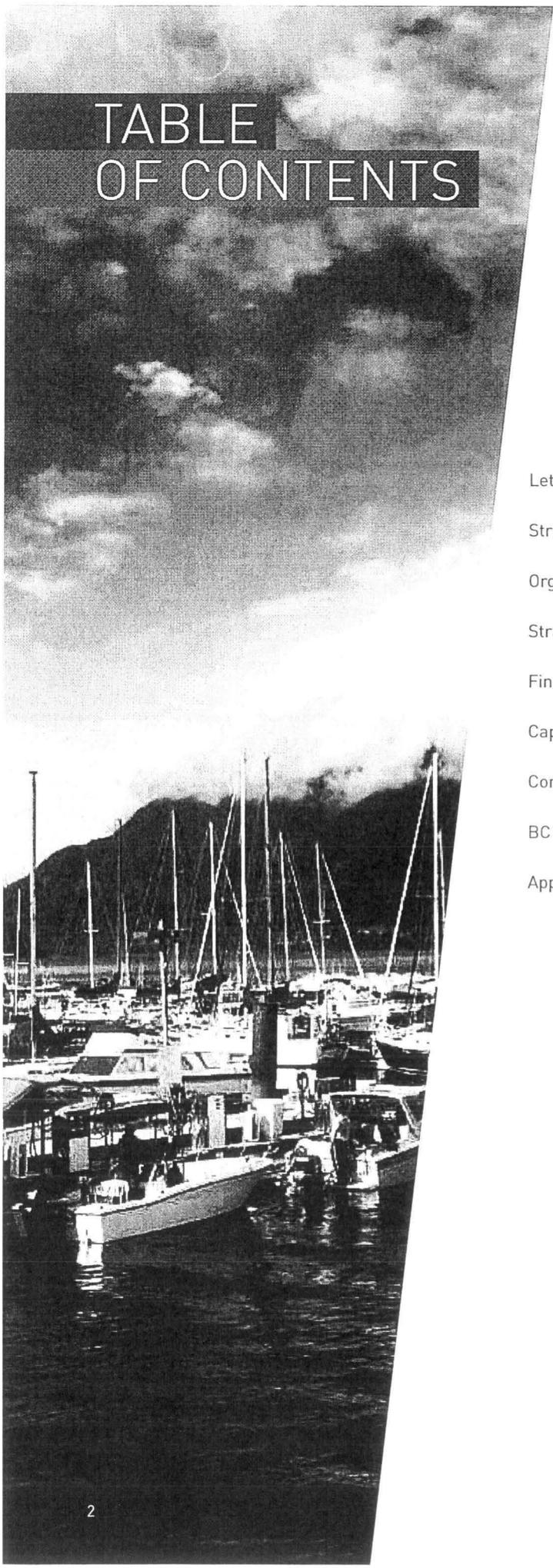


# BC HYDRO SERVICE PLAN 2011/12-2013/14

 **BC hydro**  
FOR GENERATIONS

  
**BRITISH  
COLUMBIA**  
The Best Place on Earth



# TABLE OF CONTENTS

Letter from the Chair to the Minister . . . . .	3
Strategic Context . . . . .	5
Organizational Overview . . . . .	11
Strategic Objectives, Performance Measures and Targets . . . . .	16
Financial Outlook Summary . . . . .	26
Capital Expenditures Summary . . . . .	31
Corporate Governance . . . . .	34
BC Hydro Subsidiaries . . . . .	37
Appendix A: Performance Measures . . . . .	38

# LETTER FROM THE CHAIR TO THE MINISTER

TO: THE HONOURABLE STEVE THOMSON, MINISTER OF ENERGY

On behalf of the Board of Directors, management and employees of BC Hydro, I am pleased to submit BC Hydro's Service Plan for fiscal years 2011/12–2013/14. This Service Plan was prepared under the Board's and management's direction in accordance with the *Budget Transparency and Accountability Act* and the B.C. Reporting Principles. It has been developed to be consistent with the Government's strategic priorities and Fiscal Plan. The Board and management are accountable for the contents of the plan, including the selection of performance measures and targets.

