committee in 2006 to help it develop new and more effective ways to address:

- a rapidly increasing demand for electricity in British Columbia, which will lead to a gap between what BC Hydro can supply through its own current generating facilities and what the people and businesses of British Columbia will soon require, and
- the goals set by the provincial government in its 2007 BC Energy Plan for BC Hydro to acquire at least 50 per cent and to pursue all cost-effective DSM of what it will need to meet future increased demand for electricity through electricity conservation and efficiency by 2020.

societal shift toward electricity conservation by not only encouraging individuals to rethink their needs and their actions – do I really need a home that big, for example, or that extra wine cooler in the kitchen? – but also by encouraging energy-efficiency as an essential component in all land-use, density and urban planning decisions.

A **net-zero** community is one that is capable of producing as much energy as it consumes over the year – really the ideal for all communities. But net-zero energy cannot happen in isolation: it requires a number of things, including distributed generation (energy generated close to the site where it will be used), and very high energy-efficiency in buildings and homes.

BC Hydro's **demand-side management** plan is essentially the corporation's roadmap for the activities it will undertake to encourage customers to conserve electricity and become more energy efficient. Demand-side management is critical for BC Hydro to achieve cost-effective electricity savings.

Rented or leased properties can be a Catch-22 for electricity conservation: in general, it's the landlords who bear the costs for installing energy-efficient products, but the tenants who benefit from the resulting energy savings. **Split incentives** and other methods are required to encourage both sides to pursue energy-saving measures.

The **large industrial** sector is heavily dependent on electricity and therefore could be assumed to be prime investors in energy-efficiency projects. However, many in the large industrial sector, particularly those in the forest industry, are facing uncertain or negative market conditions. We want to help BC Hydro find new and better ways to reduce the risk for large industry to invest in energy-efficiency projects and generate increased electricity savings.

Governments have a number of influential tools they can use – including policies, legislation and regulation – to define the options available to both consumers and businesses. With support from BC Hydro, we believe governments could dramatically influence greater electricity conservation and efficiency – for example, by establishing minimum energy-efficiency standards for new homes.

Certain **rate structures**, such as different rates at different times of day or stepped rates, have proved in other jurisdictions to encourage consumers to save energy. It is our goal to ensure that BC Hydro sets its rates at the right levels, so they lead to greater energy efficiency and conservation but do not unduly affect certain groups, such as low-income residential users or electricity-dependent industries.

Who We Are

The EC&E Advisory Committee provides a practical means for First Nations and a broad range of stakeholders from across the province both to be heard and to have a tangible impact on the electrical future of British Columbia.

Our 24 members include residential BC Hydro customers as well as representatives from:

- First Nations
- independent power companies
- business and industry
- utilities
- local, provincial and federal governments
- academics, and
- (non-government) environmental organizations.

Three BC Hydro staff members also participate on the Committee to provide insight into BC Hydro programs, plans and activities. Independent facilitator Dan Johnston, of Hope Johnston & Associates Law Corp, chairs the Committee, while a project management team from BC Hydro's Stakeholder Engagement department provides support.

Our Progress in 2009/Plans for 2010

Changing market parameters to increase energy efficiency

In 2008, at our request, BC Hydro commissioned Willis Energy Services and the Rocky Mountain Institute to assess:

- why the private sector in B.C. is not currently pursuing cost-effective energy-efficiency opportunities
- what market-based strategies and tactics are available to increase private-sector investment in energy efficiency, and
- how BC Hydro can implement these strategies and tactics.

In June 2009, Willis and RMI completed its report, called Opportunity Assessment of Strategies to Increase Private Sector Investment in Energy Efficiency.

After extensive review at our November 2009 meeting, we developed formal recommendations for BC Hydro advising the Corporation to adopt the report's recommendations for changing market parameters to promote and increase investment through such strategies as:

- Pay-As-You-Save®, where customers pay for energy-efficiency improvements with a portion of their electricity savings while occupying a home or building
- local improvement charges, a financing technique used by municipalities to fund improvements within a specific neighbourhood or community, where costs are recovered through property taxes, and
- development permit regulations that require developers to meet specific energy efficiency requirements before they can receive a municipal development permit.

However, in our opinion, the report's recommendations do not go far enough and therefore future work should include efforts to identify even more innovative mechanisms to build private-sector investment in energy efficiency.

Plans for 2010

Over the next year, we will:

- identify the market parameters – such as rights and responsibilities, prices and information – that influence consumer and business decisions and that can be changed to increase electricity conservation in addition to the list provided in the Willis/RMI report, and
- prepare further recommendations as required for BC Hydro on the tactics required to change these market parameters.

How We Work

In 2007, our first full year of operation, we established a number of small Working Groups to concentrate on specific areas of interest.

These Working Groups are responsible for reporting back to the larger Committee with their conclusions and recommendations; the full Committee then assesses and refines these recommendations before formally bringing them forward to BC Hydro.

The EC&E Advisory Committee typically meets four times a year, with two two-day meetings and two one-day meetings. The Working Groups meet once a month or as required.

