

# BC Hydro Service Plan

2005/06 to 2007/08 Service Plan Update

September 2005



Reliable power



at low cost



for generations

# Table of Contents

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Letter from the Chair to the Minister	3
Message from the President and Chief Executive Officer	4
Executive Summary	6
Section 1. Introduction	9
Section 2. Organizational Overview	10
Section 3. Purpose & Long Term Goals	16
Section 4. Risks	20
Section 5. Organizational Structure	23
Section 6. Business Environment	26
Section 7. BC Hydro’s Strategies, Performance Measures and Targets	30
Section 8. Financial Outlook Summary	38
Section 9. Alignment with the Government’s Strategic Plan	46
Conclusions	47

***“All significant assumptions, policy decisions and identified risks as of August 2005 have been considered in preparing the plan. I am accountable for ensuring BC Hydro achieves its specific goals and objectives identified in the Service Plan.”***

L.I. (Larry) Bell  
Chair

***“At BC Hydro, we believe a sustainable approach that is based on environmental, social and economic factors will leave a positive legacy for future generations. The Service Plan that follows lays the foundation for our short and long term strategies. Our performance will be measured against the achievement of our goals.”***

Bob Elton  
President and Chief Executive Officer



## Letter from the Chair to the Minister

The Honourable Richard Neufeld  
Minister of Energy, Mines and Petroleum Resources

Dear Minister:

On behalf of the Board of Directors and employees of BC Hydro, I am pleased to submit BC Hydro's updated Service Plan for fiscal years 2005/06 to 2007/08. The plan was prepared under my direction in accordance with the Budget Transparency and Accountability Act. I am accountable for the contents of the plan, including the selection of performance measures and targets. The plan is consistent with the government's strategic priorities and overall Strategic Plan. All significant assumptions, policy decisions and identified risks as of August 2005 have been considered in preparing the plan. I am accountable for ensuring BC Hydro achieves its specific goals and objectives identified in the Service Plan.

In the past year, BC Hydro continued to implement the portions of the provincial Energy Plan that pertain to us. The Energy Plan preserves public ownership of BC Hydro and ensures rates are kept low for customers. It also sets out the policies to encourage more private sector involvement, reliability of supply, and environmental responsibility. In addition, the plan created an independent BC Transmission Corporation (BCTC) to manage, operate and plan the transmission system. I am pleased to report that we have made great progress on these action items.

The province's electricity sector now includes a number of private sector power producers, who currently provide approximately 15% of the annual electricity requirements of the province. There are also further contracts for Independent Power Producers to supply the BC Hydro system in the future, a large portion of which are for green energy. BCTC is now a fully established and operationally separate Crown corporation.

Last year the BC Utilities Commission approved our first rate increase in more than a decade. Effective April 1, 2004, our rates increased by 4.85 per cent. Even with this increase, our rates are still the third lowest in North America. This increase will help to preserve the benefits of our aging heritage hydroelectric system. With customer demand growing, we need to replace and upgrade assets, and bring on new supply to meet growing demand. BC Hydro will continue to diligently manage costs and eliminate waste to maintain low rates for our customers.

As reflected in this Service Plan, BC Hydro is taking a bold, new, long-term approach to business. We have redefined our purpose and created 15 long-term goals. Our approach is about sustainability over the long term and our focus is on the environmental, social and financial bottom lines. We will also work with every British Columbian – First Nations, stakeholders, customers, the shareholder and regulator. We have the opportunity to give British Columbians a greater role in decisions about BC Hydro's future. We look forward to this opportunity.

In the time since the original publication of this Service Plan in February 2005, there have been a number of significant activities at BC Hydro. Among them was our announcement on June 17, 2005 that we were abandoning the Duke Point Power Project because the risks were too great that it would not be ready in time. This followed a decision the previous week by the B.C. Court of Appeal in favour of an appeal proceeding on that project.

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BC Hydro has also announced a revision to its upcoming open call for power. The Call scheduled for the fall of 2005 has been revised so that the likely outcome is a minimum of 1800 gigawatt-hours per year (GWh/yr) of new supply. BC Hydro has also allowed for the option of accepting even more energy - where it is economic to do so - to help address implications of the loss of associated energy from the Duke Point project.

Finally, on the labour front, BC Hydro was able to negotiate one-year extensions of its collective agreements with both the International Brotherhood of Electrical Workers (IBEW) Local 258 and the Canadian Office and Professional Employees (COPE) Local 378. Both contract extensions are within the current public sector guidelines.

Yours truly,



L. I. (Larry) Bell  
Chair



## Message from the President and Chief Executive Officer

I am pleased to present BC Hydro’s updated Service Plan for fiscal years 2005/06 to 2007/08 on behalf of the Board of Directors and employees of BC Hydro.

BC Hydro is a Crown corporation with a strong legacy in British Columbia. BC Hydro touches almost every region, community and citizen. Our dams, transmission lines and operating facilities have provided a flexible, low-cost electricity system for decades. British Columbians continue to benefit from the system today.

BC Hydro does not want to change that legacy. Instead, we want to manage the environmental and social footprint we leave so that this legacy continues for future generations. And from what we’ve learned by asking British Columbians, they also agree with a longer-term vision.

From our perspective, this means changing the way we operate. We have created a new purpose – reliable power, at low cost, for generations. We believe this purpose reflects the public trust we are charged with, to ensure that the resources we inherited will be just as valuable to our children. Our intention is to connect the benefits of our heritage system today with the future. We recognize the importance of maintaining the high level of reliability required by our customers. We will do this by ensuring we have the resources from a longer-term planning perspective and that we are appropriately investing in our infrastructure.

Fifteen long-term goals will support our new purpose. Our long-term goals encompass optimizing existing operations; adding new power supplies competitively; protecting the environment; addressing the values of our stakeholders, First Nations, communities and all British Columbians; fostering a performance-based, customer-oriented culture for our employees; and, finally, protecting the financial legacy of BC Hydro for the province.

We cannot meet our purpose on our own. Every British Columbian will play a pivotal role. British Columbians are among the highest energy consumers per capita in the world. Together, we need to decide whether we will consume less or generate more energy. BC Hydro will provide the leadership, express opinions and state facts. And we will engage our partners – from our customers to First Nations to the regulator – so that the right energy choices for British Columbia are determined by all of us. Our view is that a balance can be found that includes conservation and energy efficiency, and environmentally responsible resource acquisition choices.

At BC Hydro, we believe that a sustainable approach based on environmental, social and economic factors will leave a positive legacy for future generations. The Service Plan that follows lays the foundation for our short- and long-term strategies. Our performance will be measured against the achievement of our goals.

BC Hydro’s vision is clear, but our path to achieve it requires choices to be made. Our goals cannot be achieved without the help of our partners. We look forward to the chance to work with you to make these choices and build a lasting legacy for the generations that follow us.

Bob Elton  
President and Chief Executive Officer

# Executive Summary

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BC Hydro's 2005/06 – 2007/08 updated Service Plan is prepared in accordance with the Budget Transparency and Accountability Act. The plan sets out BC Hydro's long-term strategy, specifically the next three years. It provides the targets and measures upon which the public, the shareholder, regulator and stakeholders can evaluate BC Hydro's performance.

BC Hydro is the largest electric utility in B.C., serving 94 per cent of the province's population. The dams and generating facilities are part of the province's heritage, and provide the low-cost, reliable power British Columbians require today. Regulated by the B.C. Utilities Commission, BC Hydro acts within the legislative requirements of the Hydro and Power Authority Act. The province's electricity sector also includes 36 private sector power producers, who operate in the province under contract to BC Hydro and provide almost 7,000 GWh of electricity to the system annually. There are a further 23 Independent Power Producers contracted to bring on over 1800 GWh of supply in the future. Of the total 59 contracts, 26 are for green energy, providing over 2,700 GWh annually.

The provincial Energy Plan, introduced in November 2002, provided the framework for evolution of the sector. The Energy Plan preserves public ownership of BC Hydro and ensures rates are kept low for customers. It also sets out the policies to encourage more private sector involvement, reliability of supply and environmental responsibility. In addition, it created an independent BC Transmission Corporation to manage and operate the transmission system.

BC Hydro's challenge lies in preserving the benefits of the heritage hydroelectric system. The assets are aging and need to be upgraded or replaced. The customer base and demand is growing, putting new demands on BC Hydro to increase the supply of electricity. The cost of maintaining existing assets, and the costs of energy, which include the costs of new supply, make up BC Hydro's biggest costs. BC Hydro

must work to manage costs and eliminate waste to maintain low rates for customers.

To respond to this challenge, BC Hydro has redefined its purpose as "reliable power, at low cost, for generations". The approach is about having energy available and being able to deliver it when it is needed, maintaining the legacy of our low cost operations, and sustainability over the long term focusing on the environmental, social and financial bottom lines. BC Hydro has created 15 long-term goals to help meet that purpose as first described in the February 2005 Service Plan. Divided into six categories – Customer, Employees, Social, Environment, Financial and Enablers – the goals are strategically aligned to the purpose and will guide business decisions and operations in the years to come.

Over the next 20 years, BC Hydro will partner with customers to reduce energy consumption, build relationships of mutual respect with First Nations and stakeholders, ensure no net incremental impact on the environment, establish domestic electricity self-sufficiency, and act within public policy and the regulatory environment to successfully meet these goals.

BC Hydro faces significant risks that are beyond its control, but that could affect the ability to achieve the short- and long-term goals of this plan. Risks fall into four categories: employee and public safety, reliability, financial performance, and environmental and social performance. While risks cannot be eliminated, BC Hydro has a specific risk management process to minimize or mitigate them.

BC Hydro has also changed its internal organizational structure to align itself with the evolution of the electricity sector and to deliver on its new purpose and long-term goals. Focusing on the core values of Accountability, Integrity, Service and Teamwork, BC Hydro will manage costs and eliminate waste to ensure the company continues to operate efficiently and cost-effectively over the long term.

BC Hydro is governed by a Board of Directors, which reports directly to the Minister of Energy, Mines and Petroleum Resources. Our *Shareholder's Letter of Expectations* describes the working relationship and is reviewed annually and updated as required. In developing the long-term goals, BC Hydro has considered the shareholder's needs, and these are reflected in the strategies and plans.

BC Hydro has also considered the external and internal business environments, monitoring them to identify their potential influences and to revise strategies and plans accordingly.

BC Hydro will evaluate its performance with new targets and measures. BC Hydro is in the process of developing the right indicators for each of the 15 long-term goals. This will enable BC Hydro to modify short- and long-term plans at early stages, and ensure BC Hydro is on the right track to meeting its goals.

The Service Plan ends with a high-level review of the financial outlook for BC Hydro. BC Hydro's financial outlook incorporates a 4.85-per cent rate increase, effective from April 1, 2004, that was approved by the BC Utilities Commission.

All British Columbians – customers, First Nations, stakeholders, the shareholder and regulator – will play a role in BC Hydro's future. Working together with these partners into the future with a commitment to environmental, social and financial factors, we will leave a legacy of reliable power, at low cost, for generations.



**Built in September 1968, the WAC Bennett Dam is among the world's largest earthfill dams. Together with the 10-unit GM Shrum (GMS) Generating Station it comprises the Portage Mountain Project. A stator upgrade project, planned for completion in 2012, will reduce the number of forced outages and related financial impacts.**

# BC Hydro's Long-Term Goals

CATEGORY	20-YEAR GOAL
<b>CUSTOMER</b>	
1. Reliability (Customer)	<ul style="list-style-type: none"> <li>Best-in-class reliability by customer segment</li> </ul>
2. Reliability (Supply)	<ul style="list-style-type: none"> <li>Electricity self-sufficiency (energy and capacity) in B.C. for meeting all domestic needs</li> </ul>
3. Customer Satisfaction	<ul style="list-style-type: none"> <li>To lead other companies in offering extraordinary value and service</li> </ul>
4. Remote Community Electrification	<ul style="list-style-type: none"> <li>To provide appropriate electric service to all remote communities on an equitable basis</li> </ul>
<b>EMPLOYEES</b>	
5. Workplace	<ul style="list-style-type: none"> <li>Among the Top 10 Best Employers in Canada</li> </ul>
6. Teamwork	<ul style="list-style-type: none"> <li>All employees working collaboratively on one team to the benefit of all stakeholders</li> </ul>
7. Safety	<ul style="list-style-type: none"> <li>To provide the safest work environment compared with the best performers in any industry</li> <li>None of our employees will experience a serious safety injury</li> </ul>
<b>SOCIAL</b>	
8. First Nations	<ul style="list-style-type: none"> <li>Improve relationships built on mutual respect and that appropriately reflect the interests of First Nations</li> </ul>
9. Stakeholder Engagement	<ul style="list-style-type: none"> <li>To be the most respected company in B.C.</li> </ul>
10. Suppliers	<ul style="list-style-type: none"> <li>100% of suppliers have demonstrated values congruent with those of BC Hydro</li> </ul>
<b>ENVIRONMENT</b>	
11. Environmental Impact	<ul style="list-style-type: none"> <li>No net incremental environmental impact</li> </ul>
12. Electricity Conservation and Efficiency	<ul style="list-style-type: none"> <li>Develop and foster a conservation culture in B.C. that leads to customers choosing to make a dramatic and permanent reduction in electricity intensity</li> </ul>
<b>FINANCIAL</b>	
13. Financial Targets	<ul style="list-style-type: none"> <li>Maintain existing position of having costs among the lowest in North America</li> <li>Deliver 100% forecast net income on an annual basis (after adjustments for uncontrollable factors like water volatility)</li> </ul>
<b>ENABLERS</b>	
14. Western Opportunities	<ul style="list-style-type: none"> <li>To increase profits in the broader western market by leveraging our system and trading capabilities and implementing long-term investment and procurement strategies</li> </ul>
15. Innovation and Technology	<ul style="list-style-type: none"> <li>To be an industry leader in innovation and use of new technology, directly supporting and advancing BC Hydro's long-term goals.</li> </ul>

# 1. Introduction

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BC Hydro's 2005/06 – 2007/08 updated Service Plan sets out BC Hydro's strategy for the years to come, with specific details for the next three years. It is, in effect, BC Hydro's Strategic Business Plan.

