
Revenue Requirement Application

2004/05 and 2005/06



Volume 1

Chapter 1.

Application Overview

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1 Introduction

BC Hydro serves more than 1.6 million customers in an area containing over 94 per cent of British Columbia's population. Since its creation 40 years ago it has constructed a secure and economic integrated electric system with over 11,000 megawatts of generating capacity – over 87% of which is based on clean, renewable hydroelectricity. Through the reliable supply of hydroelectricity at some of the lowest rates in the world, BC Hydro supports the economic development of British Columbia in a responsible and environmentally sustainable manner.

In this application BC Hydro seeks a Commission order allowing BC Hydro to increase its domestic rates by 7.23%, effective April 1, 2004, and again by 2.0%, effective April 1, 2005, both on a final basis. BC Hydro also seeks a rate increase of 7.23% effective April 1, 2004 on an interim basis. The specific rates BC Hydro seeks approval to increase are described in appendix B.

This application seeks increases to the rate levels of BC Hydro which, if approved, will remain lower than in almost all jurisdictions in North America¹. Those rates are necessary to recover prudently incurred costs that will allow BC Hydro to meet the cornerstone objectives of the Energy Plan, and in particular will allow BC Hydro to maintain system reliability; and to responsibly manage environmental and social impacts. At the same time they will allow BC Hydro to maintain and improve service levels in line with customer expectations. Finally, the applied for increases are required to permit BC Hydro an opportunity to earn its allowed rate of return on equity.

BC Hydro also seeks Commission approval for a number of corollary items, including:

- approval of three new deferral accounts, as described in chapter 2; being the Heritage Payment Obligation Deferral Account, the Trade Income Deferral Account, and the BCTC Transition Deferral Account; and
- a reduction in certain wholesale transmission service rates, as described in chapter 6.

BC Hydro does not propose any new rate forms in this application, including stepped rates for industrial and large commercial customers, nor any re-design of any of its current rates,

¹ See appendix D.

1 including its “E-Plus” rates (Rate Schedules 1105, 1205, 1206 and 1207) and its rates for
2 customers in the non-integrated areas. To make this revenue requirement proceeding as
3 efficient and focused as possible, BC Hydro will deal with Stepped Rates in an application it
4 expects to file in late 2004 or early 2005, and with all other rate design issues in an
5 application it expects to file in early 2005 or at such other time as the Commission believes
6 a dedicated proceeding is appropriate.

1 **2 Context of Application**

2 **2.1 Government's Energy Plan**

3 This application is made in the context of significant recent policy developments affecting
4 the electric industry in BC. In particular, the Province developed a new energy policy
5 contained in a document issued November 25, 2002 entitled "Energy for Our Future: A Plan
6 for BC" (the Energy Plan). The Energy Plan was the culmination of an 18-month process,
7 beginning with the election of the new provincial government in May 2001.

8 The role of BC Hydro was an important consideration in the context of the review. BC Hydro
9 owns 80% of the Province's generating capacity and serves 80% of BC's domestic load. It is
10 the Province's largest Crown corporation. Not surprisingly, BC Hydro followed the process
11 closely and over the past two and a half years has done its best to anticipate key
12 government policies of relevance to it.

13 The development of the Energy Plan involved the appointment of an Energy Task Force to
14 conduct consultations and set out proposed policies. Early in the discussions that led to the
15 Interim Energy Task Force Report in November 2001, it became apparent that many
16 stakeholders and government officials favoured private industry construction of new
17 generation in preference to BC Hydro constructing new generation. It also became
18 apparent that the development of environmentally responsible energy options was a high
19 priority for government. Although not immediately crystallized, these evolving policies were
20 confirmatory of trends in BC Hydro's own planning, and began to become increasingly
21 reflected in BC Hydro's actions. The Energy Plan confirmed these directions in government
22 thinking and established other fundamental principles to guide the development of future
23 energy policies. Specifically, the four cornerstones of the Energy Plan are as follows:

- 24 • continued low electricity rates and public ownership of BC Hydro;
25 • secure, reliable supply of energy for British Columbia;
26 • more private sector opportunities in wholesale electricity supply; and
27 • environmental responsibilities and no nuclear.