Encouraging change at the societal level

Throughout the first half of 2009, we explored the questions raised in a discussion paper developed by our Strategic Framework Working Group in 2008. Called Pursuing Energy Conservation and Efficiency at the Societal Level, the paper asks four central questions:

- What are the societal norms and patterns that affect electricity use?
- How can we change the societal norms and patterns that affect electricity use?
- Who (what partners) can we involve to help us change these societal norms and patterns?
- What should BC Hydro do to influence these societal norms and patterns?

The paper also included four case studies examining how other jurisdictions have accomplished significant societal change: how Denmark implemented district power generation; how Canada changed public attitudes towards smoking; how Southeast Queensland decreased water use; and how the City of Vancouver moved successfully to urban densification.

In September 2009, we presented BC Hydro with a series of recommendations on the role we believe it can play in influencing societal change toward electricity conservation. We received the corporation's response to each recommendation in October 2009:

- **Recommendation 1:** BC Hydro should immediately take initial steps to develop a societal or community-level strategy. Societal and community level change will be critical to meeting BC Hydro's long-term conservation goals. While it is recognized that community or societal-level change will require a number of contributors over a long time frame, BC Hydro is uniquely positioned to play a significant role in exploring societal-level change.

Response: BC Hydro accepts the recommendation and has begun to develop a societal strategy.

- **Recommendation 2:** In taking initial steps to develop a societal or community-level strategy, BC Hydro should identify the most effective and appropriate role(s) it should play in catalyzing change at the societal or community-level. These include:
 - a. Advocate – working towards reforming regulatory framework and policies
 - b. Researcher, experimenter, inventor – discovering new findings both incremental and exploratory

Working Groups

- The **Rates Working Group** is studying how electricity rates can affect customer behaviour. The Group provides BC Hydro with recommendations about how it can use its rate structures to encourage more customers to pursue energy-saving opportunities.
- The **Strategic Framework Working Group** is working to refine and build upon the Strategic Framework submitted to BC Hydro in 2007. The Group provides BC Hydro with recommendations about how it can help make changes at the market and societal levels; how it can improve its Demand-Side Management Plan; and how it can encourage the development of net-zero communities.
- The **Split Incentives Working Group** is investigating the barriers to energy conservation and efficiency faced by developers, property owners and tenants. The Group provides BC Hydro with recommendations about how it can help remove those barriers by, for example, supporting tax incentives for developers and landlords and Green Leases for tenants.

continued...

- c. Innovator – bringing new ideas, processes and products to market
- d. Visionary – developing alternative scenarios in order to generate a dialogue around desired futures and the different paths that might take us there
- e. Communicator – sharing information in order to inform the debate around the change initiative
- f. Collaborator – developing networks with other key stakeholders and advocates.

While BC Hydro should explore, in some form, all of the potential roles listed above, highest priority should be placed on BC Hydro's role as a visionary, communicator, advocate and collaborator.

Response: BC Hydro will consider which roles it should play in the course of strategy development, and the roles recommended as high priority for BC Hydro will be prime considerations.

- **Recommendation 3:** In taking initial steps to develop a societal or community-level strategy, BC Hydro should concentrate on the following four actions:
 - **Action 1: Create a Provincial Energy Conservation and Efficiency Coalition**

BC Hydro should partner with others in the creation of a provincial energy conservation and efficiency coalition. A strong coalition of actors to advocate for change and provide alternatives to the status quo is a critical success factor in effecting societal change.

In contrast to the EC&E Advisory Committee, whose primary focus is on providing advice to BC Hydro, the coalition would have a mandate to pursue advocacy and action across society for the purpose of achieving transformative energy conservation and efficiency in B.C.

The EC&E Advisory Committee recognizes that the success of such a coalition will require active participation from a range of partners, including First Nations, all levels of government, non-governmental organizations, utilities, businesses and academics. However, BC Hydro is uniquely positioned to lead the formation of this coalition because of its extensive network, its resources and influence in energy conservation matters.

Furthermore, the Committee believes that without BC Hydro's support and leadership, the formation of such a coalition will not happen. Once a coalition is well

- **The Large Industrial DSM Working Group** (formerly the Reducing Risk for Industry and Business Working Group) is examining how risk affects the way large industrial customers and BC Hydro make decisions related to energy-efficiency projects. The Group provides BC Hydro with recommendations about how it can help reduce the risk of investing in energy-efficiency upgrades, and thus achieve further electricity savings.
- **The Government Policy Enablers Working Group** is studying how government policies, legislation and regulations can affect energy conservation and efficiency. The Group provides BC Hydro with recommendations for how it can encourage governments at all levels to provide greater support for electricity conservation and efficiency projects.

established, the need for BC Hydro to invest resources in societal and community-level strategies will likely diminish.

- **Action 2: Connect Energy Conservation to Climate Change**

BC Hydro should articulate why electricity and energy conservation in B.C. are critical elements of an overall solution to climate change. This connection to climate change will provide British Columbians with a decisive reason to act.

- **Action 3: Develop Scenarios to Show What Change Would Look Like**

BC Hydro should identify and develop alternative scenarios of societal or community-level change. The scenarios should depict what B.C.'s homes, workplaces and communities could look like if such changes, significantly reducing our energy use, were to unfold. In this way, these scenarios will provide an integrated picture of the potential impact of the changes in a range of norms and patterns that affect energy consumption.