This Service Plan is consistent with the February 2005 Service Plan. It includes BC Hydro's long-term goals spanning 20 years, which provides the context for BC Hydro's plans over the next three years. While BC Hydro continues to operate by a Line of Business model, detailed reporting by each Line of Business has been removed. Instead, the Service Plan consolidates this information to avoid duplication. A new risk section has been created to allow for an expanded and thorough discussion of risks and BC Hydro's risk management strategies.

The Service Plan outlines the business environment in which the company operates and defines the goals it plans to achieve, the risks it faces, and the measures and targets by which to evaluate BC Hydro's performance. Specifically:

- Section 2 provides the Organizational Overview that describes BC Hydro's legislative mandate, policy environment, operations and performance.
- Section 3 details the company's new purpose and long-term goals. Taken together, these create a new vision that connects BC Hydro's historic operations to the future.
- Section 4 details the specific risks to BC Hydro's operations. These risks are assessed and risk management strategies defined.
- Section 5 describes how BC Hydro aligned its organization to take advantage of the opportunities and address the challenges of its operating environment. Specific details around BC Hydro's operational business units have been merged to provide an overall business approach for BC Hydro.

- Section 6 is structured to give the reader a sense of the environment in which BC Hydro operates today and expects to operate in the future. This includes the external and internal factors that BC Hydro considers in its planning.
- Section 7 describes BC Hydro's short- and long-term strategies for each of the long-term goals, and provides the targets and measures on which BC Hydro will evaluate its performance.
- Section 8 summarizes the financial outlook and key financial assumptions made for the 2005/06 – 2007/08 Service Plan.
- Finally, Section 9 shows how BC Hydro is aligned with the government's Strategic Plan.



**Hugh Keenleyside Dam is an earthfill and concrete structure that incorporates a navigation lock, four spillways, and eight low-level ports. A remediation project, planned for completion in 2011, will mitigate earthquake risk and protect public safety.**

## 2. Organizational Overview

### Mandate

BC Hydro, established under the *Hydro and Power Authority Act*, is a Crown corporation owned by the Province of British Columbia. BC Hydro generates or buys electricity and owns the transmission and distribution systems in the province that deliver electricity to customers in B.C. and to export markets.

BC Hydro is regulated by an independent body, the B.C. Utilities Commission (BCUC), which is responsible for ensuring that BC Hydro operates in the best interests of its customers while providing a fair return to the shareholder, the Province of British Columbia.

### Energy Plan for BC

BC Hydro operates within the context of public policy. In November 2002, the government released its energy policy, *Energy for Our Future: A Plan for B.C.* The plan has four cornerstones: low electricity rates and public ownership of BC Hydro; secure, reliable supply; more private sector opportunities; and

environmental responsibility and no nuclear power sources. The Energy Plan contains 14 direct policy action items for BC Hydro. Twelve have been completed, one is subject to regulatory approval, and work on the final one is underway. The policy action regarding new rate structures to encourage energy efficiency and allow supplier choice for large customers was the subject of a negotiated settlement in July 2005 and regulatory approval is pending.

### Overview of the British Columbia Electricity Sector

British Columbia’s electricity sector has developed around the traditional vertically integrated utility model. Approximately 90 per cent of BC Hydro’s electricity produced in the province is generated at hydroelectric plants. This combination of industry structure and renewable fuel source has resulted in a reliable, low-cost and flexible electrical system. Today, that system continues to provide some of the lowest electricity rates in North America.

Policy Action Items	Status
1 Establish a Heritage Contract	√
2 Ratepayers benefit from trade (up to \$200M)	√
3 Ensure public ownership of generation, transmission & distribution	√
4 Implement BC Hydro outsourcing of non-core services	√
5 B.C. Utilities Commission regulation of BC Hydro rates	√
6 Review of Vancouver Island Generation Project	√
7 Complete 2004 Integrated Electricity Plan	√
8 Separate distribution and generation lines of business	√
9 New supply acquired on a least-cost basis	√
13 Private sector for new supply & BC Hydro improves existing plants	√
14 Choice of electricity supplier by large customers	approval pending
15 Formation of B.C. Transmission Corporation	√
20 Fifty per cent clean energy target from new energy supply	√
21 New rate structures to encourage energy efficiency	approval pending

BC Hydro is the largest electric utility in the province, serving 94 per cent of the population. There are other smaller municipally or investor-owned utilities around the province that deliver electricity to local customers. In addition, the role of private producers in power generation is growing. Currently, 36 independent power producers (IPPs) provide almost 7,000 GWh of energy to BC Hydro's system. A further 23 IPPs are contracted to bring on over 1,800 GWh of supply in the future. Of the total 59 contracts, 26 are for green energy, providing over 2,700 GWh.

The provincial Energy Plan provides a framework for the evolution of the sector. It secured public ownership of BC Hydro's core generation, distribution and transmission assets. To maintain low rates, the plan designates BC Hydro's integrated dams, hydroelectric plants and some thermal plants as heritage assets.

The Energy Plan also introduced policies to encourage increased private sector involvement in developing new electricity supplies. The plan directs utilities, including BC Hydro, to acquire new resources on a least-cost basis. With a multi-goal decision making approach to ensure least-cost power over the long term, BC Hydro also includes environmental and social impact costs. BC Hydro has called and will continue to call on the private sector to build new, competitive power generation in the province. The plan also encourages BC Hydro and other electricity distributors to supply 50 per cent of all new electricity through clean resources such as wind, small hydro and co-generation projects. This also diversifies the energy fuel sources for British Columbia. Demand-side management programs, such as BC Hydro's Power Smart conservation and energy efficiency programs, will also play a significant role.

In addition, the Energy Plan specified that an independent Crown corporation be established to manage, maintain and operate BC Hydro's transmission system. While BC Hydro continues

**What is a gigawatt hour?**

A gigawatt hour (GWh) is a measure of energy equivalent to one million kilowatt hours (kWh).

BC Hydro typically generates between 43,000 and 54,000 GWh annually. One GWh is the amount of electricity to serve 100 residential customers for one year.

**Integrated Energy Planning**

BC Hydro prepares for future domestic electricity demand through long-term integrated planning and describes its plan in the 20-year Integrated Electricity Plan (IEP). The IEP is prepared with input from customers, communities, the public and First Nations and identifies portfolios of options to meet future demand for electricity. These new resources are acquired through competitive processes. Acquisition and investment decisions coming out of the IEP are reviewed by the BCUC in public hearings.

to own the transmission assets, the British Columbia Transmission Corporation (BCTC) ensures non-discriminatory open access to the transmission system for all electricity producers, supporting the growth of private sector involvement in the electricity sector and increasing electricity trade opportunities. As with BC Hydro, BCTC is regulated by the British Columbia Utilities Commission (BCUC). With open access to the transmission system, private power producers can also sell directly into regional wholesale markets and directly to large electricity customers.

**Description of BC Hydro**

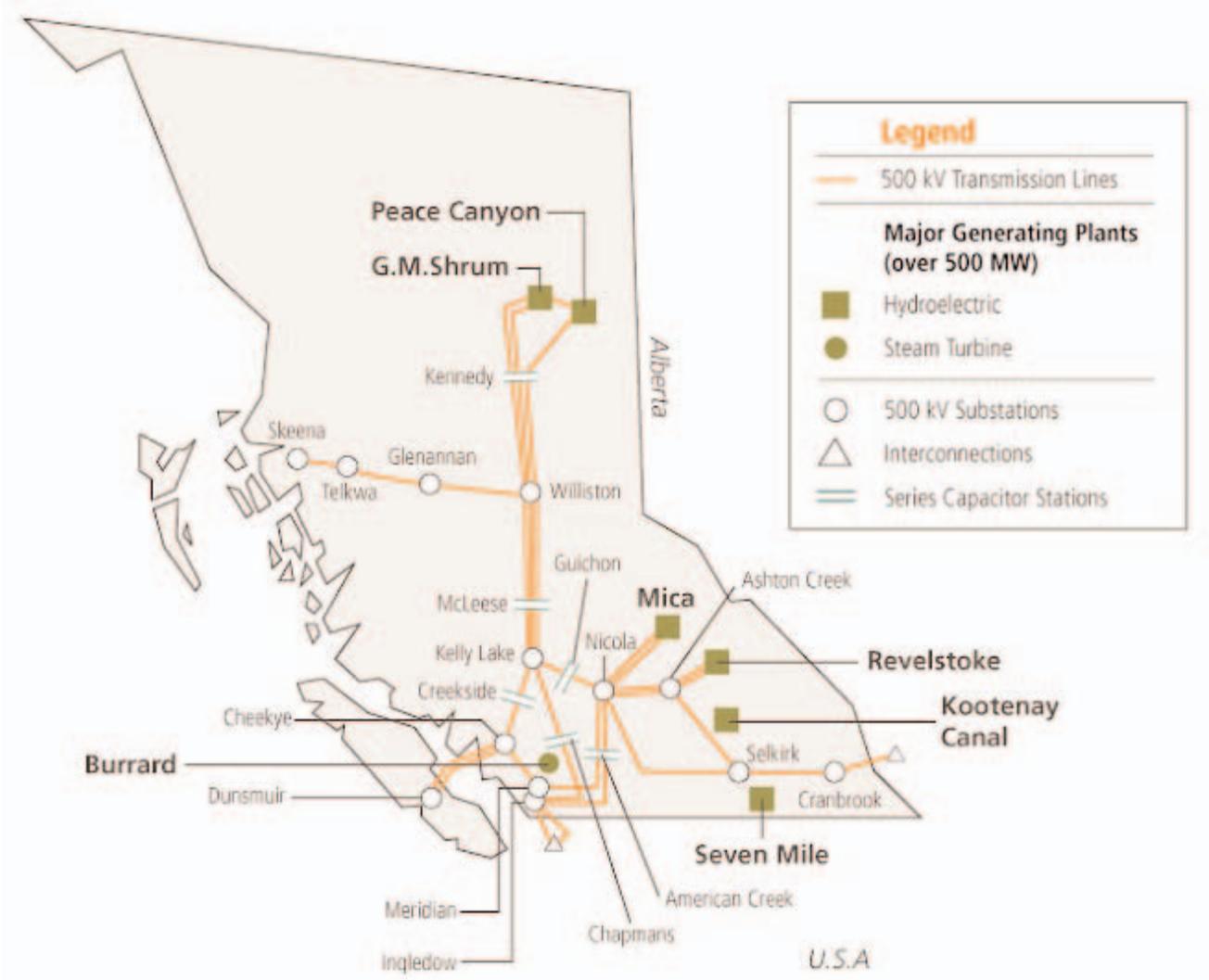
BC Hydro has been an important part of British Columbia’s historical development. It is one of the largest electric utilities in Canada, and one of North America’s leading providers of clean, renewable hydro power.

Approximately 4,100 employees are responsible for reliably generating and delivering electricity, and developing products and services for more than 1.6 million customers in B.C.

BC Hydro owns 31 hydroelectric facilities, which provide about 90 per cent of the total electricity BC Hydro generates each year. The

majority of the hydroelectricity comes from the Peace and Columbia River systems. BC Hydro also owns three thermal power plants, and supplements domestically produced electricity with market purchases. Electricity is delivered to customers through an interconnected system of over 18,000 kilometres of transmission lines and 55,000 kilometres of distribution lines. Customer service and other non-core administrative functions are delivered through contracts with Accenture Business Service for Utilities.

**500kV Transmission System and Major Generating Stations**



## BC Hydro Customer Groups & Revenues by Groupings

	Customers		Revenues (millions)	
Residential	1,484,339	89%	\$1016	27%
Commercial & Light Industrial	187,313	11%	\$967	26%
Large industrial	138	-	\$573	16%
Other	3,265	-	\$80	2%
Miscellaneous	-	-	\$60	2%
Electricity Trade	203	-	\$1021	27%
<b>Total</b>	<b>1,675,258</b>	<b>100%</b>	<b>\$3,725</b>	<b>100%</b>

All numbers are as of March 31, 2005.

### Customers

BC Hydro operations serve a diverse domestic customer base consisting of residential, commercial and industrial customers. About 89 per cent of customers are residential, accounting for about 27 per cent of BC Hydro's total revenues. About 11 per cent of customers are commercial or light industrial, accounting for almost 26 per cent of total revenues. Finally, large industrial customers make up less than one per cent of customers, but account for 16 per cent of total revenues.