We have considered all significant assumptions, policy decisions and identified risks as of January 28, 2011 in preparing this Service Plan. The performance measures presented are consistent with BC Hydro's revised mandate and strategic objectives, and focus on aspects critical to the organization's performance.

## CELEBRATING 50 YEARS OF CLEAN, RELIABLE ELECTRICITY...

2011 will be a milestone year for BC Hydro, as we celebrate our 50th Anniversary as a Crown corporation and continue to meet the electricity needs of British Columbians and plan for another 50 years and beyond.

The introduction of the *Clean Energy Act* (CEA) last spring was significant for BC Hydro, the Province and its citizens. Among other important objectives, the Act reunited BC Hydro and the BC Transmission Corporation and will move our integrated company forward into an exciting new age of economic growth and job creation driven by clean energy. It sets the foundation for British Columbia to unleash its full potential for clean energy development in every region across the province, while also ensuring that we all benefit from a safe, secure and reliable supply of power for generations to come through a continuous reinvestment in BC Hydro's Heritage Assets.

To carry this bold vision forward, BC Hydro has been revisiting the organization's Vision and Strategic Objectives. As a result, BC Hydro's updated Vision is "Powering BC with Clean, Reliable Electricity for Generations." While BC Hydro's core Values of teamwork, accountability, integrity, safety and service remain the same, we now have six streamlined Strategic Objectives to guide us forward: to safely keep the lights on, succeed through relationships, mind our footprint, foster economic development, maintain competitive rates, and engage a safe and empowered team.

The role of relationships in achieving these objectives is critical. Every BC Hydro employee will play a role in our safety goal and every British Columbian has a part to play in supporting energy conservation. Our partnerships with First Nations, businesses, independent power producers and communities are all pivotal to our strategy, as is our relationship with the Province.



Dan Doyle  
Chair, BC Hydro



Ruskin Dam

## ...WHILE PLANNING FOR THE NEXT 50 YEARS AND BEYOND

We are developing an Integrated Resource Plan that will set BC Hydro's course for meeting future demand, achieving self-sufficiency and reaching our clean electricity generation targets.

Energy conservation and efficiency continue to be our first and best method to meeting the province's rising electricity demand and achieve the provincial target of meeting 66 per cent of the province's future electricity needs through conservation by 2020. Our customers will be further empowered to help us meet this goal as we equip their homes with smart meters, enabling them to better track their electricity consumption and find opportunities to conserve.

While conservation is a cornerstone of our energy planning, we know that more supply will be necessary in the longer term if we are to become electricity self-sufficient using clean, renewable power. That's why BC Hydro is investing \$6 billion in the system over the next three years. Currently, there are hundreds of capital projects underway that, together, make up one of the largest expansions of electrical infrastructure in B.C.'s history. Projects at Mica and GM Shrum, dams and generating stations, and transmission line projects, including lines in the Northwest, Interior to Lower Mainland, Vancouver City Central and Dawson Creek-Chetwynd areas will serve to meet demand, improve reliability and support economic development.

In support of these major initiatives, BC Hydro will be filing a three-year Revenue Requirements Application in early 2011 with the British Columbia Utilities Commission. This application will allow BC Hydro to continue reinvesting in our aging infrastructure, enhance our clean energy system and continue to promote a conservation culture throughout the province. The rate application will also demonstrate BC Hydro's commitment to improve the efficiency of our operations while doing everything we can to keep rates affordable for our customers.

Today the province is growing and evolving. It is BC Hydro's responsibility to ensure that we continue to have an electricity system that we can all count on to power our economy, create jobs in every region, and keep the lights on. That's why we are building, renewing, and conserving together to meet today's needs and those of future generations, just as our predecessors did 50 years ago.

Dan Doyle, Chair

# STRATEGIC CONTEXT

Almost 50 years ago BC Hydro was created to plan, build and deliver a clean, reliable supply of electricity to homes and businesses throughout our growing province. Investments in dams, generating stations and transmission and distribution networks ensured a stable supply of electricity for the generations of British Columbians that followed.

Thanks to this visionary planning and investment, we have been reliably meeting our province's energy needs for the past 50 years. However, a substantial part of our electricity system infrastructure is reaching an age when significant investment is required.