BC Hydro has unique access to information regarding the potential impacts of societal change on electricity conservation and efficiency. Much of the Committee's past work, including the Conservation Potential Review – a study launched by BC Hydro in 2006 to develop a reliable estimate of the true potential for electricity conservation by 2026 – could be leveraged to develop these scenarios. The scenarios should depict societal change in different communities and geographies (e.g., large and small urban centres, rural areas, northern and southern areas of the province). These scenarios will be used to provide examples of a sustainable future to drive action.

- **Action 4: Communicate Scenarios**

BC Hydro should communicate these scenarios in a vivid and compelling manner to inspire action among British Columbians. BC Hydro should actively communicate the importance of embracing societal change in reducing energy use across the province.

Response: BC Hydro's new societal strategy will consider these four actions as priority tactics. The outcome of the strategy work will determine whether BC Hydro should move forward with these actions, and if so, what role BC Hydro will play.

- **Recommendation 4:** While BC Hydro would initially lead the efforts described in Actions 2 to 4 listed above, the objective

Electricity conservation refers to reducing the use of electricity, usually through changes in behaviour, such as remembering to shut off the lights or a computer monitor when they're not in use.

Electricity efficiency means using less energy to provide the same level of energy service. It is achieved most often through the use of more efficient technology – such as replacing incandescent light bulbs with compact fluorescents, or adding insulation to keep a home at a comfortable temperature with less heating or air conditioning.

described in Action 1 would be lead by the coalition. Eventually, all societal-level efforts will be lead by the coalition with BC Hydro as a key partner.

Response: BC Hydro will consider this recommendation as it develops its societal strategy.

- **Recommendation 5:** In undertaking the recommendations outlined above, BC Hydro should also concurrently investigate/identify:
 - the level of energy savings resulting from changes at the societal-level that could be attributed to BC Hydro activities (e.g., attribution)
 - the cost and benefits of a societal strategy as required for cost-effective analysis; and
 - how the energy savings from such a strategy would be measured and evaluated.

The EC&E Committee acknowledges there is uncertainty around attribution of societal-level change, as well as the evaluation and measurement of it.

While BC Hydro has a proven track record of delivering cost-effective demand-side management and high-quality evaluation and assessment, it is important that these uncertainties be proactively addressed. This should not preclude BC Hydro from taking the four actions outlined above. However, these uncertainties are important to keep in mind when identifying the appropriate level of future activities BC Hydro engages in regarding societal and community-level strategies.

Response: Agreed. Once a broad list of tactics and BC Hydro's role in societal-level change are identified through the strategy work, BC Hydro will begin to examine these issues.

- **Recommendation 6:** BC Hydro should provide the initial funding to activate and motivate the coalition described in Recommendation 3 - Action 1 above.

BC Hydro should collaborate with partners in the coalition to establish a plan for secure funding to sustain the coalition's on-going work. BC Hydro should also develop a budget and a detailed plan for pursuing these recommendations. Ultimately, the budget for BC Hydro on societal and community-level strategies needs to be consistent with and be comparable to the potential benefit that BC Hydro will receive from that work.

"It's time for BC Hydro to take the recommendations contained in the Strategic Framework – which the EC&E Advisory Committee researched and developed in 2007 and BC Hydro reviewed and accepted in 2008 – and make them happen. Change at this level is not easy. It requires significant investment of time, effort and money. But it is necessary if B.C. is to meet its sustainability goals. BC Hydro needs to change internally and become a catalyst for change across all sectors – government, industry, business – if we're to succeed."

EC&E Advisory Committee Member **John Robinson**, University of British Columbia, Institute for Resources Environment and Sustainability

Response: As an outcome of the strategy work, BC Hydro expects to develop a budget and work plan, taking into consideration the potential benefits of societal-level tactics.

Plans for 2010

In 2010, we will provide BC Hydro with our advice and ideas for refining and improving its societal strategy as it is developed, and urge BC Hydro to consider supporting societal-level changes through its demand-side management planning.

Moving to net-zero communities

In 2009, we continued to provide advice to BC Hydro on its Distributed Generation strategy, which examines the opportunities for distributed generation across fuel types, as well as on potential barriers and solutions, and on its Sustainable Communities Program, which offers a range of services to help local governments make smart choices about energy management and efficiency community-wide.

Plans for 2010

Over the next year, we will look at such questions as:

- What technical, economic and regulatory conditions are required to support net-zero development?
- What lessons can we learn from Sustainable Communities pilot projects, such as Dockside Green in Victoria?
- How can we involve the development industry in moving toward net-zero?

Improving demand-side management planning

At the Committee's request, BC Hydro commissioned Summit Blue Consulting, a well-known and experienced demand-side management consulting firm, in 2008 to review its current 20-Year Demand Side Management Plan.

In early 2009, Summit Blue presented its findings to the EC&E Committee. We then used their report as the basis for a series of recommendations that we presented to BC Hydro in August 2009, intended to help BC Hydro go even further in its demand-side management planning and achieve cost-effective electricity savings:

- **Recommendation 1:** BC Hydro should adopt the recommendations in Summit Blue's report on BC Hydro's 2008 DSM Plan – specifically:
 - a. The portfolio analysis should consider a broader range of DSM options.