### Demand Growth

Demand on BC Hydro's electricity system grows each year. From March 2004 to March 2005, BC Hydro connected about 22,000 new customers to its system. BC Hydro's latest demand forecast (March 2005) shows an increase of 1.5 per cent growth per year over

the next 20 years. The growth rate is less, at 1.4 per cent growth per year, when Power Smart demand-side management programs are taken into consideration.

### Financial Performance

Financial performance focuses on the financial return to BC Hydro's shareholder and the electricity rates paid by customers. The economic value BC Hydro generates for the province directly benefits customers and all British Columbians. Ranked third for revenue generation among all corporations in the province, part of the value BC Hydro provides to the province is financial. In fiscal 2005 BC Hydro provided \$716 million. These funds go towards schools, hospitals and road-building in British Columbia. BC Hydro pays about half of this amount through water rental fees (royalties paid for the use of provincial water

### Demand Growth With and Without Power Smart

	Actuals 2004/05	Without Power Smart Forecast 2024/25	With Power Smart * Forecast 2024/25
Total Sales			
Electricity Sales	51,205 GWh	69,000, GWh	66,600 GWh
Growth Rate		1.5% per year	1.4% per year

\* This refers to incremental Power Smart impacts beyond existing Power Smart programs.

resources), provincial and municipal taxes and grants-in-lieu of taxes paid to municipalities. In addition, BC Hydro pays an annual dividend to the provincial government.

Electricity trade is important to the province. In fiscal 2005, trade activity accounted for \$1021 million of revenues, making up 27 per cent of BC Hydro’s total revenues. BC Hydro is able to benefit from trade because of the flexibility of its large, integrated hydroelectric system. This flexibility, and the ability to store water in reservoirs, allows BC Hydro to react according to market demands. BC Hydro can buy electricity on the market when prices are lower and sell electricity when prices are higher. This enables BC Hydro to earn a profit through trade even when, as in recent years, inflows have been below average and BC Hydro has been a net electricity importer. Profit from electricity trade helps keep rates low for domestic customers.

**Cost Drivers**

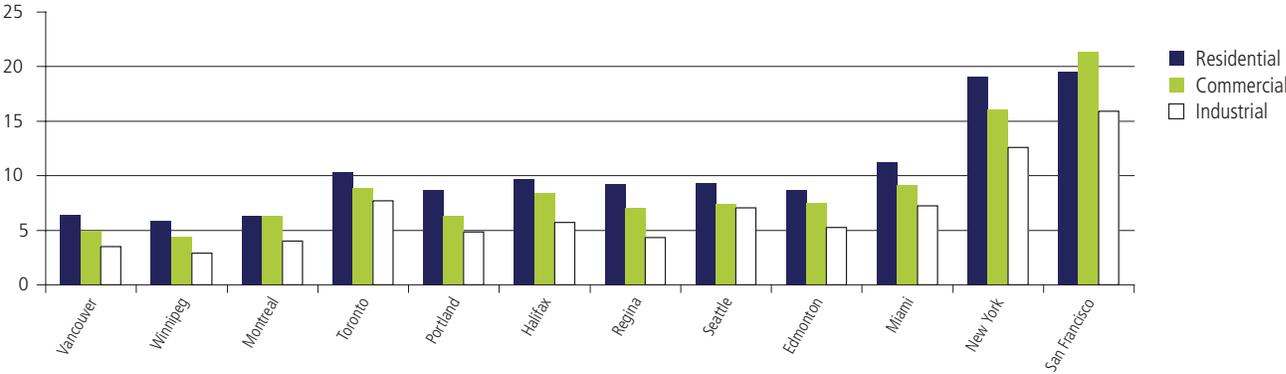
BC Hydro’s most significant costs include the cost of energy and the capital investment costs of maintaining and expanding assets. The single largest cost is the cost of energy –

the cost of market and Independent Power Producer energy purchases, natural gas costs, water rental fees, and transmission costs – to meet customer demand. On average, the cost of energy makes up about 50 per cent of BC Hydro’s overall costs. Pressure on this cost driver will come from new energy supply, which is more expensive than the heritage assets. BC Hydro’s amortization costs and finance charges to maintain and expand assets add up to about 30 per cent of all costs. The main pressure on this cost driver are BC Hydro’s aging assets. Labour costs, which are primarily included in operations, maintenance and administration expenses, make up between 15 and 20 per cent of overall costs. Gaining efficiency in operations and effectively managing all cost drivers continues to be a key focus for BC Hydro, and will ensure that the company remains among the lowest-cost operators in North America.

**Rates and Regulation**

BC Hydro rates are set through a cost-based framework. BC Hydro submits a revenue requirement application to the British Columbia Utilities Commission (BCUC), which provides a forecast of the revenues and

**Comparison of Average Rates**  
*Canadian Cents per Kilowatt Hour*



Note: The source for all data, except for Vancouver, is “Hydro-Quebec: Comparison of Electricity Prices in Major North American Cities.” (April 1, 2004). The rates for Vancouver have been recalculated based on the BCUC November 2004 BC Hydro Revenue Requirement Decision, which granted a 4.85% rate increase effective April 1, 2004.

expenses that BC Hydro is expecting to incur over a particular period. It also indicates the revenue BC Hydro requires to be recovered through the rates it charges domestic customers in order to pay expenses and earn an allowed return on equity. The BCUC review process includes public proceedings before the BCUC makes a final determination on the application. BC Hydro will endeavour to involve stakeholders and First Nations more in its business planning and regulatory processes to ensure the best decisions are made for all British Columbians.

In December 2003, BC Hydro submitted its first revenue requirement application since 1994. After review by the BCUC, BC Hydro was granted a 4.85 per cent rate increase, effective from April 1, 2004 to March 31, 2006. Even with the new rate increase, BC Hydro continues to offer some of the lowest electricity rates in North America.

**Heritage Assets and Trade Revenue**

Drawing on existing heritage assets and the revenue generated by trade activity has helped to keep rates low for customers. Through its new purpose to provide reliable power, at low cost, for generations, BC Hydro will continue to optimize the performance of its heritage assets, competitively seek new sources of electricity from Independent Power Producers and continue with energy trading activity.



The original Stave Falls powerplant, built in stages between 1910 and 1925, was replaced with a new two-unit, 90 MW powerplant that officially began operation on May 5, 2000. The old powerhouse is now a Visitor Centre where the public can learn about electricity production. In May 2004, the old powerhouse was awarded the National Heritage Site Designation from Parks Canada.

### 3. Purpose and Long Term Goals

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BC Hydro represents a vital public trust for the people of British Columbia. As a result, British Columbians have a deep and strong connection to BC Hydro – a connection that is arguably greater than their connection to any other Crown corporation. The province’s history is linked to its power developments and large, integrated, hydroelectric system, and British Columbians continue to benefit from these today. As the steward of B.C.’s heritage assets, BC Hydro must operate in a manner that preserves this heritage, builds on the province’s competitive advantage and leaves a positive, publically-owned legacy for future generations.

All British Columbians have a role to play in BC Hydro’s future legacy. BC Hydro is more clearly defining its leadership role and how best to engage stakeholders – customers, employees, the public, First Nations, the regulator and shareholder. These groups together must agree on making wise energy choices today to build a clean energy future. If we choose to use energy more wisely and efficiently and develop the energy resources that are right today and for our future, we can leave a lasting legacy.

A new purpose: to provide reliable power, at low cost, for generations, redefines BC Hydro’s previous vision and mission, and enables the company to connect its past operations to the present and the future.

#### Purpose

BC Hydro has defined each element of the purpose.

#### *Reliable power, at low cost, for generations*

**Reliability** is the foundation of BC Hydro’s commitment to its customers. BC Hydro will have the energy available and deliver it when it is needed. With overall system availability at 99.995 per cent for fiscal 2005, BC Hydro’s aim is to continue to achieve this strong performance and do better. While this will be more

challenging in some regions, where mountainous terrain or weather can impact reliability, BC Hydro will target maintenance and capital spending in those regions where reliability most needs to be improved. In addition, because of different customer needs, BC Hydro is investigating customer-driven reliability to provide more choice for customers.

The reliability goal is also about making British Columbia self-sufficient in electricity to meet domestic demands. BC Hydro’s goal is to decrease reliance on market purchases and its price volatility. BC Hydro will look to “made in B.C.” solutions for a secure energy future.

**Low Cost** operations are at the forefront of business success. By being fiscally prudent, investing wisely and making the right capital decisions, and always considering environmental and social costs, BC Hydro will maintain a legacy of low-cost operations over the long term. Even with its first rate increase in 10 years, BC Hydro customers pay some of the lowest electricity rates in North America. B.C.’s heritage assets will be preserved and trade activity will continue, and the benefits will be directly passed on to customers and all British Columbians over the long term.

Quality of service will not be sacrificed. A competitive mix of generation resources and conservation programs, as well as optimizing the value of BC Hydro’s heritage assets, will ensure that BC Hydro continues to provide reliable, low-cost power. BC Hydro will deliver an energy resource portfolio that reflects the needs of its customers and ensures long-term value.

**For Generations** confirms BC Hydro’s commitment to sustainability in managing its business. This involves thinking for the long term in all of our decisions, balancing trade-offs along the environmental, social and financial bottom lines. It will ensure that reliable, low-cost power will be available to British Columbians today as well as in the future.

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### Long-Term Goals

Meeting our responsibilities to our customers and employees, and ensuring positive social, environmental and financial performance, as well as enabling future opportunities, are bold long-term goals. They are strategically aligned to BC Hydro's purpose to guide business decisions and operations in the years to come. Taken collectively, the 15 long-term goals will guide BC Hydro in meeting its purpose to provide reliable power, at low cost, for generations.

BC Hydro will partner with customers, build relationships of mutual respect with First Nations and stakeholders, and act within public policy and the regulatory environment to successfully meet these goals.

### Customer

The customer is of primary importance to BC Hydro. BC Hydro aims to operate and provide a service that satisfies customers, and provides remote communities with service on an equitable basis.

To do this, BC Hydro will recognize and respond to customers' needs collectively as well as to those of individual customer groups. Each has different reliability needs. For example, certain industrial operations cannot tolerate power outages of any duration and may be prepared to pay a premium for higher levels of reliability. BC Hydro will give customers greater choice for supply, and target capital and maintenance investments where they are needed most.

British Columbians have been well served by a large and integrated domestic electricity system. To build on this legacy of self-sufficiency, BC Hydro will continue to add domestic resources to satisfy 100 per cent of the province's power needs. Energy self-sufficiency will minimize supply price volatility and open up new economic development opportunities for B.C.'s Independent Power Producers. At the same time, in the shorter term, BC Hydro will continue to take advantage of external

power market volatility to make market purchases when it is more economic.

### Employees

BC Hydro will need to align the organization strategically to deliver on its purpose over the long term. BC Hydro seeks to build both a skilled workforce that mirrors the diversity of the province and a culture that is performance based and service oriented. All employees will clearly understand how their work individually and as a team contributes to BC Hydro's business success.

In addition, to meet its long-term goals, BC Hydro must provide a safe workplace and ensure safety for the public. This will be achieved through injury prevention and implementing the right practices and policies.

### Social

BC Hydro will continue to be a socially responsible company and a leader over the next 20 years. It is very important to build strong working relationships with First Nations, based on mutual respect. BC Hydro will also listen, engage and respond to the needs of stakeholders – from employees to the provincial government, to business partners, to customers, giving the company the trust and permission to make decisions in the best interest of all British Columbians.

BC Hydro will engage and partner with suppliers who take a similar triple-bottom-line approach to ensure that all aspects of BC Hydro's operations create a sustainable energy future.

### Environment

Protecting the environment today will build a positive future for tomorrow. BC Hydro will seek to better understand the environmental footprint of its operations and run the business in a way that produces no net incremental environmental impacts. Where impacts are unavoidable, BC Hydro is committed to developing positive projects, such as investments to improve fish stocks, to offset these impacts.

BC Hydro, in partnerships with stakeholders and First Nations groups, will foster a culture of conservation and energy efficiency and will engage British Columbians in making wise energy choices. Ensuring that British Columbians use less energy will mean that fewer new resources need to be brought online and will minimize the environmental footprint.

**Financial**

BC Hydro will continue to have among the lowest electricity rates in North America. It will also continue to be an important contributor to the provincial economy. This goal is challenging, considering the investments required to upgrade and replace aging infrastructure, bring on new energy supplies and proactively address external factors, such as market forces and environmental and social impacts. BC Hydro will be prudent in its planning and invest wisely to ensure that it continues to be a more efficient, low-cost operation over the long term.

**Enablers**

BC Hydro, through Powerex Corp, will act on western market opportunities to continue providing the trade revenues and profits that help to keep rates low, and allow the provincial government to invest in services that British Columbians rely on most.

Technological innovation and research and development will help to support BC Hydro in achieving the long-term goals and improving BC Hydro’s triple-bottom-line performance.

These 15 long-term goals provide the picture of the low-cost, sustainable and socially responsible company BC Hydro will be in 20 years. BC Hydro will work with British Columbians to gain their support and to help meet its purpose to provide reliable power, at low cost, for generations.