Our province and population continues to grow and so has our need for more electricity. As we look to the future, new technologies, new industry and growing populations are increasing demand for energy. At the same time, demand is growing for electricity that is generated by clean sources such as hydro and wind.

As our province's energy needs grow, BC Hydro must invest in our generation and transmission assets and adopt new technologies that prepare us for the future. By upgrading our existing facilities, securing new supplies of clean energy, building new transmission and distribution infrastructure, and encouraging conservation and energy efficiency, BC Hydro will keep meeting the electricity needs of B.C.'s future generations.

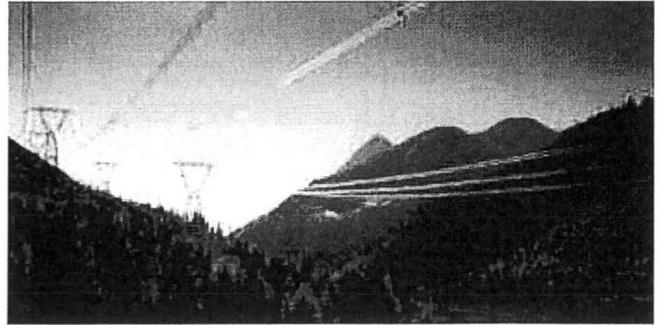
## SAFETY IS THE TOP PRIORITY

Public and employee safety is the top priority at BC Hydro and must be an integral part of how we operate. Producing and delivering electricity safely involves keeping our system well-maintained, including safety in the design of our operating systems and facilities, and building a safety culture throughout the company.

For example, BC Hydro owns, operates and maintains over 70 dams at 41 sites across British Columbia and manages risks to public and employee safety through a comprehensive and world-class dam safety program.

To meet the requirements of the B.C. Dam Safety Regulation, BC Hydro's dam safety program conducts inspections, independent expert reviews, and monitors instrumentation data from the dams. Potential deficiencies are identified for further study, and when dam safety improvements are found to be necessary, the projects are prioritized and brought into BC Hydro's capital planning process.

BC HYDRO SERVICE PLAN 2011/12-2013/14



Enhancing employee safety remains an urgent priority of the company. BC Hydro recently created a Safety Task Force of operations-based employees in high-risk fields who will look at the underlying causes of incidents and recommend measures to improve worker safety.

## DEMAND FOR ELECTRICITY IS GROWING

Meeting current and future demand for electricity in B.C. is the foundation of our planning activities. We are now forecasting that the province's electricity needs will grow by as much as 40 per cent over the next 20 years, due to industrial activity and general economic and population growth.

Since the late 1990s, BC Hydro has depended on electricity imports to augment our domestic supply in order to meet the demand for power. The Province has established a goal of achieving electricity self-sufficiency by 2016 – meaning that BC Hydro must be able to supply British Columbia's electricity needs through domestic sources of power.

To meet B.C.'s future electricity needs, there is a need to renew, replace and expand BC Hydro's aging generating, transmission and distribution infrastructure, which was built mostly in the 1960s, 70s and 80s.

In addition to the growing demand for electricity that is the result of economic growth and rising population, the *Clean Energy Act* encourages greater use of the electricity system in order to decrease greenhouse gas emissions, which could result in a further increase in electricity use.

The magnitude and timing of future increases in demand will challenge BC Hydro as we determine how and when to secure generation and transmission resources to meet our customers' growing needs.