"Over the last year we've been trying to shift from the theoretical to the tangible, to a more hands-on kind of thinking to help BC Hydro be more effective in pursuing energy efficiency and conservation. By achieving tangible successes in the short-term, we'll get Committee members, BC Hydro, and the public excited about the possibilities for energy conservation and motivated to explore and implement more ideas."

EC&E Advisory Committee Member **Matt Horne**, Pembina Institute for Appropriate Development



¹ BC Hydro's plan of resource development actions over the next 10 years that, when added to the existing base of resources, will meet its customers' electricity needs through the LTAP period.

Response: BC Hydro will consider expanding the number of DSM options to be analyzed in the next Long-Term Acquisition Plan (LTAP)¹. The number of DSM options is constrained by the practicalities of the LTAP analysis as increasing the number of options analyzed has a significant impact on the LTAP modeling effort.

- b. Continue to expand information technology as a key strategic element of the DSM Plan.

Response: BC Hydro agrees that information technology is an important element of the DSM Plan and will continue its efforts in this area.

- c. Expand the risk mitigation analysis effort in the DSM plan with a focus on actionable strategies.

Response: BC Hydro agrees that including examples of actionable strategies to mitigate risk in the DSM Plan's treatment of risk management is appropriate and worthwhile. BC Hydro plans to include such examples in the next DSM Plan.

- d. Future DSM plans should compile the diverse analyses in a single document that addresses planning assumptions and methods used.

Response: BC Hydro will consider compiling a consolidated document with all DSM-related content.

- **Recommendation 2:** Planning for the next DSM Plan should:

- a. Occur well in advance – i.e., it should start immediately.

Response: BC Hydro agrees that DSM planning should start well in advance of filing a LTAP. In light of the BCUC decision on the 2008 LTAP, BC Hydro is considering the content of the next LTAP, which will inform the nature and timing of DSM planning work for the next LTAP.

- b. Include stakeholder and partner input from the outset on scope, structure and the specific options to be considered/analyzed allowing sufficient time for the Committee to provide input into the DSM Plan.

Response: BC Hydro agrees that stakeholder and partner input is vital to its DSM Plan. BC Hydro plans to engage the EC&E Committee as a primary avenue to gather this input and will include the next DSM Plan on the agenda of future EC&E meetings.

"I believe BC Hydro is on the right track in engaging stakeholders and First Nations, and I believe we have made progress through the EC&E Advisory Committee. I am learning how BC Hydro and the Province of British Columbia define conservation – we must conserve the energy we have – and they are learning how the 203 First Nations of British Columbia view conservation as holistic and connected. If everyone, from governments to communities, conserves energy in the right way, we will have the time and opportunity to explore ways we can sustain both the environment and the energy supply. They also now better understand the rights and title BC First Nations hold to the land and resources, and that there must be both consultation and accommodation."

EC&E Advisory Committee
Member **Dan Smith**, First Nations Summit

- c. Take place in coordination with government energy-efficiency initiatives.

Response: BC Hydro agrees that DSM planning should coordinate with government energy efficiency initiatives and will endeavour to coordinate its DSM planning with government initiatives.

- **Recommendation 3:** The next DSM Plan should expand the number of DSM options considered – in particular, BC Hydro should:

- a. Analyze a range of options differentiated by the level of effort aimed at initiatives that operate at all three levels of the Strategic Framework (i.e., individual, market and societal).

Response: As noted above with respect to Recommendation 1(a), BC Hydro will consider expanding the number of DSM options to be analyzed in the next LTAP. The number of DSM options is constrained by the practicalities of LTAP analysis.

BC Hydro will strive to reflect different levels of effort at all three levels of the strategic framework in these options to the extent new DSM options are developed for the next DSM Plan.

- b. Include in the range of options analyzed at least one option that includes DSM initiatives up to the cost of new supply.

Response: BC Hydro will strive to include one or more options that incorporate DSM initiatives that cost almost as much as new supply to the extent new options are developed for the next DSM Plan.

- c. Analyze the prospect of fuel switching².

Response: The B.C. Utilities Commission decision on the 2008 LTAP directs BC Hydro to analyze the merits of fuel switching before the next LTAP. The inclusion of fuel switching in the DSM options will depend on the results of the fuel switching analysis and government policy.

- **Recommendation 4:** For the next DSM Plan, where practical, BC Hydro should integrate DSM options with load forecasting³ – this could take the form of analyzing a group of DSM options for each load forecast scenario (high, mid, low).

Response: BC Hydro will investigate further integration of DSM options and load forecast scenarios. As noted above, the

² From electric to gas heating, for example.

³ BC Hydro uses four major steps in forecasting how much load is expected on the system: the initialization of major inputs, including economic forecasts from the public and private sector; the development of a reference forecast for the energy needs for BC; the development of a most probable forecast; and a management review and approval of the probable forecast.

number of DSM options is constrained by the practicalities of LTAP analysis.