# BC Hydro's Long-Term Goals

CATEGORY	20-YEAR GOAL
<b>CUSTOMER</b>	
1. Reliability (Customer)	<ul style="list-style-type: none"> <li>Best-in-class reliability by customer segment</li> </ul>
2. Reliability (Supply)	<ul style="list-style-type: none"> <li>Electricity self-sufficiency (energy and capacity) in B.C. for meeting all domestic needs</li> </ul>
3. Customer Satisfaction	<ul style="list-style-type: none"> <li>To lead other companies in offering extraordinary value and service</li> </ul>
4. Remote Community Electrification	<ul style="list-style-type: none"> <li>To provide appropriate electric service to all remote communities on an equitable basis</li> </ul>
<b>EMPLOYEES</b>	
5. Workplace	<ul style="list-style-type: none"> <li>Among the Top 10 Best Employers in Canada</li> </ul>
6. Teamwork	<ul style="list-style-type: none"> <li>All employees working collaboratively on one team to the benefit of all stakeholders</li> </ul>
7. Safety	<ul style="list-style-type: none"> <li>To provide the safest work environment compared with the best performers in any industry</li> <li>None of our employees will experience a serious safety injury</li> </ul>
<b>SOCIAL</b>	
8. First Nations	<ul style="list-style-type: none"> <li>Improve relationships built on mutual respect and that appropriately reflect the interests of First Nations</li> </ul>
9. Stakeholder Engagement	<ul style="list-style-type: none"> <li>To be the most respected company in B.C.</li> </ul>
10. Suppliers	<ul style="list-style-type: none"> <li>100% of suppliers have demonstrated values congruent with those of BC Hydro</li> </ul>
<b>ENVIRONMENT</b>	
11. Environmental Impact	<ul style="list-style-type: none"> <li>No net incremental environmental impact</li> </ul>
12. Electricity Conservation and Efficiency	<ul style="list-style-type: none"> <li>Develop and foster a conservation culture in B.C. that leads to customers choosing to make a dramatic and permanent reduction in electricity intensity</li> </ul>
<b>FINANCIAL</b>	
13. Financial Targets	<ul style="list-style-type: none"> <li>Maintain existing position of having costs among the lowest in North America</li> <li>Deliver 100% forecast net income on an annual basis (after adjustments for uncontrollable factors like water volatility)</li> </ul>
<b>ENABLERS</b>	
14. Western Opportunities	<ul style="list-style-type: none"> <li>To increase profits in the broader western market by leveraging our system and trading capabilities and implementing long-term investment and procurement strategies</li> </ul>
15. Innovation and Technology	<ul style="list-style-type: none"> <li>To be an industry leader in innovation and use of new technology, directly supporting and advancing BC Hydro's long-term goals.</li> </ul>

# 4. Risks

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BC Hydro faces risks specific to its business that could significantly impact its ability to achieve the short- and long-term goals of this Service Plan. While risks cannot be eliminated, BC Hydro’s strategies aim to minimize or mitigate them.

## BC Hydro’s Approach to Managing Risk

BC Hydro has a specific risk management process that is applied to the day-to-day business activities as well as to specific projects and initiatives.

- Risk identification occurs through the business planning or project review processes. BC Hydro is conducting a more formal risk assessment to help with planning and resource allocation decisions.
- Risk analysis focuses on determining the likelihood and consequences, including financial and non-financial impacts, of a particular risk. BC Hydro is improving its analytical tools to enhance this capability in several critical areas, including energy cost or commodity risk for domestic supply.
- BC Hydro makes decisions on an ongoing basis and on specific business cases to accept, reduce or transfer risks to another party (such as with insurance). BC Hydro seeks to understand the acceptable risk level before determining the best strategy.
- Ongoing risk monitoring and reporting at the operational, executive and board levels are critical to identifying corrective actions.

In April 2004 BC Hydro appointed a Chief Risk Officer to support the implementation of a risk management program in two key areas:

- **Manager Accountability:** To ensure managers have the necessary capabilities, such as people, systems, processes, reports, policies and procedures, to manage areas of risk for which they are accountable. In addition, we will ensure decision-making incorporates a rigorous review of risks.

- **Company-Wide Coordination:** BC Hydro’s Corporate Risk Management Committee was established in 1998 and continues to facilitate an integrated view of risk management and ensure an adequate review of the risk impacts of decisions.

BC Hydro’s Board of Directors plays a key role in the risk management process. The Board is charged with understanding the risks being taken by BC Hydro and ensuring they are appropriately managed. To help support them, BC Hydro conducts a risk-based internal audit program and external reviews by industry experts to ensure that BC Hydro’s risk capability is consistent with industry best practices.

## Key Risks BC Hydro Faces

Risks are divided into four outcomes: employee and public safety, reliability, financial performance and environmental and social performance.

### Employee and Public Safety

Safety risks to the public can occur due to the multiple uses of water for electricity generation, recreation and waterways. Risks can also result from potential contact with transmission and distribution equipment located in communities. To minimize the risk, BC Hydro relies on design, construction and operating standards and practices, consultation with other agencies and stakeholder groups, and public education.

The potential impacts to BC Hydro’s generation facilities as a result of catastrophic weather events and earthquakes are managed to minimize risk to public safety. BC Hydro also prepares and keeps current comprehensive emergency response plans to limit injury and loss of life and to restore electric service.

Many of BC Hydro’s employees face significant risk of serious injury or death by the nature of their jobs. BC Hydro’s work safety plans include injury prevention, providing a safe

workplace and training, and by making all employees responsible for health and safety.

### Reliability

The most significant risk to the reliability of BC Hydro’s distribution system is equipment failure. This can be due to weather impacts, vegetation growth, wildlife, and the aging of BC Hydro’s assets. BC Hydro mitigates the likelihood and consequence of such impacts through effective design, construction, operations, maintenance and response. BC Hydro manages these risks by balancing customers’ expectations and cost considerations.

Reliability risks can result from a lack of available generation supply and associated transmission capacity to meet customer demand. BC Hydro manages these risks through long-term planning and by relying on a diverse supply of energy options.

### Financial Performance

In meeting its financial performance targets, BC Hydro faces risks related to energy costs, interest and foreign exchange rates, pension and trading.

### Energy Cost

Energy cost risk, or commodity risk as it is often referred to, is the most significant financial risk to BC Hydro. It can result from changing market prices for electricity and natural gas. It can also result when BC Hydro unexpectedly needs to purchase electricity from the markets due to increased electricity demand in B.C. or lower-

than-expected water levels. Over the past five years, BC Hydro has experienced below average water inflows and has relied more heavily on volatile energy trading markets. BC Hydro manages energy cost risk through its flexible hydro-electric system, which allows water to be stored in large reservoirs and used when it is most economic. BC Hydro also hedges the cost of imported power and natural gas.

Weather forecasts suggest that changes in snow and rainfall patterns may occur due to climate change. BC Hydro is looking at how to assess the likelihood and magnitude of this risk.

### Interest & Foreign Exchange Rates

Changes in interest and foreign exchange rates can significantly impact BC Hydro’s finance charges. BC Hydro uses several debt-management strategies to minimize the impact, including limiting the number of variable interest rates and foreign exchange currency agreements. Interest and foreign exchange rate changes can also influence the performance and cost of BC Hydro’s employee benefit and pension plans.

BC Hydro is also exposed to exchange rate risk through the cost of U.S. dollar electricity purchases, gains from U.S. trading activity and U.S. dollar capital equipment purchases. To minimize the impact, BC Hydro manages its net foreign exchange position within strict limits.

### Energy Trading

BC Hydro’s energy trading subsidiary (Powerex) is exposed to the risk of variable

The most significant risk to the reliability of BC Hydro’s distribution system is equipment failure. The company mitigates the likelihood and consequences of such impacts through effective design, construction, operations, maintenance and response.



market prices and to the risk of counterparties who might not meet their obligations. Powerex manages these risks by operating within a conservative risk profile. This profile is defined through limits that are regularly reviewed by both the Powerex and BC Hydro Boards of Directors. This means that Powerex focuses mainly on shorter-term trading positions, backs forward commitments with physical supply, and operates within conservative credit limits. When Powerex does take on longer-term positions, these are closely monitored in the context of the overall energy trading portfolio and the positions are covered within a short period.

Powerex is exposed to the risk of litigation, such as the potential liabilities from the California power crisis. Powerex follows Standards of Conduct and the Electric Power Supply Association’s Code of Ethics and Sound Trading Practices to manage risk associated with litigation.

**Regulatory Risk**

BC Hydro is permitted an opportunity to earn an allowed return on equity. Tariff rates are set for a specific year(s) based upon BC Hydro’s consolidated cost and equity forecast. In general the risk (difference between forecast and actual) associated with all uncontrollable costs is covered through regulatory deferral accounts. The major cost components susceptible to variation included in the regulatory deferral accounts are water inflow variation, energy price including thermal fuel costs variation, unplanned capital costs on heritage resources, trade income and foreign exchange. BC Hydro’s risk includes those associated with capital assets, domestic load volumes, maintenance costs, operations and administration costs, and interest expense.

**Environmental and Social Performance**

BC Hydro’s environmental responsibility policy states that BC Hydro will meet or exceed environmental regulations defined by legislation,

regulation, government directives and guidelines, as well as its commitments and agreements. Even if there is no environmental or social regulation, BC Hydro can face risks. These risks are managed through voluntary activities, such as the Water Use Plans. Voluntary action is done in the prudent best interests of the company, with a view to managing long-term risk and for cost controls.

Areas where BC Hydro is exposed to the risk of non-compliance with environmental regulations include the release of hazardous materials into the environment, endangerment of wildlife and their habitats, or damage to heritage sites where there is evidence of historic human occupation. These risks are managed through environmental management system and risk mitigation strategies.

BC Hydro is also exposed to legislation regulating greenhouse gas (GHG) emissions pursuant to expected federal regulation dictated by the Kyoto Protocol. BC Hydro programs such as Power Smart and Resource Smart, a focus on working with provincial partners to create a culture of conservation and a commitment to meet the province-wide goal of acquiring 50 per cent of new supply from clean sources will help to mitigate the risk.

BC Hydro’s Board and Executive Management Team have recently approved a Corporate Social Responsibility Policy. As the organization builds upon existing practices in this area, emerging risks will become evident.

First Nations past grievances, land claims, service reliability and regulatory processes pose risks to BC Hydro. BC Hydro manages these risks through a comprehensive Aboriginal Relations program. The long-term goal of further building business relationships with First Nations is intended to go beyond addressing the impact of BC Hydro facilities on First Nations and reducing the associated financial, legal and operating risks, to having a more proactive, mutually beneficial approach to working together.

# 5. Organizational Structure

BC Hydro has organized itself internally to meet the challenges of the electricity sector. With a newly defined purpose, BC Hydro will create a performance-based, service-oriented culture and work with employees to increase accountability, diversity and responsiveness. Employees will continue to “keep the lights on”, help manage costs, eliminate waste, and enable BC Hydro to operate as an efficient, low-cost business over the long term.

### Core Values

BC Hydro holds four core values as essential to its success: **Accountability, Integrity, Service and Teamwork**. The ability to model and live these four values through employees and business partners with customers and stakeholders are what will contribute to BC Hydro’s success. Employee performance is measured and rewarded in accordance with these values.

**Accountability** means that BC Hydro takes responsibility for its actions. Each employee is encouraged to take appropriate risks and seek to remedy problems and learn from mistakes.

**Integrity** means being fair and honest, open and straightforward. Employees will ensure their actions match their words, strive to exceed legal standards and social expectations, and treat colleagues, customers and stakeholders, First Nations and government with respect.

**Service** means seeking solutions and building relationships. BC Hydro strives to be worthy of the trust of colleagues, customers, stakeholders, First Nations and government. The company seeks to understand others, be easy to do business with for both internal and external customers, and be caring and helpful, flexible and responsive, and efficient and effective. BC Hydro is proud of what it does and what it has done.



BC Hydro employees work together and share ideas, insights and information to the benefit of all stakeholders.

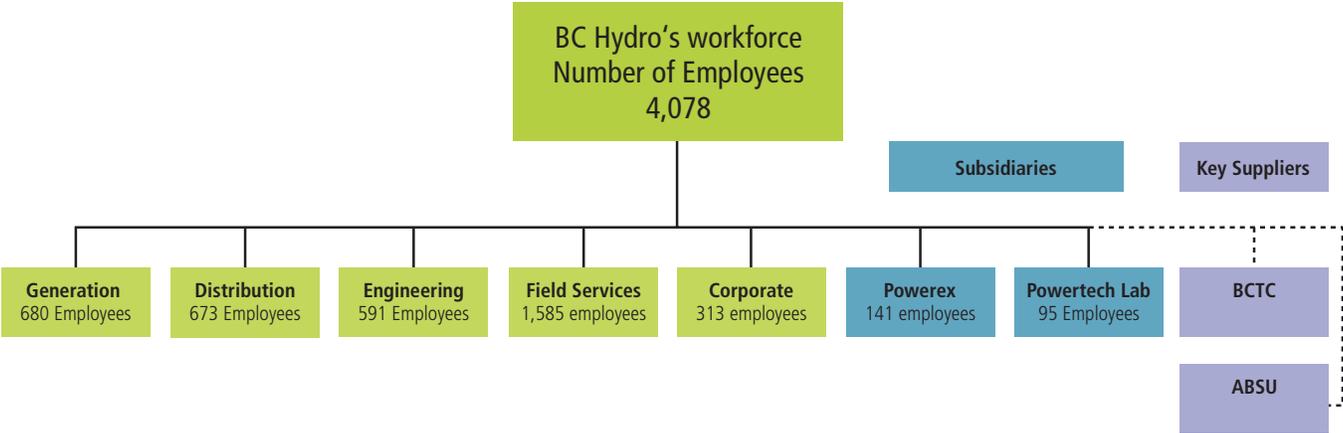
**Teamwork** means working together to achieve results. BC Hydro employees proactively share ideas, insights and information, and help when others need help. The company facilitates both team and individual success and encourages internal co-operation and external collaboration. BC Hydro recognizes each individual’s contribution.