## PLANNING TO MEET FUTURE DEMAND

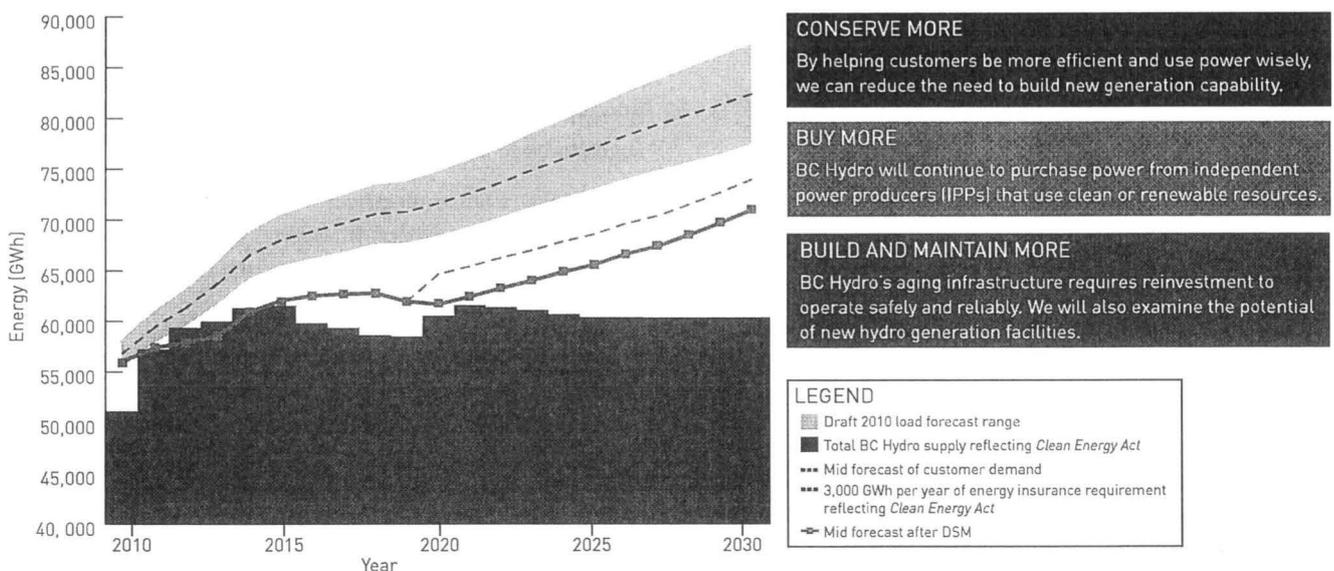
To ensure we meet British Columbia's future electricity needs, BC Hydro is preparing an Integrated Resource Plan (IRP) for submission to the Ministry of Energy by November 2011.

BC Hydro's core strategy is to 'conserve, build and buy'. Conservation is the first priority, and is targeted to meet approximately two-thirds of B.C.'s future electricity needs, as described in the *Clean Energy Act*. Building a sustainable future also includes reinvesting in heritage hydroelectric assets, exploring new clean energy infrastructure projects such as Site C, and acquiring renewable energy from independent clean energy producers.

The Integrated Resource Plan will set BC Hydro's course for achieving self-sufficiency, ensuring that 93 per cent of the generation in the province comes from clean or renewable resources to help meet provincial greenhouse gas reduction targets, as directed by the *Clean Energy Act*. As well, given long transmission construction lead times, the plan will contain an assessment of transmission requirements looking 30 years out.

## BC HYDRO'S ELECTRICITY GAP

BC Hydro's Supply and Demand Outlook



## CONSERVATION AND ENERGY EFFICIENCY REMAINS FIRST CHOICE FOR MEETING DEMAND

BC Hydro has a long history of encouraging customers to be Power Smart, providing customer information and education programs, and offering incentives and rebates to promote energy efficiency. The BC Hydro Power Smart program is a world leader in the promotion of conservation and energy efficiency, and this has seen us achieve our Demand Side Management (DSM) energy savings targets, which in turn reduces the amount of new energy we have to secure.

BC Hydro's leadership in creating a permanent conservation culture in B.C. will continue, as the *Clean Energy Act* calls for BC Hydro to meet 66 per cent of future incremental power demand from conservation and energy efficiency by 2020.

In order for BC Hydro's conservation initiatives to continue filling a large part of the gap between energy demand and supply, we will work with the Province to implement new programs, codes and standards. At the same time, with electrification playing a role in reducing the province's GHG emissions, the scope of BC Hydro's DSM activities may expand to include initiatives that increase load in order to reduce overall GHG emissions.

**CONSERVE MORE**  
By helping customers be more efficient and use power wisely, we can reduce the need to build new generation capability.

**BUY MORE**  
BC Hydro will continue to purchase power from independent power producers (IPPs) that use clean or renewable resources.