- **Recommendation 5:** The approach used to assess and mitigate the risk of DSM options should be comparable to the approach used to assess and mitigate the risk of supply side options including the following:

- a. When preparing the next DSM Plan, a distinction should be made between the level of risk associated with different options, the level of comfort associated with different levels of risk, and how different levels of risk are managed or mitigated.

Response: BC Hydro agrees that, in terms of assessing risk, both supply and DSM costs should be adjusted for risk in a similar manner. BC Hydro will consider a risk framework to establish comparable risk-adjusted costs for both supply and DSM options. With respect to risk-mitigation, as DSM and supply side risks are considerably different it may not be appropriate to use a comparable approach to mitigate both DSM and supply risks.

BC Hydro agrees that it is valuable to distinguish between the level of risk associated with DSM options, the level of comfort associated with different levels of risk and how different levels of risk are managed or mitigated. BC Hydro will strive to make this distinction in its DSM and resource planning going forward.

- b. Consideration should be given to increasing the level of DSM effort (vs. decreasing the amount of DSM relied upon) when identifying measures to mitigate demand-side risk.

Response: BC Hydro agrees that mitigation of DSM risk should consider both increasing the level of effort and decreasing the amount of savings relied upon.

- **Recommendation 6:** Opportunities to incorporate elements of adaptive management⁴ into the next DSM Plan should be explored.

Response: BC Hydro recognizes the value of adaptive management, being an approach to long-term planning that anticipates the availability of new information and that explicitly provides flexibility to react to that information, for DSM and will consider how to incorporate it in the next DSM Plan.

⁴ Adaptive management, also known as adaptive resource management, is a structured process to help decision makers arrive at optimal decisions in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring.



The **split incentive barrier** is created by the fact that:

- many commercial and residential tenants are required to pay their own energy costs, but because they do not own the property, they are often reluctant to invest in the property's energy efficiency
- while at the same time, developers and landlords are also reluctant to invest in energy efficiency, because they do not receive the benefits of reduced energy costs.

Plans for 2010

We will participate in a series of workshops with BC Hydro staff on key DSM planning topics in January through March 2010, with the intention of providing further advice to BC Hydro on its DSM planning in May 2010 – in time for this advice to be most useful in the DSM planning cycle.

Removing the split incentive barrier

Over the past year, the Split Incentives Working Group developed a series of six draft ideas to help remove the split incentive barrier:

1. Encourage governments to provide developers and landlords with tax incentives, such as:
 - at the local level, property tax rebates equivalent to the costs of energy-efficiency upgrades or adjustments to municipal property taxes so the assessed value of a property is independent of energy-efficiency upgrades
 - at the federal and provincial levels, tax credits tied to the cost of energy-efficiency upgrades, Capital Gains Tax exemptions for residential landlords, HST rebates for all energy-saving products, and property tax credits for commercial buildings that achieve energy efficiency certification, such as BOMA BEST or LEED.
2. Promote and support Green Leases – a lease that includes provisions to ensure landlords and tenants operate a property sustainably – in the commercial sector.
3. Target residential and commercial tenants during tenant turnover periods to encourage energy efficiency.
4. Research the potential energy savings to be gained by targeting secondary suites, either through BC Hydro's Residential End-Use Survey (which annually tracks usage patterns) or through partnership with the Union of British Columbia Municipalities.
5. Develop a pilot project to determine the potential energy savings from making the BC Hydro Energy Savings Kit, currently available for free to low-income customers, available to all ratepayers at no cost.
6. Work together with Terasen Gas and the Provincial Government to coordinate online information about offers and incentives available to landlords and tenants to create a "one-stop shop" website.

Plans for 2010

In 2010, Split Incentives Working Group will finalize the six ideas and present them as recommendations to the EC&E Advisory Committee as a whole in April 2010. After input from the rest of the Committee, we

"The challenge for the Split Incentives Working Group is to make sure the people who spend the money get the benefits – and it's just not the case right now. In the commercial sector, it's the building owners who put out the money to become more energy efficient, but it's the tenants who get the benefits of lower energy bills. We believe Green Leases are the way to go, because they bridge the difference: owners are able to recover the cost of their investments and modernize their buildings, while tenants still benefit from a more energy-efficient space. In today's market, we believe it's what the more sophisticated commercial tenants are looking for. They want sustainability and that includes energy conservation and efficiency."

EC&E Advisory Committee
Member **Len Horvath**,
Building Owners and Managers
Association of BC

will then prioritize the recommendations based on their potential impact on energy conservation and efficiency, and submit them to BC Hydro.

Encouraging greater electricity savings from the large industrial sector

In 2009, we shifted the focus of this priority area from small- and medium-sized business and industry to emphasize the large industrial sector, where we believe significant energy savings may be generated.

However, many members of the large industrial sector, particularly those in the forestry industry, currently face negative market conditions and significant economic uncertainty. All energy-efficiency projects carry some risk that they may not produce the anticipated energy savings. This economic uncertainty increases the risk of a project not delivering the expected results.