28 These four cornerstones confirm that a number of the initiatives inside B.C. Hydro that were
29 under development were in line with government policy.

1 In some respects the four cornerstones may conflict and an appropriate balance must be
2 found. For example, a more significant focus on increased reliability or environmental
3 responsibility may put upward pressure on rates. Similarly, short term cost reductions may
4 lead to long term increase in costs. Nevertheless, these four cornerstones of the Energy
5 Plan have determined to a significant extent the manner in which BC Hydro expects to
6 provide service in the future, which in turn has had a direct influence on BC Hydro's
7 anticipated service levels and its expected costs and revenues over the next few years, as
8 articulated below. BC Hydro believes that this method of planning and operating its system
9 minimizes the necessary trade-offs to achieve the four cornerstones.

10 In addition to the four cornerstones, the Energy Plan prescribes a number of specific policy
11 actions meant to advance the overall direction of the Energy Plan. Some of the policy
12 actions that are particularly germane to this application are set out below.

13 2.1.1 Heritage Legislation and Government Response to Commission Recommendations

14 Policy action #1 called for a BCUC-led enquiry into a Heritage Contract, by which the
15 benefits of BC Hydro's existing low-cost generation resources would be preserved for the
16 benefit of BC Hydro's ratepayers through the use of embedded cost rate-making. That
17 enquiry resulted in formal recommendations to government issued by the BCUC on October
18 17, 2003 (Heritage Recommendations); a government response to the Heritage
19 Recommendations² on November 28, 2003; the new *BC Hydro Public Power Legacy and*
20 *Heritage Contract Act* (the Legacy Act) which received Royal Assent on November 20,
21 2003; and new regulations regarding BC Hydro which were issued on November 27, 2003.
22 Government's response to the Heritage Recommendations, the Legacy Act and the new
23 regulations inform to a significant extent the cost of energy component of this application.

24 The Legacy Act prohibits BC Hydro from selling or otherwise disposing of the Heritage
25 Resources and, in addition, its transmission or distribution systems (section 2). One of the
26 new regulations, Heritage Special Directive No. HC1 to BC Hydro (HSD #1), effectively
27 eliminates the Rate Stabilization Account (RSA).

28 The other new regulation, Heritage Special Direction No. HC2 to the Commission (HSD #2),
29 replaces former Special Direction No. 8 to the Commission regarding the regulation of

² See www.gov.bc.ca/em.

1 BC Hydro. It is similar to Special Direction No. 8, but has some notable features relevant to
2 this application, as follows:

- 3 • it requires the Commission to treat for rate-making purposes the Heritage Contract
4 attached to HSD #2 as legally binding, the effect of which is to require BC Hydro to
5 continue to deliver energy at cost based rates;
- 6 • it requires the Commission to include in its forecasts of BC Hydro's net income a
7 forecast of Trade Income that may not be greater than \$200 million, nor less than zero,
8 thereby ensuring that ratepayers continue to get the full benefit of Trade Income in all
9 but the most exceptional circumstances, and are protected from trading losses; and
- 10 • it requires the Commission to allow the establishment of one or more deferral accounts
11 related to the Heritage Contract, the effect of which will be to smooth rates.

12 2.1.2 Return to Rate Regulation

13 Policy action #5 confirms that the rate freeze will not be extended again, and that BC Hydro
14 will once again be subject to full rate regulation by the Commission.

15 2.1.3 Resource Acquisition and Clean Energy

16 Policy action #13 of the Energy Plan limits BC Hydro's role in the development of new
17 energy supplies to undertaking efficiency improvements and capacity upgrades at existing
18 facilities. Third parties, rather than BC Hydro, are intended to supply all of BC Hydro's
19 incremental energy needs other than Resource Smart projects that increase capacity at BC
20 Hydro's existing facilities for which Cabinet has expressly permitted BC Hydro to seek
21 approval.

22 Related to the new role for independent power producers, policy action #20 sets a target for
23 BC Hydro and other electric distribution utilities to voluntarily acquire 50% of new supply
24 through clean sources - defined in the Energy Plan as technologies that result in a net
25 environmental improvement relative to existing energy production - subject to such
26 acquisitions having less than a 0.2% per year rate impact.