### Lines of Business, Subsidiaries and Key Suppliers

In April 2002, consistent with industry trends and best practices, BC Hydro decided to move to a Lines of Business structure within the company. This enabled BC Hydro to focus resources on distinct customer groups and meet their needs more effectively. It also enabled BC Hydro to focus on its operations.

BC Hydro has four Lines of Business and a corporate group as well as two key suppliers. Following is a map of these groups with a breakdown of where BC Hydro’s employees work.

**Lines of Business, Subsidiaries and Key Suppliers**



Generation manages and operates BC Hydro’s generation assets to optimize their value for the benefit of the company, customers and the shareholder. Generation manages the investment strategies related to generation assets, Water Use Planning and First Nations relations.

Distribution acquires energy through demand-side and supply-side options, and delivers it safely and reliably to customers. Distribution manages overhead, underground and submarine distribution lines, poles and transformers.

Engineering provides project management, maintenance, emergency response, design, environmental support, contracts and construction management services to BC Hydro, British Columbia Transmission Corporation (BCTC) and to some external clients. Field Services provides services such as emergency response and restoration, and maintenance services, to BC Hydro and BCTC.

Corporate services include the office of the Chief Financial Officer (finance and regulatory functions); Corporate Groups (legal, corporate communications, properties and human resources); Organizational Development, Stakeholder Engagement and Sustainability; Business Partnerships; and Risk Management. These groups provide services to the overall organization.

**Subsidiaries**

PowereX, the energy marketing arm of BC Hydro, buys electricity and natural gas on the market, from B.C.’s private power producers and self-generators, and sells these products and services. It is one of the largest physical traders of electricity in western North America.

Powertech Labs Inc. is a research and engineering technology company that tests, consults and researches new and innovative technology. It serves BC Hydro and the electric and natural gas industries, their customers and suppliers. Powertech has world-class expertise in high-pressure hydrogen storage and fuelling.

**Key Suppliers**

British Columbia Transmission Corporation (BCTC) is one of two key suppliers to BC Hydro. Established in May 2003, BCTC is a Crown corporation whose mandate and functions are set out in the Transmission Corporation Act to manage, maintain and operate the transmission system. BCTC and BC Hydro work together through service level agreements. BCTC provides its own Service Plan.

Accenture Business Services for Utilities (ABSU), a BC company based in Vancouver, is the other key supplier. Established in April 2003 through a joint-venture partnership, ABSU provides services in customer care, human resources, building and office operations, payroll and accounts payable, financial systems and purchasing. The agreement between BC Hydro and ABSU is for 10 years and is expected to save BC Hydro and its customers \$250 million over the life of the agreement.

**Governance**

Our *Shareholder’s Letter of Expectations* describes the relationship between BC Hydro and the provincial government. The government and BC Hydro review the letter annually and update it as required.

BC Hydro is responsible to the Minister of Energy, Mines and Petroleum Resources through a 11-member Board of Directors. The government appoints the board to oversee business affairs, supervise management and ensure that all major issues affecting BC Hydro are addressed. The board delegates responsibility for the day-to-day leadership and management to the Chief Executive Officer.

BC Hydro’s Board of Directors operates on the principle of continuous improvement and annually assesses its own practices, policies and competencies to ensure that the board as a whole continues to bring the appropriate balance of skills and experience to its policy oversight role.

The Director and Employee Code of Conduct guides the conduct for BC Hydro board members, employees, suppliers, consultants and contractors and suppliers. The code is available on BC Hydro’s website at [www.bchydro.com](http://www.bchydro.com).

The Board currently has three standing committees:

- **Audit and Risk Management Committee:** to oversee the audit process, financial reporting, internal audit and corporate control systems, pension plans and various facets of risk management.
- **Corporate Governance Committee:** to oversee BC Hydro’s corporate governance to ensure that BC Hydro’s business and affairs are carried out, directed and managed to meet its goals.
- **Human Resources Committee:** to assist the Board of Directors in fulfilling its obligations on safety, senior management human resources, human resource processes, and compensation.

An Executive Committee holds the full power of the Board but only meets in exceptional circumstances when a quorum of the full board is not available.

The Peace River/Williston Reservoir Advisory Committee, chaired by a board member and made up of local community representatives, reports to the Board of Directors. It provides advice and facilitates two-way communication between the Peace/Williston community and BC Hydro.

In addition, BC Hydro’s board is responsible for the performance of subsidiaries of BC Hydro, including Powerex and Powertech Labs Inc.

# 6. Business Environment

BC Hydro’s long-term planning considers both external and internal issues and trends that could affect BC Hydro’s business.

## BC Hydro’s External Context

### Western North American Energy Sector Developments and Opportunities

Energy prices in the Western North American energy sector have become increasingly volatile over the past several years. BC Hydro’s flexible hydroelectric system allows water storage in large reservoirs and enables the company, through its power marketing subsidiary Powerex, to minimize the negative effects and profit from this volatility.

Powerex has also expanded its customer base and increased the number of the products and services it offers. The revenues and profits generated from this activity contribute to BC Hydro’s total net income and help to keep electricity rates low for domestic customers. Transmission constraints between British Columbia and markets in Alberta and the western United States could impede BC Hydro’s ability to grow trade opportunities. Political and regulatory collaboration between these jurisdictions will be necessary to address this potential issue.

### Labour Outlook

British Columbia has the oldest workforce in Canada. By 2010, the number of people in the province’s labour force aged 55 to 64 will be greater than those aged 15 to 24. Infrastructure projects associated with the 2010 Olympic Games will likely intensify the demand for skilled workers. At the same time, economic recovery in the United States could result in B.C. and Canada losing workers to that country. BC Hydro will be competing for trades and skilled workers in this labour market.

### B.C. Utilities Commission

With the return to active regulation by the British Columbia Utilities Commission (BCUC), BC Hydro’s business decisions will be fully scrutinized. It is important that BC Hydro estab-

lishes and maintains a strong relationship with the regulator, and that the shareholder and customers have a clear understanding of the costs and benefits of such regulation in the short and long term.

By actively engaging stakeholders and participating in public forums, BC Hydro will consider the views of all parties interested in BC Hydro’s business. This will also help inform the BCUC.

### Technological Developments

As technology advances, BC Hydro can take advantage of new resource solutions and “smart grid” technology, as well as demand-side solutions for energy efficiency, conservation and optimizing the output of existing equipment. BC Hydro will balance these solutions with customers’ values and expectations. The value of technology developments can be enhanced in combination with solutions such as rate designs and new energy efficiency building standards.

### Environmental Issues

With the growing movement to view the earth as a global system, organizations must view their environmental impacts both in the context of their immediate business systems and the broader global system. One environmental impact of particular significance on both levels is greenhouse gas emissions (GHG). Globally, the Kyoto Protocol comes into effect in February 2005. While the precise method of implementation is unclear, BC Hydro believes that environmental issues and standards will continue to increase. The implications of the protocol have not been fully clarified by the federal government may include:

- By as early as 2007, BC Hydro may be required to reduce emissions as well as purchase greenhouse gas credits for its thermal generating plants to comply with expected federal regulations, and
- BC Hydro and B.C. independent power producers may face significant costs related to emissions and/or they may have to change their business practices to reduce emissions.

In other cases, BC Hydro may be rewarded for its industry-leading efforts on conservation programs, internal efficiencies, waste reduction programs and clean energy acquisitions.

**Government Permitting**

BC Hydro must meet government permitting requirements to operate its facilities and build new infrastructure. Regulatory requirements are increasing, challenging BC Hydro and independent power producers to meet more stringent financial, social and environmental standards. Increasing regulatory requirements can benefit British Columbians, but they can also increase costs. BC Hydro will work with the shareholder, regulator and stakeholders to meet permitting requirements, while minimizing the pressure for rate increases.

**BC Hydro’s Internal Context**

**Physical Assets**

BC Hydro’s assets are aging and many components of the system are likely nearing the end of their useful lives. This can lead to equipment failure and reduce service reliability to customers. Although the costs of maintaining assets as they age increases, the cost of replacing equipment is significantly higher. The challenge is deciding when to continue maintaining assets and when to replace them.

In the future BC Hydro will better align capital, operating and maintenance expenditures with customers’ needs. Over the next few years, BC Hydro will substantially invest to maintain the reliability and safety of its physical assets.

**Energy and Capacity Demand**

**Megawatt (MW)** = is one million watts; one thousand kilowatts. A unit commonly used to measure both capacity of generating stations and the rate at which energy can be delivered. One megawatt is the amount of energy required to meet the needs of 600 residential homes.

**Energy demand** = amount of energy used over a period

**Capacity demand** = peak usage at any given instant

**Demand-Supply Outlook**

As a public utility, BC Hydro is obligated to meet domestic customer demand. The company reviews the demand-supply outlook regularly to ensure that it can meet that responsibility. In advance of when forecast demand will exceed existing supply, BC Hydro develops plans for new electricity resources (supply and demand programs) to close the gap.

As shown in the two Demand-Supply Outlook figures on the following pages, the system will reach its peak capacity by fiscal 2014 (with Power Smart). New resources are needed to meet growing energy demand at the times when customers want it. Because the planning cycle for new supply is long, BC Hydro is planning now to meet this future demand. BC Hydro not only plans for the total amount of energy customers demand throughout the year (energy demand), but also plans the amount required to meet peak demand at any given point (capacity demand). Capacity demand typically occurs on the coldest days each year when electricity demand is highest. To meet these requirements, BC Hydro, working with its stakeholders, explores a variety of options, including contracts with independent power producers, large hydro (Site C) and energy conservation.

Figures 1 and 2 show BC Hydro’s demand-supply outlook, which compares the current forecast of energy and peak demand requirements to the capability of the existing sources of supply. The demand supply outlook would typically only compare existing and committed supply to the demand forecast and not consider planned resources. However, Figures 1 and 2 below also show the impact on the demand-supply of the programs that BC Hydro currently has underway.

BC Hydro is planning to obtain approximately 2,000 GWh of firm energy resources (in separate calls in F2006 and F2007) to meet the energy demand requirements in the 2010-2013 timeframe.

On June 17, 2005, BC Hydro announced the termination of the energy purchase agreement with Duke Point Power Limited Partnership who had been selected to provide a new source of electricity supply on Vancouver

Island from a gas-fired combined cycle plant to be located near Nanaimo. The project had been repeatedly delayed through various court appeals resulting in management’s assessment that the risks around timely completion of the project were too great to ensure the reliability of future electricity supply.

**Financial Drivers**

Increasing costs due to aging infrastructure, the need for new supply and the need to manage environmental impacts create challenges for BC Hydro in maintaining the low electricity cost advantage the province enjoys. How BC Hydro manages tradeoffs between these competing objectives will be important to its financial performance and its ability to make the required infrastructure investment. External long-term costs of environmental and social impacts need to be factored into decision-making today to ensure the right business decisions are made for the long term.