**BUILD AND MAINTAIN MORE**  
BC Hydro's aging infrastructure requires reinvestment to operate safely and reliably. We will also examine the potential of new hydro generation facilities.

**LEGEND**

- Draft 2010 load forecast range
- Total BC Hydro supply reflecting Clean Energy Act
- Mid forecast of customer demand
- 3,000 GWh per year of energy insurance requirement reflecting Clean Energy Act
- Mid forecast after DSM

\* Special Direction 10 (SD 10) to BCUC requires BC Hydro to achieve electricity self-sufficiency by 2016 and each year thereafter solely from electricity generating facilities within B.C. As a result, BC Hydro has removed the 2,500 GWh/yr of non-firm energy/market allowance from its resource stack effective F2017.

## ORGANIZATIONAL OVERVIEW

The B.C. Government's 2007 *BC Energy Plan* lays out the general energy policies we are required to follow. The 2010 *Clean Energy Act (CEA)* updates several elements and targets included in that plan and provides further guidance for how we are to meet the Province's energy objectives. The CEA came into force on June 3, 2010, consolidated BC Hydro and British Columbia Transmission Corporation, and set targets for meeting the goals of electricity self-sufficiency, reduced greenhouse gas emissions, and increased investments in clean, renewable energy across the province.



### CLEAN ENERGY ACT OBJECTIVES:

- (a) to achieve electricity self-sufficiency;
- (b) to take demand-side measures and to conserve energy, including the objective of the authority reducing its expected increase in demand for electricity by the year 2020 by at least 66 per cent;
- (c) to generate at least 93 per cent of the electricity in British Columbia from clean or renewable resources and to build the infrastructure necessary to transmit that electricity;
- (d) to use and foster the development in British Columbia of innovative technologies that support energy conservation and efficiency and the use of clean or renewable resources;
- (e) to ensure the authority's ratepayers receive the benefits of the Heritage Assets and to ensure the benefits of the heritage contract under the *BC Hydro Public Power Legacy and Heritage Contract Act* continue to accrue to the authority's ratepayers;
- (f) to ensure the authority's rates remain among the most competitive of rates charged by public utilities in North America;
- (g) to reduce B.C. greenhouse gas emissions;
  - (i) by 2012 and for each subsequent calendar year to at least 6 per cent less than the level of those emissions in 2007,
  - (ii) by 2016 and for each subsequent calendar year to at least 18 per cent less than the level of those emissions in 2007,
  - (iii) by 2020 and for each subsequent calendar year to at least 33 per cent less than the level of those emissions in 2007,
  - (iv) by 2050 and for each subsequent calendar year to at least 80 per cent less than the level of those emissions in 2007, and
  - (v) by such other amounts as determined under the *Greenhouse Gas Reduction Targets Act*;
- (h) to encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia;
- (i) to encourage communities to reduce greenhouse gas emissions and use energy efficiently;
- (j) to reduce waste by encouraging the use of waste heat, biogas and biomass;
- (k) to encourage economic development and the creation and retention of jobs;
- (l) to foster the development of First Nation and rural communities through the use and development of clean or renewable resources;
- (m) to maximize the value, including the incremental value of the resources being clean or renewable resources, of British Columbia's generation and transmission assets for the benefit of British Columbia;
- (n) to be a net exporter of electricity from clean or renewable resources with the intention of benefiting all British Columbians and reducing greenhouse gas emissions in regions in which British Columbia trades electricity while protecting the interests of persons who receive or may receive service in British Columbia;
- (o) to achieve British Columbia's energy objectives without the use of nuclear power;
- (p) to ensure the commission, under the *Utilities Commission Act*, continues to regulate the authority with respect to domestic rates but not with respect to expenditures for export, except as provided by this Act.

## ORGANIZATIONAL OVERVIEW

The B.C. Government's Shareholder's Letter of Expectations describes the relationship between BC Hydro and the Province, and sets out objectives that the Shareholder wishes BC Hydro to achieve.

The Province and BC Hydro review the letter annually and update it as required. Directions outlined in the letter focus on:

- Supporting the implementation of the *Clean Energy Act*.
- Achieving cost savings and efficiencies.
- Planning and operating the transmission system to serve domestic, export and economic development needs.
- Working with the BCUC.