27 2.1.4 Contracting out of Services

28 Policy action #4 confirms that BC Hydro should continue to look for outsourcing
29 opportunities that will reduce costs and maintain or improve service levels.

1 2.1.5 British Columbia Transmission Corporation

2 Policy action #15 pronounces government's intention to create a new Crown corporation
3 that will plan, operate and manage BC Hydro's transmission system. The British Columbia
4 Transmission Corporation (BCTC) is the result, and is described further below. Also Special
5 Direction No. 9 (SD #9) to the Commission was approved by Order-in-Council on November
6 27, 2003. It directs the Commission with respect to the regulation of BCTC.

7 2.1.6 Line of Business Organizational Structure

8 Policy action #8 continues BC Hydro's "line of business" management structure, discussed
9 below.

10 2.1.7 DSM Investments Encouraged

11 Policy action #23 calls for the amendment of the *Utilities Commission Act* for the purpose of
12 removing a disincentive to invest in demand side management programs. That policy action
13 has been reflected in amendments to section 60 of that statute that permit a utility to earn a
14 return on investments in conservation that is equivalent to the return available for an
15 equivalent investment in generation resources.

16 **2.2 Supply / Demand Balance During Rate Freeze**

17 BC Hydro's last revenue requirement proceeding was almost 10 years ago, when its
18 February 1994 application for a rate increase was denied by the Commission in Order G-89-
19 94. BC Hydro's rates were then frozen by a succession of government enactment, finally
20 ending on March 31, 2003.³ During this period, BC Hydro's generating capability exceeded
21 domestic demand.

22 Domestic load growth is shown in Table 1-1.

³ The Tax and Consumer Rate Freeze Act, as amended, and section 24 of the Miscellaneous Statutes Amendment Act (No. 2), 2001, effectively froze BC Hydro rates from 1996 to March 31, 2003.

1 **Table 1-1. Domestic Sales, F1994 to F2003⁴**

(GWh)	F1994	F2003	% Increase
Residential	12,442	15,024	21%
Light Industrial & Commercial	14,086	16,757	19%
Large Industrial	14,178	15,179	7%
Other	1,312	1,717	31%
Total	42,018	48,677	16%
Actual Peak One-hour Demand Integrated System (MW)	8,059	8,481	5%

2 Notes:

3 Source is 1994 BC Hydro Annual Report and 2003 BC Hydro Annual Report.

4 Gross energy requirement to serve domestic load has now grown beyond the capability of
5 the low cost Heritage Resources as shown in Table 1-2:

6 **Table 1-2. Gross Energy Requirements, F1994 to F2003**

(GWh)	F1994	F2003	% Increase
Total Domestic Sales	42,018	48,677	16%
Line Losses and System Use	4,315	4,689	
Gross Energy Requirements	46,333	53,366	15%

7 Notes:

8 In an average water year, low cost Heritage Resources can provide about 49,000 GWh, which is
9 lower than the gross energy requirements for F2003.

10 The result is that for the test periods, BC Hydro expects to meet all annual load growth
11 through Power Smart or the acquisition of new resources as opposed to providing supply
12 out of existing unused capability.

13 ***BC Hydro's Current Rates***

14 As a result of the rate freeze BC Hydro's rates have not kept pace with inflation, and have
15 been substantially below the increase in the BC Consumer Price Index. Indeed, on a
16 purchasing power basis, BC Hydro's flat rates have decreased by approximately 14% since
17 1993. BC Hydro's current rates are also low in comparison with the electricity rates of
18 similar utilities in other jurisdictions, being the lowest in North America for commercial and

⁴ In this application BC Hydro refers to its fiscal years commencing on April 1, 200X and ending March 31, 200Y, as "F200Y". For example, the current fiscal year commenced on April 1, 2003 and is referred to as "F2004." Further, in tables throughout the document, F2003 Actual = reported results from F2003; F2004 Forecast = year-end forecast for the current fiscal year; and F2005 and F2006 Plan = expenditures or volumes forecast during the test periods.