Over the past year, we investigated ways BC Hydro can help reduce the risk of investing in energy-efficiency upgrades, both for its large industrial customers and for itself, and thus achieve further electricity

savings, with a particular emphasis on:

- advising BC Hydro on the development of a new (in August 2009) program for large industrial customers that offers incentives for completing energy-efficiency projects, and
- determining how BC Hydro can best build upon Natural Resource Canada's Pulp and Paper Green Transformation Program, announced on June 17, 2009. Under this program, up to \$1 billion is available for capital projects offering demonstrable environmental benefits, such as energy efficiency and renewable energy production.

Plans for 2010

We will provide advice to BC Hydro on a new program for large industrial customers, scheduled for launch in 2010, that will offer better incentives to save energy, greater flexibility in eligible projects and improved risk management. We will also begin investigating the potential of initiatives that target specific industrial sub-sectors, such as mining or chemical plants.

Enabling government policy

In 2009, we continued to examine how BC Hydro can encourage all levels of government – local and First Nation, provincial and federal – to change existing policies, legislation or regulations to provide greater support for electricity conservation and efficiency projects.

"Catalyst is the largest consumer of BC Hydro electricity in the province, so it makes sense for me to sit on the EC&E Advisory Committee and provide the perspective of the large industrial power consumer. While we, the large industrials, are arguably the most cost-effective places to get the most energy savings, we're also very sensitive both to electricity rates and to the risk of investing in energy-efficiency projects. Through the committee, though, we're now starting to develop what I think are concrete strategies to deal with the spectrum of risk for large industrials, such as supporting a suite of projects at one facility or looking at one project at multiple facilities."

EC&E Advisory Committee
Member **Carlo Dal Monte**,
Catalyst Paper and the Joint
Industry Electricity Steering
Committee

However, we have decided to focus first on local government policy, because that is where we believe BC Hydro can have the most immediate impact, with an emphasis on four key questions:

- How can BC Hydro understand a specific local government's needs to customize its support and ability to influence that local government?
- How can BC Hydro help to build enduring political will so that governments and communities can engage in EC&E policies?
- How can BC Hydro leverage sustainability strategies (e.g., greenhouse gas emission reductions, local air quality, waste management, water) in working with government and communities?

How can BC Hydro programs and rates support the implementation of government policy?

Plans for 2010

Over the next year, we will:

- analyze the results of several pilot projects started by BC Hydro in 2009 (including, for example, a project in Oak Bay, Prince George and Salt Spring Island that is testing the effectiveness of home sellers using energy audit results as part of their listing strategy to attract buyers) and recommend select projects as case studies for how BC Hydro can support the implementation of government policy
- investigate potential barriers and opportunities for broader implementation of these ideas, and
- present our recommendations to the larger EC&E Advisory Committee in late 2010.

Developing a long-term rate strategy

Over the past year, we continued to provide BC Hydro with recommendations on the role of various rate types – including time-of-use, flat and stepped rates⁵ – in encouraging BC Hydro's residential, industrial and commercial customers to pursue energy-saving opportunities.

These recommendations included high-level “concepts” or “design considerations” that we would like to see BC Hydro consider in order to ensure that all future rate designs take electricity conservation and efficiency into account.

We also provided BC Hydro with our advice on possible changes to the Large General Service rate structure and how best to mitigate their impact. This advice, along with feedback from other stakeholders, helped the corporation determine the final form of the revised LGS

“One of the easiest ways to achieve positive change in a short period is through local government and this year, through the Government Policy Enablers Working Group, we've made great progress in identifying and narrowing down the best ideas for local action. Nothing's simple, though, because the capacity to make changes varies from community to community. What may be possible for a large, urban centre – such as being able to finance solar-assisted traffic lights – may not be practical for a smaller community. But the possibilities are definitely there.”

EC&E Advisory Committee Member **Noreen Guenther**, Councillor, District of Lake Country, BC



⁵ A stepped rate is a two-step price structure where BC Hydro charges a lower rate for a set amount of electricity consumed per month and a second, higher rate for electricity consumed over that amount.

Appendix A: Current Members of the EC&E Advisory

Lawrence Baird

Ucluelet First Nation

John Cockburn

Natural Resources Canada

Lisa Coltart

Executive Director, Power Smart and Customer Care, BC Hydro

David Craig

Commercial Energy Consumers of BC

Carlo Dal Monte

Catalyst Paper and the Joint Industry Electricity Steering Committee

Barbara Docherty

Independent Power Producers Association of BC

Fred Fortier

Simpco First Nation

Noreen Guenther

Councillor, District of Lake Country

Stephen Hobson

Director, Power Smart, BC Hydro

Matt Horne

Pembina Institute

Len Horvath

Building Owners and Managers Association of BC

John Newcomb

Member at Large affiliated with the University of Victoria, CRD Advisory Committees and BC Sustainable Energy Association

Nicole Meints

EECOL Electric Corp.