This Service Plan outlines how we intend to meet the Shareholder's expectations over the next three years. For more details on the current Shareholder's letter, go to: [bchydro.com/about/company\\_information/openness\\_accountability.html](http://bchydro.com/about/company_information/openness_accountability.html).

## INTEGRATED RESOURCE PLAN

The 2010 *Clean Energy Act* requires BC Hydro to prepare an Integrated Resource Plan (IRP) for government review and approval by November 2011. This plan will set BC Hydro's course for acquiring generation and transmission resources to meet our customers' anticipated future electricity needs.

For more information, go to: [bchydro.com/planning\\_regulatory/long\\_term\\_electricity\\_planning/irp/about\\_irp.html](http://bchydro.com/planning_regulatory/long_term_electricity_planning/irp/about_irp.html).



## OUR REGULATOR

BC Hydro is regulated by the BCUC. Under the *Utilities Commission Act*, the BCUC must approve the rates BC Hydro charges for electricity. The rates allow us to recover costs incurred in serving our customers, including earning a return on equity.

On March 3, 2010, BC Hydro filed a Revenue Requirements Application (RRA) with the BCUC for F2011, proposing a general rate increase of 6.11 per cent and an increase in the deferral account rate rider by 3 per cent. These increases were effective, on an interim basis, on April 1, 2010 and resulted in an overall net bill impact to our customers of 9.26 per cent. In December 2010, the BCUC accepted a negotiated settlement between BC Hydro and intervener groups, including representatives from our main customer groups, which resulted in an overall customer net bill impact of 7.29 per cent.

We will file our F2012–F2014 RRA with the BCUC in February 2011, requesting increases to rates of 9.73 per cent per year in F2012–F2014. Please see the Financial Outlook Summary section on page 26 for detailed information on annual and cumulative changes in rates and rate riders. The rate increases are attributable primarily to higher finance charges and amortization expenses due to increases in capital expenditures required to maintain an aging asset base and meet customer growth, as well as increases in domestic energy costs as new sources of firm supply are at higher prices than existing heritage sources.

Other significant applications and filings under review or that we expect to submit to the BCUC over the next fiscal year include:

- Ruskin Dam and Powerhouse Upgrade Project.
- John Hart Generating Station Replacement Project.
- Dawson Creek/Chetwynd Area New Transmission Project.
- Time of Use (TOU) Rates.

For more information on the F2012–F2014 RRA as well as other current regulatory matters, go to: [bchydro.com/planning\\_regulatory/regulatory.html](http://bchydro.com/planning_regulatory/regulatory.html) or visit the BCUC website: [bcuc.com](http://bcuc.com).

## STRATEGIES

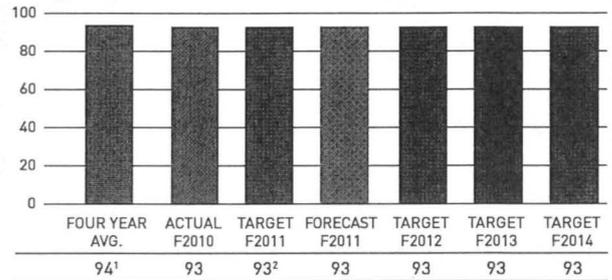
- Continue to implement Power Smart programs and focus on community energy planning.
- Introduce new electricity conservation rate structures.
- Support the adoption of new regulations for energy-efficient products, building codes and standards.
- Apply an “avoid,” “minimize,” and “offset” hierarchy approach to managing the impact on the environment from resource use, operations and new developments.
- Through capital investments identify and implement environmental opportunities, including design considerations which achieve positive environmental outcomes.
- Meet all new regulatory requirements for greenhouse gas emissions from our emission sources. This includes preparing to participate in emission trading under the *B.C. Cap and Trade Act* and ensuring our operations are carbon neutral under the *B.C. Greenhouse Gas Reduction Targets Act*.
- Conduct an assessment of the opportunities and implications associated with supporting the new provincial *Zero Net Deforestation Act* through BC Hydro’s operational activities and planned capital projects.
- Prepare for the impacts of climate change to our operations and develop risk-based adaptation strategies.
- Pursue and measure the effectiveness of fuel-switching initiatives per the CEA to reduce greenhouse gases in support of provincial targets.
- Continue to purchase power from IPPs that use clean or renewable resources.
- Continue implementing the PCB electrical equipment phase out strategy, and develop a long-term strategy for the handling, decontamination and disposal of PCB contaminated equipment and materials.
- Invest in projects, including The Smart Metering & Infrastructure Program and other business intelligence solutions to encourage conservation.