1 residential class customers and second only to the rates in Winnipeg for industrial class
2 customers⁵.

3 BC Hydro can no longer keep pace with increasing cost pressures while maintaining and
4 improving service levels and meeting the cornerstone objectives of the Energy Plan. Cost
5 pressures over the last 10 years were offset by trade revenues and reduced financing costs.
6 Additional benefits from these two sources are not expected. The most significant cost
7 pressures over the next two years include:

- 8 • an increase in cost of energy as the capacity of low-cost Heritage Resources has been
9 reached. New sources of energy to meet the growth in demand will cost more than the
10 current embedded cost of supply. BC Hydro has adopted competitive procurement
11 through tendering to capture the benefits of a competitive market place on behalf of its
12 customers. BC Hydro's resource procurement strategy puts particular emphasis on
13 ensuring customers have a reliable supply with limited exposure to the volatility of the
14 market.
- 15 • an increase in maintenance and capital expenditures due to BC Hydro's ageing assets.
16 These expenditures are being faced by many North American utilities that expanded
17 their systems to meet rapid load growth in the 1960's and 1970's and are necessary if
18 BC Hydro is to sustain and improve its reliability and service levels.
- 19 • an increase in pension costs due to BC Hydro's demographic changes and to accounting
20 changes required by GAAP for other post retirement benefits. These new accounting
21 rules require that all forms of post retirement benefit plans be accounted for on an
22 accrual basis. Prior to these new rules, these costs were accounted for on a cash basis.
- 23 • an increase in demand side management program spending.
- 24 • an increase in costs related to the provision of transmission services.
- 25 • an increase in the cost of managing environmental and First Nations related issues.
26 Over the past 10 years, the number of field and office employees dealing exclusively
27 with environmental, social and community issues has increased to meet the rising

⁵ See appendix D for a fuller discussion of how BC Hydro's current rates compare to those in other jurisdictions and to the increase in the BC Consumer Price Index. These comparisons are on an after-tax basis.

1 expectations of various agencies. Thus, this application reflects a cost base that has
2 risen considerably since 1993.

3 BC Hydro finance charges are also expected to increase due to an increasing interest rate
4 environment and increasing cash flow requirements to finance capital expenditures.
5 BC Hydro has actively managed its debt portfolio to take advantage of the low interest rate
6 environment over the past few years. Interest rates are expected to increase in the coming
7 years from their current historic low levels. BC Hydro is more debt leveraged than most
8 utilities and changes in interest rates will have a significant impact on finance charges.

9 **2.4 Trade Revenues**

10 One of the most important reasons that the rate freeze was sustainable as long as it was
11 has been the rapid and at times dramatic increase in trade revenues from sales to external
12 markets. During this time, gross trade revenues, through the marketing activities of Powerex
13 Corp. (Powerex), increased from \$95 million in F1994 to \$1,932 million in F2003. Those
14 increasing trade revenues have benefited ratepayers by providing a significant if somewhat
15 volatile offset against BC Hydro's revenue requirement. In the current fiscal year however,
16 BC Hydro forecasts that its net earnings will fall short of its allowed return on equity by about
17 \$226 million⁶. Although trade activities will continue to provide value into the future,
18 changing market conditions are likely to reduce expected net trade revenues from the
19 extraordinary levels previously experienced.

20 **2.5 Future Domestic Sales and Load Growth**

21 The Electric Load Forecast: 2003/04 – 2023/24, at appendix F (Load Forecast), is the basis
22 for BC Hydro's investments in its system. New resources and expanded transmission or
23 distribution capabilities are selected to reliably meet the energy and capacity needs
24 identified in the forecast.

25 Over the two fiscal periods covered by this application, F2005 and F2006, domestic sales
26 are expected to increase as shown in Table 1-3.

⁶ As mentioned, the RSA has been eliminated by the issuance of HSD #1 and HSD #2. The remaining balance of \$21 million will only partially offset the current year's shortfall.