Figure 1 | System Firm Energy Demand-Supply Outlook

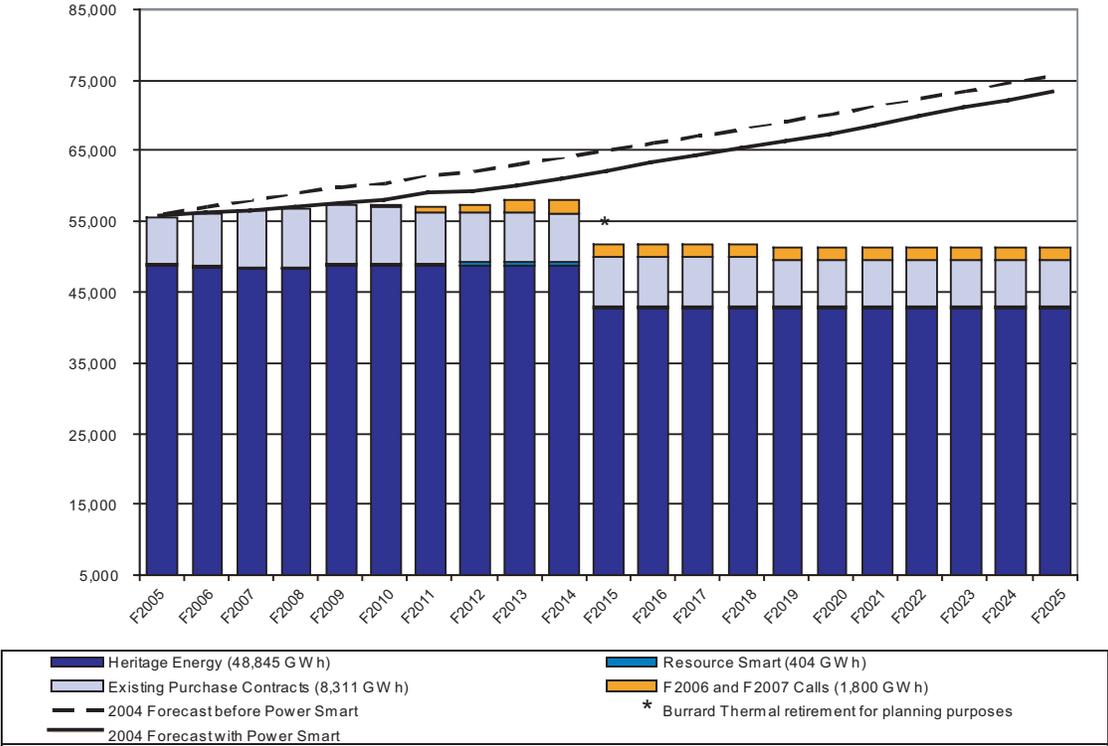
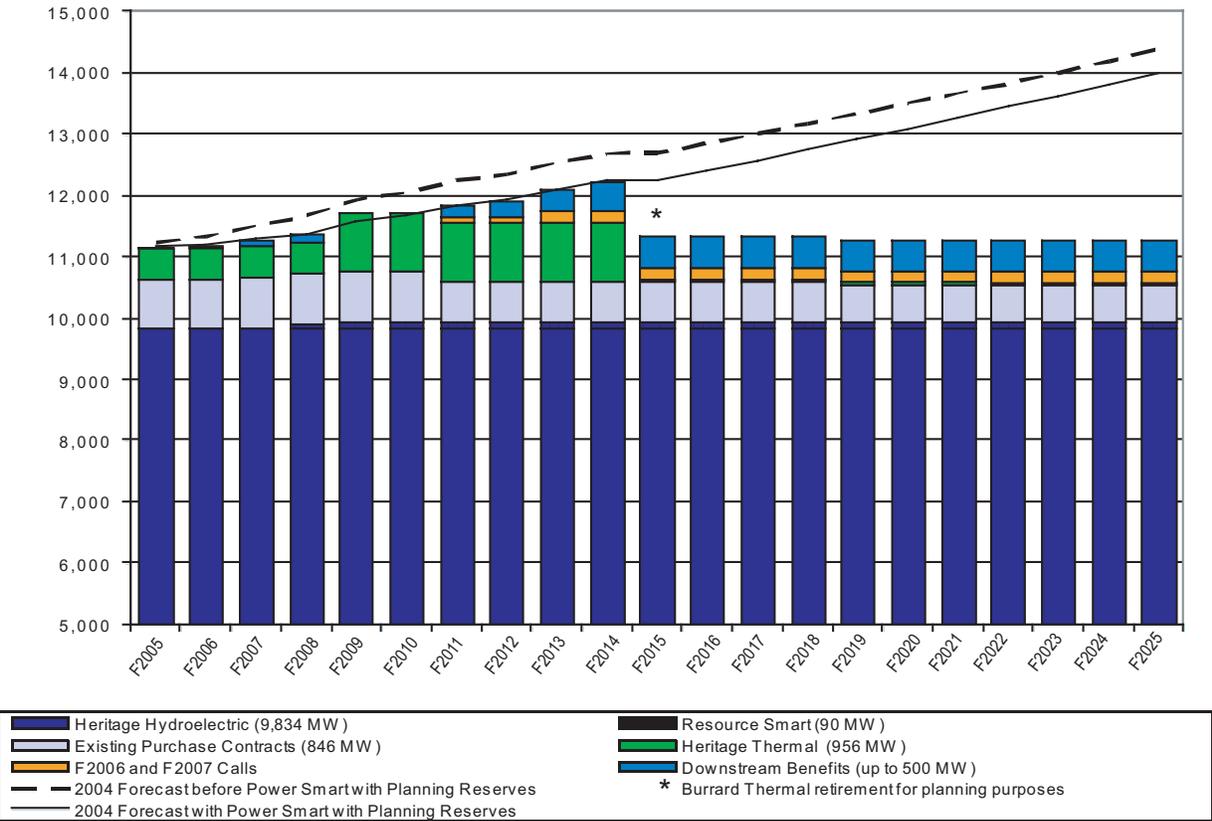


Figure 2 | System Dependable Capacity Demand - Supply Outlook



**Business Structure**

In recent years BC Hydro has restructured itself to better serve its customers. It is important to stabilize the organizational structure to allow time for employees to clearly understand their accountabilities and how they individually contribute to the overall success of the company. With the creation of B.C. Transmission Corporation and the outsourcing of some administrative services to Accenture Business Services for Utilities, BC Hydro will need to continue to define its business, and customer’s requirements and expectations. BC Hydro continues to work on developing strong relationships with its service providers, and enhancing and managing the appropriate service level agreements and performance metrics. In order to realize the full benefits of these agreements this needs to remain a primary focus for the company.

**First Nations**

Court decisions (Haida, Taku 2004), the First Nations Treaty process and new legislation have important implications for BC Hydro. The First Nations Land Management Act (2002) is resulting in aboriginal people having greater control over their lands. Responsibility for the management of these lands is moving from the federal government to First Nations. The treaty process will give First Nations greater control over these lands. Finding innovative ways to resolve historic grievances and continuing to build mutually beneficial business relationships is key for BC Hydro in the long term.

# 7. BC Hydro's Strategies, Performance Measures and Targets

BC Hydro's strategy is managing the business for the long term – in environmentally and socially responsible ways and within the financial goals committed to. Reliability and low rates for customers are key. The long-term goals provide further clarity on short- and long-term strategies, and specific performance measures and targets will be developed for each. BC Hydro will develop leading measures where necessary to determine if progress on the goals is on track and to identify where adjustments need to be made. All measures will be results-based where possible and will help the company, shareholder and public to more accurately evaluate performance. BC Hydro will track its performance on the 15 long-term goals in its quarterly and annual reports.

With a new purpose and long-term goals, BC Hydro is re-evaluating its past performance measures and targets to ensure that these are the right indicators for each long-term goal. BC Hydro is currently developing new performance measures and setting new targets that are more directly linked to the long-term goals. This will be completed by the end of fiscal 2006

and incorporated in BC Hydro's Fiscal 2006/2007 to Fiscal 2008/2009 service plan. The following tables include the performance measures used in the February 2004 service plan, with updated targets, which have now been mapped within our new long-term goal categories.

In addition to developing new performance measures and targets by the end of fiscal 2006, BC Hydro will also:

- Carry out pilot projects targeted at eliminating waste throughout the organization and identifying tangible savings.
- Establish a baseline for BC Hydro's ecosystem footprint and set targets for moving towards a zero net incremental impact on the environment.
- Complete the stakeholder engagement process for the Integrated Electricity Plan.
- Develop a multi-goal framework to ensure that business decisions are made from a long-term, financial, environmental and social perspective.



**Protecting the environment today will build a positive future for tomorrow. BC Hydro will seek to better understand its environmental footprint and operate business in a way that produces no net incremental environmental impacts.**

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## Summary of Strategies, Performance Measures and Targets for 15 Long-Term Goals

### Performance Measures

#### LONG-TERM GOALS – CUSTOMER

**Reliability (Customer)** – best-in-class reliability by customer segment

**Strategies:**

- Develop the capability for delivering differentiated levels of reliability so we can offer customers choices in the future.
- Anticipate reliability needs for future customers and incorporate them into investment strategies.

**Reliability (Supply)** – electricity self-sufficiency (energy and capacity) in B.C. for meeting all domestic needs

**Strategies:**

- Acquire or build economic energy and capacity projects and associated transmission that support electricity self-sufficiency.
- Revise long-term resource planning criteria to 100% reliance on domestic resources.

**Customer Satisfaction** – to lead other companies in offering extraordinary value and service

**Strategies:**

- Develop an ongoing process to clearly understand what customers value, both today and in the future.
- Improve aspects of service identified as primary opportunities in the Customer Plan to increase overall customer satisfaction.

**Remote Community Electrification** – to provide appropriate electric service to all remote communities on an equitable basis

**Strategies:**

- Develop a business model for service delivery, including community consultation, to determine which communities wish to receive service, type of service, regulatory approval, rate structure, etc.
- Ensure long-term funding (e.g., Indian & Northern Affairs Canada) is identified and committed.

**LONG-TERM GOALS – CUSTOMER**

Performance Measure	Actual 2003/04	Actual 2004/05	2005/06	2006/07	2007/08
Reliability ASAI (%)	99.949	99.995	99.970	99.970	99.970
CAIDI (Hours)	2.78	2.63	2.15	2.15	2.15
<b>Target Rationale</b>	Both ASAI and CAIDI have industry benchmarks. BC Hydro participates in a Distribution benchmarking study conducted by PA Consulting. In the most recent survey, first-quartile performance for ASAI was 99.983% and above. First-quartile performance for CAIDI was 1.52 hours and below. Customer satisfaction with reliability remains high but future measures will be reviewed in the context of what our current and future customers value.				
Sustaining Capital Ratio (%)	1.2	1.1	1 – 2	1 – 2	1 – 2
<b>Target Rationale</b>	Targets are based on a literature search of best practices.				
Customer Satisfaction (%)	88	90	84	84	84
<b>Target Rationale</b>	Targets have been left constant to recognize that 84% is a high level of satisfaction and to reflect the challenge BC Hydro will have in maintaining this level. The targets correspond closely to first-quartile performance in the Ipsos-Reid National Omnibus survey that BC Hydro is using as its proxy benchmark.				

**Reliability** is defined as a combination of Average System Availability Index (ASAI) and Customer Average Interruption Duration Index (CAIDI). ASAI refers to the percentage of time power is available. CAIDI describes the average number of hours per interruption. These indices are electric utility industry standards.

**Sustaining Capital Ratio** is defined as sustaining capital expenditures as a percentage of the replacement value of capital assets.

**Customer Satisfaction** is a composite indicator. Thirty per cent of the measure comes from a survey using all customers as the population from which to draw a random sample. The other 70 per cent comes from transactional surveys using only customers who have had a service interaction with BC Hydro as the population from which to draw a sample. Satisfied customers are those who indicate they are either “satisfied” or “very satisfied”.

**LONG-TERM GOALS – EMPLOYEES**

**Workplace – among the Top 10 Best Employers in Canada**

**Strategies:**

- Execution of core/basic people practices, including day-to-day activities such as performance management, recognition, and employee development.
- Better understand and benchmark to those attributes of a Top 10 employer, complete a gap analysis, identify BC Hydro priorities, and develop action plans.
- Communicate internally and externally what we do, and celebrate and recognize success.

**Teamwork – all employees work collaboratively on one team to the benefit of all stakeholders**

**Strategies:**

- Embed an accountability teamwork model into BC Hydro culture through a series of aligned initiatives, which define and instill teamwork behaviours into day-to-day actions.
- Enhance an internal/external recruitment model to ensure hiring, retention and motivation of people aligned to our long-term goals.

**Safety – have the safest work environment, compared with the best performers of any industry. None of our employees will experience a serious safety injury**

**Strategies:**

- Create an expectation of continuous improvement in safety performance and provide consistent application of safety principles across the organization.
- Ensure that all workers have the skill and will to assess and manage the risks they face and the confidence to intervene in the unsafe acts of others.

Performance Measure	Actual 2003/04	Actual 2004/05	2005/06	2006/07	2007/08
All Injury Frequency	3.0	2.5	2.3	1.9	1.5

**Target Rationale** All Injury Frequency has an industry benchmark. The benchmark is a composite of Canadian Electricity Association utilities organized on a regional/provincial basis. The All Injury Frequency targets consider BC Hydro’s historic trend and most current performance. However, the primary strategy in the targets is to fully embed BC Hydro in the top quartile and then move systematically to “Best in Class” (to 1.5).

Approved Strategic Workforce Positions Filled (number)	68	71	70	69	70
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**Target Rationale** Targets are based on modelling the current employee population by occupation to determine which ones are the most at risk for retirement attrition and co-ordinate the estimated retirements with the business plans for required future positions to determine Strategic Workforce Planning hires.

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**All Injury Frequency** is defined as the total number of employee injury incidents (Medical Aids and Disabling Injuries) occurring in the 12 months prior to the report date, relative to the number of worked hours in the same period. For this measurement, Medical Aid injuries are defined as those where a medical practitioner has rendered services beyond the level defined as “first aid” in relation to the injury incident, and the employee was not absent from work beyond time lost on the day of the injury. Disabling injuries are defined as those where the employee is absent from work beyond the day of injury.

**Approved Strategic Workforce Positions Filled** is defined as the number of positions filled under BC Hydro’s Strategic Workforce Planning (SWfP) initiative. SWfP is the management process for anticipating, scoping and planning the alignment of needed critical workforce capabilities to meet BC Hydro’s strategic business goals.