## PERFORMANCE MEASURES

(Please see Appendix A for Performance Measure definitions, rationales and benchmarking information.)

### CLEAN ENERGY (%)

Energy from clean or renewable resources—higher is better



<sup>1</sup> This measure was not reported in F2007; this represents three years of data.

<sup>2</sup> F2011 target was revised from the original 90 per cent target as a result of the *Clean Energy Act*.

**“I REALLY STARTED WATCHING EVERY LITTLE THING, BECAUSE IT’S THE LITTLE THINGS THAT MAKE SUCH A BIG DIFFERENCE.”**

Ryan Kesler isn’t too bothered by cold. In fact, the Canucks centre likes to keep his house a little chilly—not that big of a surprise, considering how much time he spends out on the ice. The thing is, Ryan’s wife Andrea doesn’t quite feel the same way. She likes to keep the house well on the toasty side.

All of this used to mean a miniature cold war over the thermostat. Since joining Team Power Smart, though, the Keslers have found a comfortable middle. Now, they set the thermostat a little lower than they used to, and when Andrea’s feeling chilly, she reaches for a warm sweater.

Can saving energy really be as simple (and as comfortable) as throwing on a sweater instead of turning up the heat? If we all kept our homes just 1°C cooler, the whole province would save enough electricity in one year to power the NHL for over 30 seasons.

Join Team Power Smart<sup>SM</sup> and receive exclusive member benefits. Sign-up at [bchydro.com/joinms](http://bchydro.com/joinms).

**BC Hydro powersmart**

**BE SMART WITH YOUR POWER AND WITH YOUR MONEY.**

\*Must be at least 19 years of age and a resident of BC.



## FOSTER ECONOMIC DEVELOPMENT

Foster economic development opportunities across B.C. through our projects, practices and advancement of the clean energy sector.

BC Hydro will continue to be a significant contributor to economic development in B.C., and to support the development of clean energy suppliers, businesses and innovative technologies in this province.

The *Clean Energy Act* affirms and expands our responsibilities for promoting economic development across the province, and asks us to help ensure B.C. is positioned for success in evolving energy markets. It also outlines various electrification initiatives for BC Hydro, such as the Northwest Transmission Line, that will drive development, support the use of clean technologies and help reduce greenhouse gases.

### PERFORMANCE MEASURES

Measures of BC Hydro's contribution to economic development will include our direct and indirect impacts on provincial GDP and job creation. A baseline for BC Hydro's impacts will be developed in F2012 to enable us to set targets in next year's Service Plan.

### STRATEGIES

- Continue to develop best-in-class energy-procurement practices; strengthen relationships with energy suppliers; and complete energy procurement activities such as developing bioenergy initiatives, maintaining the Standing Offer Program and establishing a feed-in-tariff.
- Advance innovative integrated energy solutions in regional and Aboriginal communities.
- Support innovative technologies in B.C. by attracting federal, cross-sector and private funding; partnering with academic institutions; and enabling technology demonstrations through access to our expertise and non-financial resources, such as properties.
- Work with other economic development agencies to leverage resources, knowledge, expertise, funds and partnerships.
- Ensure we have appropriate tariff/rate structures in place and market B.C.'s advantages to attract new investment in B.C.
- Use innovative business development approaches to enable new energy projects that make sense from a longer-term, provincial perspective.
- Pursue electrification initiatives as directed by the *Clean Energy Act*.
- Develop rates, terms and conditions for integrating intermittent resources and for ancillary services; work with government to advocate for eligibility of B.C. clean resources in renewable portfolio standard programs; and pursue expanding transmission capacity from B.C. to destination markets.