1 **Table 1-3. Domestic Sales Forecast, F2004 to F2006**

(GWh)	F2004 Forecast	F2005 Plan	F2006 Plan
Residential	15,654	15,836	16,063
Light Industrial & Commercial	16,947	17,003	17,202
Large Industrial	14,801	14,734	14,601
Other	1,729	1,714	1,738
Total	49,131	49,287	49,604

2 Notes:

3 Source is BC Hydro 2003 Load Forecast (Reference Forecast, Accrued Sales, Probable with Power
4 Smart) and includes firm exports and excludes BC Hydro Own Use.

5

6 Over the longer term total domestic sales volumes are projected to increase from 49,131
7 GWh in F2004 to 54,128 GWh in F2014, for an average annual compound growth rate of
8 approximately 1.0%.

9 It is important to note that the reference forecast is presented here after allowing for the
10 demand restraining affects of Power Smart. Pursuant to the Energy Plan BC Hydro has an
11 obligation to encourage conservation where it makes economic sense to do so. New supply
12 resources are then acquired to meet the residual load growth.

13 The cost to customers of failing to supply is very high, and BC Hydro makes every effort to
14 provide adequate resources. Thus, the uncertainty in any forecast is recognized by planning
15 to service load even if reservoir and weather conditions are adverse. Of course, B.C. is
16 fortunate to be part of a robust and very large energy grid. Within the very significant
17 capacity of BC Hydro's interties with other jurisdictions, energy can be purchased when
18 needed from the United States or Alberta. Nevertheless because of the price volatility of
19 those markets, BC Hydro has planned its resource acquisitions to avoid having to make
20 extra-Provincial market purchases under average water conditions. The cost of
21 supplementing below average water through market purchases is higher than the likely
22 benefit of above average water conditions, and this asymmetry must be considered in
23 planning. The cost of under planning is significant loss or potential dislocation for
24 customers, whereas the risk of a resource surplus can be mitigated by trading surplus
25 energy in the market.

1 **2.6 Reliability**

2 The provision of a secure, reliable supply of electricity to all its customers has been a
3 fundamental part of BC Hydro's mission since its creation. Reliability is one of the
4 cornerstones of the Energy Plan.

5 To date, BC Hydro has achieved reliability at costs that are lower than most comparable
6 utilities. Each component of the integrated system – distribution, transmission and
7 generation – have reliability concerns and measures that are specific to its particular
8 operation. Together they make up BC Hydro's overall reliability from a customer's
9 perspective. Each part of the business faces its own distinctive challenge.

10 Distribution faces two primary challenges. First, it must ensure that its energy supply
11 arrangements are sufficiently robust as to ensure adequate supply at a reasonable cost in a
12 range of future circumstances. This challenge is discussed in chapter 4. Second, it must
13 ensure its delivery systems (i.e., wires and substations) and customer care functions are
14 organized and operated to deliver reliable service at a reasonable cost. Specifically, the
15 planning, operation and maintenance of the distribution system must be undertaken in the
16 face of ageing assets.

17 The overall reliability of BC Hydro's distribution system is currently only 3rd Quartile when
18 compared to North America utilities, and 2nd Quartile when compared to Canadian utilities.
19 Chapter 7 describes the programs in place to manage distribution system performance,
20 including maintenance activities and equipment replacement (to control equipment failures)
21 and vegetation management (to control tree contacts). BC Hydro's large and rugged service
22 territory presents a challenge in terms of limiting the duration of outages. Distribution asset
23 management spending must therefore include consideration of the needs for effective
24 outage response.

25 Reliability of service is affected by outages on the transmission system when supply to
26 distribution substations and transmission voltage customers is lost. Like distribution,
27 transmission equipment and rights-of-way must be maintained to sustain the viability of the
28 transmission system. Also like the distribution system, capital replacement must
29 compensate for BC Hydro's ageing infrastructure. Transmission additions must be planned
30 to meet growth and changes in the demands on the transmission system. Pursuant to the

1 certain agreements (identified and explained below and in chapter 6), the responsibility to
2 ensure the reliability of this component of BC Hydro's system lies with BCTC.