**LONG-TERM GOALS – SOCIAL**

**First Nations** – improve relationships built on mutual respect and that appropriately reflect the interests of First Nations

**Strategies:**

- Resolve historic grievances.
- Engage in meaningful dialogue and accommodation for new work, and address potential impacts on aboriginal rights with respect to new developments.

**Stakeholder Engagement** – to be the most respected company in B.C.

**Strategies:**

- Conduct specific engagement projects in a way that models BC Hydro’s values (e.g. integrated electricity planning).
- Embed a stakeholder engagement instinct in the culture, and ensure alignment of business processes.

**Suppliers** – 100% of suppliers have values congruent with those of BC Hydro

**Strategies:**

- Develop a policy that reflects best practices and balances costs.
- Develop measures for supplier practices and consequences for non-compliance.
- Ensure alignment of strategic business partners (e.g., ABSU and BCTC).

*Performance measures to be developed in F2006*

**LONG-TERM GOALS – ENVIRONMENT**

**Environmental Impact – no net incremental environmental impact**

**Strategies:**

- Eliminate or minimize waste by promoting opportunities for creative re-use.
- Work towards achieving zero net greenhouse gas emissions and zero net impact on local air quality from existing facilities, new resource choices, vehicle use and net imports where practical, and implement mitigation, sequestration and offset strategies.
- Design (or redesign) operations to have zero net land impact (e.g., restore high-risk contaminated sites) and operate within approved Water Use Plans and approved work practices for zero net aquatic impact.
- Develop a multi-goal framework to guide decision-making toward reducing emissions, wastes and environmental impacts, including a focus on Integrated Electricity Plans.

**Electricity Conservation and Efficiency – develop and foster a conservation culture in B.C. that leads to customers choosing to make a dramatic and permanent reduction in electricity intensity**

**Strategies:**

- Continue aggressive Power Smart programs.
- Introduce demand-side management tools such as new rates, and implement energy efficiency education and awareness programs, codes and standards for business buildings and energy use to encourage energy conservation.

Performance Measure	Actual 2003/04	Actual 2004/05	2005/06	2006/07	2007/08
Environmental Regulatory Compliance (# of incidents)	18	14	17	16	15
<b>Target Rationale</b>	This measure and targets are under review. The actual for fiscal 2004 was considerably better than target (40). As a result, more aggressive targets were set going forward.				
Demand-Side Management (GWh)	441	521	586	615	500
<b>Target Rationale</b>	Targets are based on the findings from the Conservation Potential Review, which concluded that significant cost-effective efficiency improvements exist in every sector in BC Hydro’s service area; these potential improvements were then translated into current Power Smart programs and programs expected to come on stream. The targets include both residential and business demand-side management (DSM) and include load displacement and energy efficiency. If the targets are achieved, BC Hydro will rank in the top quartile both for energy savings as a percentage of domestic energy sales and for investment in DSM as a percentage of revenue (American Council for the Energy Efficient Economy). The targets were changed in the February 2005 Service Plan to reflect incremental rather than cumulative totals.				

**Environmental Regulatory Compliance** is defined as the number of externally reportable, preventable environmental incidents. After the education and awareness is complete, as well as improved relations and understanding with regulators, BC Hydro expects the numbers to start dropping. The reductions should result from continuously improving management practices.

**Demand-Side Management** is defined as the rate at which annual gigawatt hours (GWh) are being saved as a result of economic demand-side management (conservation, energy efficiency, and load displacement).

New Electricity from Clean Energy Percentage					
	2003/04	2004/05	2005/06	2006/07	2007/08
Target (10-year average)	50%	50%	50%	50%	50%
Actual	52%	61%*/35%**			

The **Clean Energy Target** of 50% of new supply is to be achieved over a 10-year period. The annual results will tend to fluctuate based on updates to the load forecast, and timing, volume and type of actual supply delivered.

**Variance Explanation**

\* The figure 61% represents the acquired Clean Energy of 872 GWh against the planned incremental load, after Power Smart, of 1,438 GWh. Since the formulation of the plan, there has been a significant increase in our demand requirements, as reflected in the load forecast in January 2005. As a result, our annual target of incremental load, after Power Smart, was revised from 1,438 GWh to 2,463 GWh.

\*\* Based on this revised incremental load, the Clean Energy acquired in 2004/2005 was only 35%. BC Hydro is on track with the planned acquisition calls in 2005 and 2006 to achieve the 50% target within the 10-year horizon.

**LONG-TERM GOALS – FINANCIAL**

**Financial Targets –**

- Maintain existing North American competitive position of average electricity unit costs
- Deliver 100% forecast net income on an annual basis (after adjustments for water volatility, etc.)

**Strategies:**

- Clearly define benchmark of our competitive position.
- Develop a 20-year financial model for longer term decision making and a robust forecasting methodology.
- Clearly understand regulator, stakeholder groups and shareholder expectations, and encourage a long-term view.

Performance Measure	Actual 2003/04	Actual 2004/05	2005/06	2006/07	2007/08
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Net Income (\$ millions)	111	402	376	352	274
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**Target Rationale**

Targets are based on key economic and business factors that are expected to have an impact on revenues and expenses.

Net income, defined as total revenue less total expenses after regulatory account transfers, represents the net impact of key economic and business factors that affect BC Hydro's performance. This measure is changed from the February 2005 Service Plan, where net income before regulatory account transfers was reported, because the regulatory account transfers reflect the financial impact of the factors beyond BC Hydro's control (such as water volatility, market prices, etc.).

The forecasts for Fiscal 2006/07 and Fiscal 2007/08 do not include any rate increases that might be required to allow BC Hydro to earn its allowed rate on equity. Any rate increases will be subject to a regulatory review process and require the approval of the BC Utilities Commission.

## LONG-TERM GOALS –ENABLERS

**Western Opportunities** – To increase profits in the broader western market by leveraging our system and trading capabilities and implementing long-term investment and procurement strategies

**Strategies:**

- Through Powerex, increase trading and custom transactions within the western region through increased access to physical supply and by developing sales opportunities.
- Identify additional domestic power for export such as incremental supply from independent power producers and through investment decisions.
- Develop strategy for influencing transmission reinforcements within B.C. and with neighbours.

**Innovation and Technology** – to be an industry leader in innovation and use of new technology, directly supporting and advancing BC Hydro's long-term goals

**Strategies:**

- Participation in pilot projects, internally and externally.
- Strong relationships with innovation and technology leaders.
- Sound business practices that support innovation and new technology.
- Strong employee participation, across all of BC Hydro.
- Integration with learning initiatives, both internally and externally.
- Leverage Powertech.

*Performance measures to be developed in F2006*

# 8. Financial Outlook Summary

This section includes high-level financial projections for BC Hydro's revenues and expenses, the key assumptions and risks considered in setting these projections and the major capital expenditures that support the long-term goals.

## Financial Performance and Key Assumptions

BC Hydro's operations are subject to a number of risks and uncertainties that may cause actual financial results to differ materially from those contemplated in the Service Plan. These factors are largely beyond BC Hydro's control. The use of deferral accounts beginning in fiscal 2005 will help in reducing this volatility between actual and plan net income for customers (see the discussion on deferral accounts below).

Over the next several years, the most significant cost pressures are expected to be:

- Increased cost of energy because, as the capacity of low-cost heritage assets is reached, bringing on new sources of energy to meet demand growth is more costly.
- Increased demand-side management program spending to increase the efficient use of electricity in order to reduce BC Hydro's exposure to new energy costs.
- Increased capital expenditures to refurbish aging assets.
- Increased cost of managing environmental and social regulations impacts and costs, conducting negotiations and building mutually beneficial relationships with First Nations and communities.

In preparing its financial projections, BC Hydro identified the key economic and business factors that are expected to impact its revenues and expenses in the coming years. The key operating impacts are outlined below:

- The forecast revenues from domestic operations are based on the rate increase of 4.85 per cent effective from April 1, 2004 to March 31, 2006. The forecasts for fiscal 2007 and fiscal 2008 do not include any further rate increases and do not include a recovery of the regulatory deferral account balances. BC Hydro expects to file its 2007/08 Revenue Requirement with the BCUC in early 2006.
- Domestic revenues are forecast to increase as a result of continued improvement in the economy, particularly in the Residential and Light Industrial categories. Gross margins on domestic business are expected to recover from the levels experienced in fiscal 2005 as the reliance on higher-cost market purchases of electricity is sharply reduced with the forecast return to average water inflows.
- Maintenance expenditures will continue to put pressure on BC Hydro's costs because of the age of BC Hydro's assets and the need to maintain long-term reliability and service levels.
- Amortization costs increase in the forecast periods because increased capital expenditures are planned to ensure long-term health of BC Hydro's assets.
- Finance charges are expected to increase throughout the forecast period, due primarily to an increase in the outstanding debt and expected increases in short-term interest rates. Debt levels are projected to increase, in part due to the increase in capital expenditures. Canadian short-term interest rates are expected to be 2.96 per cent in fiscal 2006 and increase over the next two years to 4.63 per cent in fiscal 2008.
- The Canadian dollar remains over U.S. 80 cents/Canadian dollar in the current fiscal 2005 and will stabilize for the future years.
- BC Hydro uses the assumptions provided by

the Ministry of Finance on Gross Domestic Product and interest and foreign exchange rates in preparing its budgets.

### Deferral Accounts

In its report issued on October 29, 2004, the B.C. Utilities Commission (BCUC) endorsed BC Hydro’s application for deferral accounts. The deferral accounts will be used to capture specific differences between forecast costs and actual costs. The intent of the deferral accounts is to smooth the overall impact on ratepayers with the positive and negative balances offsetting each other.

BC Hydro will be subject to periodic reporting of changes in the deferral accounts. At this time, the parameters for using any accumulated balances in future rate applications are yet to be determined and approved by the BCUC.

In the revenue requirements application, BC Hydro applied for the following deferral accounts:

- Heritage Payment Obligation Deferral Account
- Trade Income Deferral Account
- Non-Heritage Deferral Account
- BCTC Transition Deferral Account

In November 2004 BC Hydro filed revised revenue requirements schedules to reflect the results of the BCUC decision. These schedules form the base-line forecast used to determine deferral account impacts for the fiscal 2005 and fiscal 2006 years. Deferral account transfers are not calculated for other years in the plan forecast, as there is no base line for purposes of calculating the relevant variances that flow into the deferral accounts.



**John Hart Generating Station is located on Vancouver Island and was originally constructed in 1953. Several options are being studied to address the condition and risk of the aging facility, including rehabilitation and redevelopment. Completion date is planned for 2010.**

## Revenues and Expenses – Financial Projections

BC Hydro's financial projections for revenues and expenses through fiscal 2008 were calculated based on information as at July 2005.

Consolidated Statement Of Operations (\$ millions)	Actual F 2004	Actual F 2005	F 2006	Forecast F 2007	F 2008
<b>Revenues</b>					
<b>Domestic</b>					
Residential	\$ 960	\$ 1,016	\$ 1,036	\$ 1,055	\$ 1,074
Light industrial and commercial	912	967	994	1,003	1,010
Large industrial	525	573	555	546	540
Other energy sales	89	88	89	89	92
Miscellaneous	67	60	49	48	47
	2,553	2,704	2,723	2,741	2,763
Electricity trade	871	1,021	1,121	1,119	1,139
	3,424	3,725	3,844	3,860	3,902
<b>Expenses</b>					
Energy costs	1,580	1,959	1,917	1,882	1,928
Operation, maintenance and administration	622	631	566	566	566
Taxes	147	143	152	155	156
Amortization	525	446	433	457	489
	2,874	3,179	3,068	3,060	3,139
<b>Income Before the Following Items:</b>	<b>550</b>	<b>546</b>	<b>776</b>	<b>800</b>	<b>763</b>
Finance charges	(452)	(442)	(447)	(467)	(507)
Restructuring costs	(8)	–	–	–	–
Payment from Alcan Inc. <sup>1</sup>	–	137	–	–	–
<b>Income Before Regulatory Account Transfers</b>	<b>90</b>	<b>241</b>	<b>329</b>	<b>333</b>	<b>256</b>
<b>Regulatory Account Transfers</b>					
Heritage Payment Obligation Deferral Account	–	131	10	–	–
Non-Heritage Deferral Account	–	128	44	–	–
Trade Income Deferral Account	–	(111)	(46)	–	–
BTC Transition Deferral Account	–	–	22	–	–
Regulatory provision for future removal and site restoration costs	–	13	17	19	18
Rate Stabilization Account	21	–	–	–	–
<b>NET INCOME</b>	<b>\$ 111</b>	<b>\$ 402</b>	<b>\$ 376</b>	<b>\$ 352</b>	<b>\$ 274</b>

<sup>1</sup> On December 23, 2004, Alcan Inc. paid Powerex US\$110.4 million (Cdn\$137 million), the full value of the arbitration award of US\$100 million plus US\$10.4 million in interest, to settle obligations under a power purchase and sale agreement.

The one-time 4.85 per cent rate increase approved for April 1, 2004 provides BC Hydro the opportunity to earn a net income for fiscal years 2005 and 2006 that is consistent with the allowed return on equity established by the BCUC. The other years in the forecast do not include any further rate increases that might be required to enable BC Hydro to achieve that outcome. Further analysis of cost structures and the use of the deferral account balances would be required before any conclusions could be reached in respect of future rates.