Javier Pacheco-Raguz

BC Hydro Customer

Andrew Pape-SalmonMinistry of Energy, Mines and Petroleum Resources (*ex-officio*)**Dan Potts**

Joint Industry Electricity Steering Committee

Shelley Rennick

University of Northern British Columbia

Nic Rivers

Simon Fraser University

Bahareh Toghiani Rizi

Youth Representative

John Robinson

University of British Columbia

Dan Smith

First Nations Summit

Merran Smith

ForestEthics

Sarah Smith

Terasen Gas

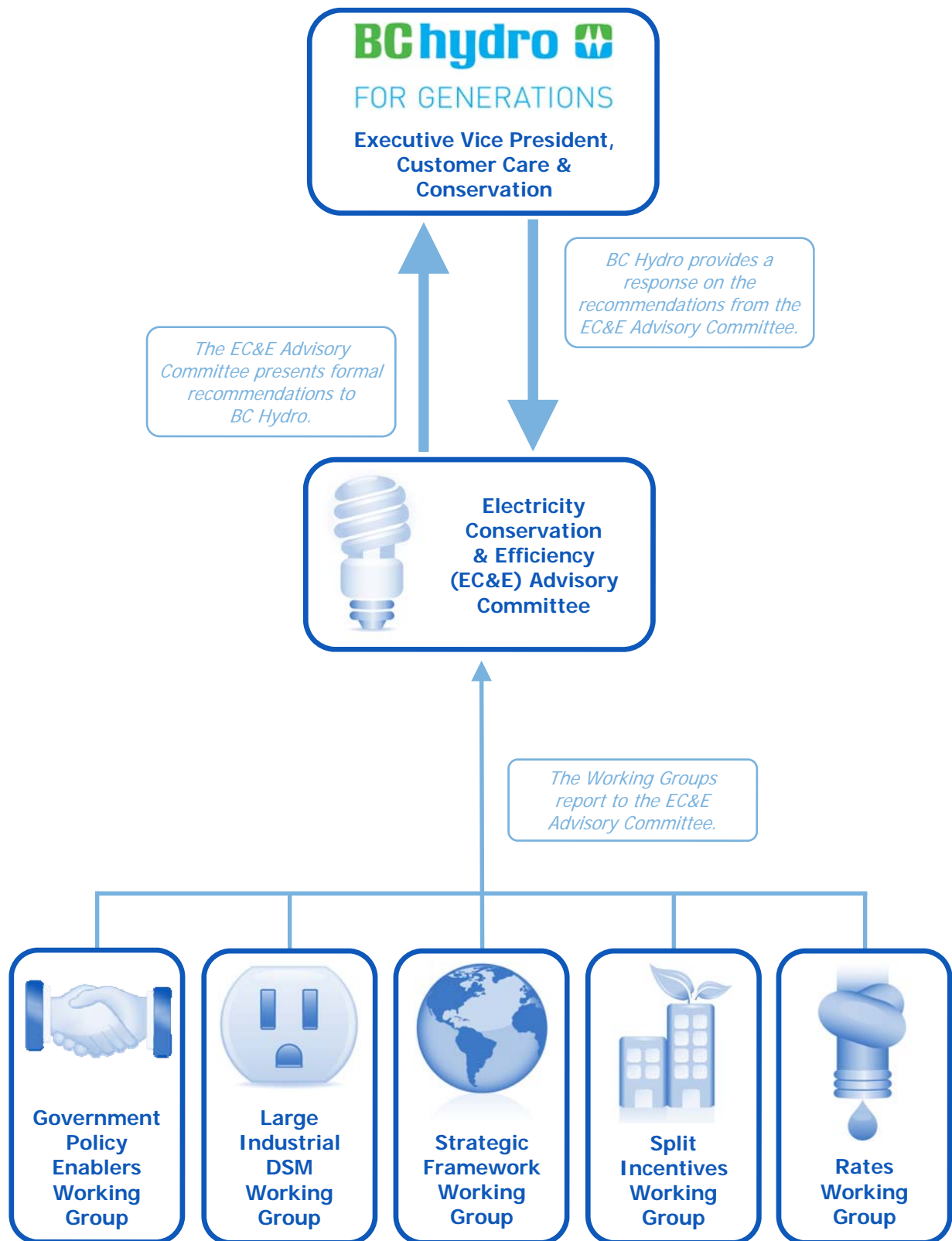
Bev Van Ruyven

Acting President and CEO, BC Hydro

Paul WieringaMinistry of Energy, Mines and Petroleum Resources (*ex-officio*)**Chandra Wong**

BC Hydro Customer

Appendix B: Committee Structure



Appendix C: Working Group Members

Strategic Framework Working Group

EC&E Advisory Committee Members

- David Craig, Commercial Energy Consumers of BC
- John Robinson, University of British Columbia
- Chandra Wong, BC Hydro Customer
- Bahareh Toghiani Rizi, Youth Representative
- Matt Horne, Pembina Institute

BC Hydro Staff

- John Duffy
- Jillian Mallory
- Nicole Young
- Angie Natingor

Split Incentives Working Group

EC&E Advisory Committee Members

- Len Horvath, Building Owners and Managers Association of BC
- Nicole Meints, EECOL Electric Corp.
- Matt Horne, Pembina Institute

Other Members

- Tom Babbs, Lougheed Town Centre, 20 Vic Management
- Tom Carr, Condominium Home Owners' Association
- Ramsay Cook (beginning Nov 2009), Terasen Gas
- Tom Durning, Tenant Resource & Advisory Centre
- Marg Gordon, B.C. Apartment Owners and Managers Association
- Eirk Kaye, Ministry of Energy, Mines and Petroleum Resources
- Linda Woodley, Terasen Gas
- Kris LaRose (resigned Aug 2009), Metro Vancouver Housing Corporation