3 Generation outages result first in lost economic value and ultimately in a reduced ability to
4 serve, with the exception of remote loads that rely upon the generation system to
5 supplement the transmission system. As discussed in chapter 5, the mechanisms created
6 through the Heritage Contract provide commercial incentives for BC Hydro to maintain and
7 improve the reliability of its Generating units. Some of BC Hydro's generation equipment is
8 approaching the end of its economic life and will require replacement or refurbishment. The
9 timing and level of spending on maintenance and equipment replacement will be dictated
10 not just by the needs of domestic customers, but also the overall effect of these activities on
11 the opportunities to earn Trade Income.

12 In summary, all components of BC Hydro's system have performed dependably in the past,
13 despite expenditures that have been relatively low by industry standards. BC Hydro's ability
14 to continue to provide acceptable reliability at below-average cost is threatened by its ageing
15 infrastructure. At all levels of the system, targeted, and balanced decisions have to be made
16 to maintain the quality of service envisaged by the Energy Plan. As has been amply
17 demonstrated by the difficulties encountered in other jurisdictions, the failure to meet these
18 challenges is too expensive to be acceptable.

1 **3 Summary of Revenue Requirement**

2 **3.1 Timing of Rate Increase**

3 This section summarizes the revenue requirements of BC Hydro for F2005 and F2006. The
4 summary demonstrates that with its existing rates, BC Hydro will earn far less than its
5 allowed rate of return in each of the fiscal years.

6 For reasons set out in section 3.3 below, BC Hydro has been unable to file a rate application
7 until now and is unable to change its rates prior to April 1, 2004. At that time, BC Hydro
8 seeks an interim increase in its rates calculated on the basis of its revenue requirement for
9 the test year F2005.

10 For F2006, BC Hydro's costs will have foreseeably increased. Consequently, BC Hydro
11 seeks an additional adjustment in its rates to become effective April 1, 2005. For certain
12 costs that are foreseeable but cannot be reasonably estimated at this time, BC Hydro seeks
13 establishment of deferral accounts to permit actual costs to be recovered in future rates.

14 BC Hydro believes that the modest increase sought for F2006 should be considered in this
15 application because the transaction costs associated with a second rate hearing that would
16 have to be absorbed by customers outweigh any benefit a second hearing would introduce.
17 Thus, BC Hydro believes that is worthwhile to establish rates to be effective after April 1,
18 2005 as part of this proceeding.

19 **3.2 Summary Consolidated Financial Statements**

20 The need for rate increases in the period between F1993 and F2004 was, as noted above,
21 largely offset by the rapid increase in net trade revenues earned by Powerex through the
22 late 1990s and the first few years of this decade. BC Hydro and its ratepayers have also
23 benefited from significant decreases in finance charges since 1993.⁷ The downward
24 pressure on rates from these phenomena has largely been exhausted, with smaller trade
25 revenues⁸ and flat or increasing interest rates expected. Over the next two test periods

⁷ See appendix J.

⁸ The definition of trade income adopted as part of the Heritage contract is limited to incremental income resulting from trading actively as opposed to the sale of surplus domestic power. Moreover, forecast market prices are not expected to return to the extraordinary levels or volatility of recent years.

1 BC Hydro requires the applied-for-rate increases to allow it to meet its domestic service
 2 obligations, meet its reliability targets, and afford it an opportunity to earn its allowed return
 3 on equity pursuant to HSD #2.

4 BC Hydro's revenue requirement is the sum of expenditures it needs to incur in each of
 5 F2005 and F2006 to meet those service obligations and service level targets, plus its
 6 allowed return on equity, less net trade income it anticipates will be earned by Powerex, and
 7 less earnings from revenue streams other than domestic rates. That is, the revenue
 8 requirement is the sum of money BC Hydro needs to earn from its domestic ratepayers
 9 through rates for electricity service established by the Commission. These amounts are
 10 shown in Table 1-4.