**Key Assumptions**

The following key assumptions were used in preparing BC Hydro’s financial projections.

	F2006	F2007	F2008
Water inflows <sup>1</sup>	95%	Average	Average
Average Mid-C price (\$US/MWh)	54.10	55.90	54.10
Average natural gas price at Sumas (US\$/MMBTU)	6.80	6.90	6.50
Electricity trade sales volumes (gigawatt hours)	32,614	34,437	37,026
Domestic sales volume (GWh)	51,323	51,692	52,002
Domestic load growth (%) <sup>2</sup>	0.57%	0.72%	0.60%
Residential customer load growth (%) <sup>2</sup>	2.37%	1.59%	1.81%
Light Industrial and Commercial customer load growth (%) <sup>2</sup>	2.03%	1.25%	0.75%
Large Industrial customer load growth (%) <sup>2</sup>	- 2.58%	- 0.89%	- 1.21%
Total integrated load (GWh)	56,127	56,544	56,877
B.C. Real Gross Domestic Product (%) <sup>3</sup>	3.10%	3.00%	3.00%
Net market purchases (excluding gas for trade)	1,617	1,014	1,302
Canadian short-term interest rates <sup>3</sup>	2.96%	3.75%	4.63%
Foreign exchange rate – US\$ per Cdn\$ <sup>3</sup>	0.8167	0.8321	0.8350
Rate Increase	0.00%	0.00%	0.00%

<sup>1.</sup> Based on the February – September 2005 water year.  
<sup>2.</sup> Includes impact of Power Smart (conservation) programs.  
<sup>3.</sup> Economic assumptions from Ministry of Finance dated July 25, 2005.

Due to the size, complexity and nature of BC Hydro’s operations, various legal and regulatory matters are pending. It is not possible at this time to predict with any certainty the outcome of such litigation or regulatory decisions. BC Hydro’s Annual and Quarterly reports describe significant legal and regulatory matters.

### Sensitivity Analysis

The following table illustrates the impact that key factors can have on BC Hydro’s earnings over the forecast period. The combined effect of these factors can affect Income before Deferral Accounts by a significant amount as outlined below.

(\$ millions)	2005/06		2006/07		2007/08	
	Low	High	Low	High	Low	High
Estimated Income before Regulatory Accounts Transfers	329	329	333	333	256	256
Inflows / Gas Prices <sup>1</sup>	(62)	234	(226)	350	(224)	357
Weather <sup>2</sup>	(2)	2	(2)	2	(2)	2
Pension Costs <sup>3</sup>	–	–	(5)	10	(10)	15
Foreign Exchange <sup>4</sup>	(5)	5	(5)	5	(5)	5
Interest Rates <sup>5</sup>	(10)	10	(15)	15	(15)	15
<b>Combined Sensitivity – Income before Regulatory Accounts Transfers</b>	<b>250</b>	<b>580</b>	<b>80</b>	<b>715</b>	<b>(0)</b>	<b>650</b>

<sup>1.</sup> High and low range based on being within an 80 per cent probability band. The range is smaller for F2005 as the range only reflects the uncertainty for the remainder of the year. The ranges fluctuate from year to year due to the impact inflow levels and market prices have on decisions for optimizing the system, including reservoir levels.

<sup>2.</sup> Assumes weather will be five per cent warmer or colder than normal and fall within this range approximately 80 per cent of the time.

<sup>3.</sup> Probable forecast assumes return on pension plan assets is seven per cent, low forecast assumes return of five per cent and high forecast assumes rate of 10 per cent. The next tri-annual actuarial valuation of the pension fund liability will be completed in the fall of 2005. Impacts on changes to the actuarial valuation are not reliably estimable at this time and the range of possibilities can be large.

<sup>4.</sup> High and low are based on being within the 80 per cent probability band (translates to +/- 2 cents from expected). The impact of a change in the dollar includes the impact on Powerex net cash flows, interest payments on U.S. dollar denominated debt, U.S. dollar sinking fund income and the Commission-approved deferral and amortization method of accounting for foreign-exchange gains and losses on foreign denominated monetary items such as debt.

<sup>5.</sup> A change of one percentage point in short-term interest rates changes finance charges by approximately \$30 million. High and low are based on being within the 80 per cent probability band (translates to +/- 50 basis points from expected).

BC Hydro reports on actual performance in its quarterly and annual reports, and provides updated forecasts each year in its Service Plan.

## Capital Expenditures

Several drivers guide capital project spending at BC Hydro:

- **Reliability** – projects that will prevent a loss of existing capability or protect existing equipment, systems and system capability.
- **Consent to Operate** – projects that will protect BC Hydro’s consent to operate today and in the long term (primarily environmental and social).
- **Regulatory** – projects that will ensure regulatory compliance.
- **Risk Management** – projects that will identify and manage a variety of anticipated risks as good business practice.
- **Cost Efficiency** – projects that will reduce costs or protect existing revenues.
- **Employee Safety** – projects that will identify and manage a variety of workplace risks/hazards to protect employees.
- **Supply Expansion** – projects that will ensure that BC Hydro responds effectively to requirements to meet load or customer growth.

In addition, BC Hydro classifies capital spending between sustaining expenditures (those required to meet the BC Hydro Goals of meeting targeted levels of customer and supply reliability) and expansion expenditures (those required to meet load growth or other profit-driven business investments). The table below shows actual and planned capital expenditures for both the sustaining and expansion classifications.

Type	2002/03 Actual	2003/04 Actual	2004/05 Actual	2005/06 Plan	2006/07 Plan	2007/08 Plan
Sustaining (\$ million)	367.3	375.0	343.3	434.1	471.9	501.1
Expansion (\$ million)	374.1	261.4	268.4	394.9	535.9	491.5
<b>Total</b>	<b>741.4</b>	<b>636.4</b>	<b>611.7</b>	<b>829.0</b>	<b>1,007.8</b>	<b>992.6</b>

**Approved Projects over \$50 Million**

BC Hydro has planned for the following projects that have capital costs expected to exceed \$50 million. BC Hydro has a statutory requirement under the Budget Transparency and Accountability Act to disclose these in this Service Plan.

**Seven Mile Dam Safety Improvements**

Initiated in February 2002, this project is a Dam Safety Deficiency Investigation project that is part of the Dam Safety Program. Improvements are needed to meet current dam safety practice requirements, and mitigate the risks to life, environmental damage and financial loss.

The project will address three safety deficiencies:

- Spillway gate improvements – to allow the spillway gates to be operated with a high degree of reliability after an earthquake.
- Dam upgrade work – to anchor the dam with post-tensioned anchors drilled through the concrete into the underlying bedrock.
- Site systems upgrades – to improve the reliability of the power supply to the facility, determine common drainage pumps, and improve communications and control systems.

Scheduled completion: 2005  
Total cost: \$64 million

**Mica Generator Stator Replacement**

The Mica Stator Replacement project is intended to reduce the risks of forced outages and particularly the risk of a long, unplanned outage due to catastrophic failure of the stator. The project includes purchasing and installing new stators for each unit over a number of years, beginning with Unit 4 in 2006.

Scheduled completion: 2009  
Total cost: \$77 million. (Note: This cost estimate has increased from the February 2005

Service Plan primarily due to rotor modifications necessary because of a new stator design, and due to commodity price escalation.)

**Peace Canyon Generator Stator Replacement and Rotor Modification**

Following a design and operational review of the Peace Canyon generating station, BC Hydro adopted this project which involves refurbishing, modifying and repairing equipment. The project protects the overall investment in the

**What is a Stator?**

A stator is the external part of a motor. It is the stationary section. This is in contrast to the rotor, which is the section of the motor which rotates

Peace Canyon Generating Station and meets safety requirements.

Scheduled completion: 2009  
Total cost: \$64 million.

**Contemplated Projects over \$50 Million**

The following projects over \$50 million are being contemplated but are not yet approved.

**John Hart Modernization Study**

The John Hart generating facility is located on Vancouver Island and was originally constructed in 1953. In addition to key components being at end of life and in poor condition, numerous risks have been identified at the facility. These include seismic risk (powerhouse, surge tower) and fisheries risk in the event of forced outages. Several options to address the condition and risks at John Hart are being studied, such as rehabilitation or redevelopment.

Scheduled completion: 2010  
Total cost: \$216 million (replacement costs of the assets)

**Hugh Keenleyside – Earthfill Dam Remediation**

The Hugh Keenleyside Earthfill Dam Remediation project is intended to mitigate earthquake risk and protect public safety. Earthquake standards have increased since construction of the dam in 1968. The project is required to mitigate the seismic risk for life safety, preserve the economic benefits of the facilities, and maintain the downstream flood control benefits.

Scheduled completion: 2011  
Total cost: \$67 million (preliminary engineering estimates)

**GMS Capacity Increase**

The stators of G.M. Shrum (GMS) generating units 1 to 4 are approximately 35 years old and are in poor or unsatisfactory condition based on BC Hydro’s equipment health rating. The replacement of these units will mitigate the negative financial impact of forced outages at G.M. Shrum. In conjunction with the stator upgrades at GMS, capital has been earmarked for potential capacity increases for units at GMS to increase the capacity of the facility and for turbine upgrades for units 1 to 5.

Scheduled completion: 2012  
Total cost: \$158 million (preliminary engineering estimates)

**Revelstoke Unit 5**

The Revelstoke Generating Station consists of four generating units with a combined capacity of 1980 MW. The plant was originally designed to be a six-unit generation station; however, two bays were left empty. By adding the fifth generating unit at Revelstoke, an additional 500 MW of capacity will be available to meet winter peak demand and provide additional system shaping capability year-round. Currently, \$2.1 million has been approved to complete the regulatory approvals and to work with First Nations towards achieving, in principle, a benefits agreement before starting construction.

Scheduled completion: 2010  
Total cost: \$140 million (preliminary engineering estimates).

**Ruskin – Dam Safety Improvements**

The Ruskin Dam Safety Improvements project is intended to mitigate earthquake risk and protect public safety. Earthquake standards have increased since construction of the dam in 1930. The project is required to mitigate the seismic risk for life safety and preserve the economic benefits of the asset.

Scheduled completion: 2009  
Total cost: \$70 million (preliminary engineering estimates)



Ruskin Generating Station is located on the Stave River near its confluence with the Fraser River. The 105.6 megawatt powerhouse contains three generation units. A dam safety improvements project, planned for completion in 2009, will mitigate earthquake risk and protect public safety.

# 9. Alignment to the Government’s Strategic Plan

BC Hydro is aligned with government’s Strategic Plan.

Government Goals	BC Hydro Alignment
<ul style="list-style-type: none"> <li>To make BC the best educated, most literate jurisdiction on the continent.</li> <li>To lead the way in North America in healthy living and physical fitness.</li> <li>To build the best system of support in Canada for persons with disabilities, special needs, children at risk and seniors.</li> </ul>	<p>Remitting \$725 million in fiscal 2004 in dividends and other payments that support services such as health care and education.</p> <p>Contributing \$1 million to charitable and community organizations in BC through Corporate and Regional Donation programs and over \$600,000 through BC Hydro's employee fund, Hydrecs.</p> <p>Building for our future through \$100,000 in scholarships for students entering post-secondary education.</p> <p>Developing the skills and knowledge of BC Hydro’s approximately 4,100 employees and contractors, and by providing a safe, healthful, harassment-free workplace.</p>
<ul style="list-style-type: none"> <li>To lead the world in sustainable environmental management, with the best air and water quality, and the best fisheries management, bar none.</li> </ul>	<p>Operating with a long-term, triple-bottom-line business approach that values social, environmental and financial factors.</p> <p>Investing in clean energy sources to meet growing demand.</p>
<ul style="list-style-type: none"> <li>To create more jobs per capita than anywhere else in Canada.</li> </ul>	<p>Providing low-cost, reliable electricity to maintain and enhance competitiveness of B.C. industries and businesses.</p> <p>Involving independent power producers in order to diversify energy supply, generate economic wealth and create jobs.</p>

# Conclusions

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BC Hydro’s new purpose clearly defines the company’s long-term vision.

**Reliable Power,**

Having enough electricity when our customers need it.

**At Low Cost,**

Maintaining our competitive, low rate advantage.

**For Generations.**

Sustainability for today, tomorrow and the future.

Together with 15 long-term goals and our values, the purpose will guide BC Hydro’s planning and operations over the next 20 years. Centred on the customer, employees, social, environmental, financial, and enabling goals, BC Hydro will manage the balance between environmental, social and financial bottom lines.

BC Hydro has considered the business environment, both internally and externally, and assessed risks to its operations in order to develop a long term plan. Its short- and long-term strategies incorporate bold new approaches to business. The right performance measures are being developed to ensure that BC Hydro can focus employees on the priorities, evaluate its performance, be accountable to British Columbians, and make necessary adjustments as required to meet its vision for the future.

Every British Columbian – First Nations, stakeholders, customers, the shareholder and regulator – will play a role in BC Hydro’s future. Working together with these partners, BC Hydro will leave a legacy for future generations.

This is a sustainable vision. It is a vision that is based on environmental, social and financial bottom lines. And one that will ensure reliable power, at low cost, for generations.

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