BC Hydro Staff

- Toby Lau
- Steve Connelly
- Nicole Young
- Mary Anne Coules

Large Industrial DSM Working Group

EC&E Advisory Committee Members

- Dan Potts, Joint Industry Electricity Steering Committee
- David Craig, Commercial Energy Consumers of BC
- Carlo Dal Monte, Catalyst Paper and the Joint Industry Electricity Steering Committee
- Steve Hobson, BC Hydro

Other Members

- Jim Ciccateri, Ministry of Energy, Mines and Petroleum Resources

BC Hydro Staff

- Kevin Wallace
- Jillian Mallory
- Nicole Young
- Angie Natingor

Government Policy Enablers Working Group

EC&E Advisory Committee Members

- John Cockburn, Natural Resources Canada
- Noreen Guenther, Councillor, District of Lake Country
- Steve Hobson, BC Hydro

Other Members

- Erik Kaye, Ministry of Energy, Mines and Petroleum Resources

- Toby Lau, BC Hydro

BC Hydro Staff

- Isobel O'Connell
- Jillian Mallory
- Nicole Young
- Mary Anne Coules

Rates Working Group

EC&E Advisory Committee Members

- David Craig, Commercial Energy Consumers of BC
- Nic Rivers, Simon Fraser University
- Dan Potts, Joint Industry Electricity Steering Committee
- John Newcomb, Member at Large
- Dan Smith, First Nations Summit

Other Members

- Ludo Bertsch, Energy Solutions for Vancouver Island
- Sue Kent, West Vancouver Memorial Library
- Robert Wickson, Discovery Economic Consulting
- Dennis Fitzgerald, DJF Consulting Ltd.
- David Perttula, Terasen Gas
- Sylvia Von Minden, BC Hydro

BC Hydro Staff

- Maureen Black
- Cynthia Lee
- Nicole Young
- Brandee Clayton

Appendix D: Glossary

2007 BC Energy Plan

A policy statement released by the B.C. Government on February 27, 2007 containing 55 energy-related *Policy Actions*.

British Columbia Utilities Commission (BCUC)

An independent regulatory agency of the provincial government operating under and administering the Utilities Commission Act. Its responsibility is the regulation of the energy utilities under its jurisdiction to ensure that the *rates* charged to utility customers for energy are fair, just and reasonable. The BCUC is responsible for ensuring customers receive safe, reliable and non-discriminatory rates and shareholders receive a fair return.

Demand-side management (DSM)

Actions that modify customer demand for electricity, helping to defer the need for new *energy* and *capacity* supply additions.

Distributed generation

Distributed generation is a small-scale power source at or near a customer's site. Distributed generation promises many benefits, including peak shaving, fuel switching and improved power quality.

Electricity conservation

A reduction in *energy* usage through a reduction in the level of energy service, such as turning off unnecessary lights.

Electricity efficiency

The effective rate of conversion of a natural resource (e.g., natural gas) to usable *energy* and *capacity*; the effective rate of conversion of electricity to an end use (e.g., heating).

First Nation

An aboriginal governing body, organized and established by an aboriginal community, or the aboriginal community itself.

Kilowatt (kW)

One thousand *watts*; the commercial unit of measurement of *electric power*. A kilowatt is the flow of electricity required to light ten 100-watt light bulbs.

Long-Term Acquisition Plan (LTAP)

BC Hydro's plan of resource development actions over the next 10 years that, when added to the existing base of resources, will meet its customers' electricity needs through the LTAP period.

Net-zero

A net-zero home, building, industry or community is one that is capable of producing as much energy as it consumes over the year.

Power Smart

The brand name of BC Hydro's *demand side management* initiative to encourage energy efficiency by its customers. Originally launched in 1989, Power Smart has included a full range of DSM programs and supporting initiatives aimed at BC Hydro's residential, commercial and industrial customers.

Rate

Generic term for a utility's *rate structure*.

Rate structure

Represents the prices paid by the classes of customers for use of electricity. For example, BC Hydro's present rate structure for residential customers consists of a flat monthly charge plus a charge for the amount of *electric energy* used (in cents per *kWh*). Other rate structures can include a charge for energy at a rate per *kilowatt hour* that depends on the level of consumption and a charge for demand (in \$ per kW) for their peak demand for electricity that occurs over a certain time period, such as a month.

Split incentives

Incentives specifically developed to encourage three different groups – property developers, owners and occupants – with differing interests to participate in BC Hydro programs.

Stakeholders

A stakeholder is any group or individual that has an interest in, or is affected by BC Hydro's activities.

Stepped rate

A two-step price structure – intended to encourage conservation – where BC Hydro charges its customers a lower rate for a set amount of electricity consumed per month and a second, higher rate for electricity consumed over that amount.

To learn more about BC Hydro's Electricity Conservation & Efficiency Advisory Committee, email stakeholderengagement@bchydro.com or visit bchydro.com.