11 **Table 1-4. Consolidated Revenue Requirement, F2005 to F2006**

(\$ millions)	F2005 Plan	F2006 Plan
Operations Expense <i>(Note 1)</i>	171	129
Maintenance Expense <i>(Note 1)</i>	243	140
Administration Expense <i>(Note 1)</i>	163	139
Cost of Energy	824	808
Taxes	145	147
Finance Charges	463	497
Depreciation	470	470
Other Expenditures <i>(Note 1)</i>	-	178
Total Expenditures:	\$2,479	\$2,508
plus Return on Equity	427	442
less Net Trade Income	(80)	(89)
less Miscellaneous and Inter-segment Revenues	(185)	(146)
less Other Utilities	(20)	(21)
Total Revenue Requirement	\$2,621	\$2,694

12 Notes:

13 1. The significant drop in Operations, Maintenance, and Administration expenditures between
 14 F2005 and F2006 is a result of not consolidating BCTC's accounts with BC Hydro's after March
 15 31, 2005, when BCTC begins providing service under its own tariff. Other Expenditures reflect
 16 payments made to BCTC. See chapter 6 for a further explanation.

17 Under its current rate structure BC Hydro anticipates it would earn the following revenues
 18 from its domestic ratepayers, as shown in Table 1-5:

19 **Table 1-5. Domestic Ratepayer Revenues, F2005 to F2006 (F2004 Rates)**

(\$ millions)	F2005	F2006
Domestic Ratepayer Revenues	\$ 2,444	\$ 2,463

1 The differences between BC Hydro's revenue requirement and its expected domestic
2 revenues under its current rate structure in each of F2005 and F2006 (\$177 million and
3 \$231 million, respectively) are the amounts that need to be made up by the applied-for rate
4 increase. In particular, BC Hydro anticipates that if granted its applied-for rate increases its
5 domestic tariff revenues for each of F2005 and F2006 will be \$2,621 million and \$2,694
6 million, equal to its revenue requirement in each of the two test periods.

7 **3.3 Principal Cost Drivers Related to the Test Year Revenue Requirements**

8 Relative to F1994, the principal drivers causing the revenue that must be recovered from
9 domestic ratepayers are:

- 10 • Increased cost of energy;
- 11 • Increased costs to maintain reliability of the system;
- 12 • Increased pension costs;
- 13 • Increased finance costs;
- 14 • Increased investment in Power Smart;
- 15 • Increased costs to be incurred as a result of the creation of BCTC; and
- 16 • Increased costs relating to management of environmental and First Nation related
17 issues.

18 Each of these cost drivers is discussed in the chapters that follow with an emphasis on
19 those within BC Hydro's control. These cost drivers did not come into existence overnight.
20 However, their accumulating effect has been obscured in the last few years by the abnormal
21 market conditions that gave rise to extraordinary trade income. Low projected net income in
22 F2004 and the rapid depletion of the RSA in the previous two years highlights a clear
23 conclusion: BC Hydro's current rates are not just and reasonable because they do not allow
24 it an opportunity to earn a just and reasonable return on its investment. Rates should be
25 increased now. BC Hydro has not applied for an increase in its rates earlier only because it
26 was unable to file for rate relief until the government response to the Heritage
27 Recommendations was known and it cannot apply new rates until the new customer billing

- 1 system is in place and fully functioning. As such, the rate increase can only be applied
- 2 starting April 1, 2004.

1 **4 Overview of BC Hydro Organizational Structure**

2 This section describes BC Hydro's organizational structure, for the primary purpose of
3 describing the basis of the forecasts in this application. Significant changes to that structure
4 since 1994, and the focus of this section, include:

- 5 • the implementation of a "line of business" internal management structure;
- 6 • the creation of BCTC and the transfer to it of certain operating and planning
7 responsibilities; and
- 8 • BC Hydro agreements with Accenture Business Services of British Columbia (ABS) for
9 the purpose of outsourcing certain back-office functions to the private sector.

10 In addition, this section includes a short description of BC Hydro's subsidiaries and their
11 functions within BC Hydro.

12 **4.1 Line of Business Management Model**

13 In April 2002 BC Hydro implemented a change to a "line of business" management model.
14 The new structure is largely in place at the time of this application and is a specific policy
15 action of the Energy Plan. The current management structure is depicted in the organization
16 chart found in schedule 1-1. The focal points of the new management structure are the new
17 generation and distribution lines of business. These lines of business are at the centre of the
18 new structure because of their fundamental importance to BC Hydro's ultimate purpose,
19 being the provision of reliable, low-cost electricity to its customers.

20 BC Hydro's thinking with respect to the role of the lines of business under a corporate
21 umbrella was refined and presented in its Heritage Contract proposal. The application of the
22 line of business model will not be allowed to detract from BC Hydro's mandate of maximizing
23 the value of its system and the provincial resources which that system utilizes to deliver low-
24 cost reliable energy for the benefit of all BC Hydro stakeholders. Thus, BC Hydro as a
25 corporation will determine its strategic objectives and each line of business will be charged
26 with achieving those corporate objectives that fall within its mandate. The line of business
27 model allows BC Hydro to meet its objectives by rewarding superior performance through
28 clear accountabilities and focus. Indeed, the overall purpose of the line of business
29 structure is the maximization of value – the realization of the most economic trade-off
30 between low-cost electricity; secure, reliable electricity supply; increased private sector

1 opportunities in wholesale electricity supply markets; and environmental and social
2 responsibility. It does so by making it easier to measure and reward superior performance
3 through clear accountabilities within the major business units.

4 BC Hydro has also created a number of new internal service organizations. The function of
5 the service organizations is to support the lines of business, and in some cases each other,
6 by providing required services, on a cost-effective basis. The service organizations
7 described in this application are Engineering Services, Field Services and the Materials
8 Management Business Unit.

9 In addition to the corporate office's responsibility for providing corporate-wide decision-
10 making on a wide-range of issues, the corporate office also provides services to the lines of
11 business.

12 Consistent with the line of business model, BC Hydro has recently contracted with ABS to
13 provide certain back-office services to BC Hydro, BCTC and BC Hydro's subsidiaries.
14 These services were all previously provided in-house. The ABS transaction and its role in
15 this revenue requirement application are described further below.

16 Under the line of business management structure each line of business and each service
17 organization is meant to operate so as to maximize the value of BC Hydro's business as a
18 whole while providing clear accountability for the proper functioning of each component of
19 the business. For the lines of business, this means determining their service obligations for
20 the ensuing period or periods, and developing plans and budgets sufficient to meet those
21 obligations, including the procurement of services from internal service organizations and
22 ABS. For the service organizations this means treating the lines of business as if they were
23 clients, and developing plans and budgets for the ensuing period or periods sufficient to
24 meet the needs of the lines of business and BCTC. For the corporate office this means
25 leadership, coordination, approval and support of the line of business plans through
26 common corporate functions such as finance, regulatory, human resources and legal
27 services.

28 The line of business management structure is reflected in the organization and presentation
29 of information in this application. Thus, the bulk of the application, chapters 3 to 9,
30 describes the activities of the lines of business and the service organizations in the test
31 period, and the anticipated costs of those activities. For example, chapter 7, "Electricity

1 Distribution and Non-Integrated Areas”, describes what BC Hydro Distribution sees as its
2 distribution service obligations in the ensuing test periods, and the expenditures it expects it
3 will incur in order to meet those service obligations, including expenditures in respect of
4 services provided by the internal service organizations and an allocation of corporate costs.
5 By contrast, the Engineering Services section of chapter 9 is focused not on the level of
6 services it expects to provide in the ensuing test periods – that is covered in the line of
7 business sections – but instead focuses on how Engineering Services intends to provide
8 those required services in a way that maximizes value.

9 Chapter 2 sets out and discusses the forecast consolidated financial statements of
10 BC Hydro for the test periods, and also provides a reconciliation between the consolidated
11 financial statements and the following chapters that describe the costs of the lines of
12 business and service organizations. The consolidated financial statements include BCTC
13 for F2005.

14 **4.2 British Columbia Transmission Corporation**

15 On July 24, 2003, the Transmission Corporation Act (BCTC Act) was brought into force,
16 thereby creating the framework for BCTC, one of the newest B.C. Crown Corporations. The
17 creation of BCTC is a key element of the Energy Plan.

18 The BCTC Act:

- 19 • confirms that BCTC shall be a Crown-owned corporation whose shares may not be sold
20 or otherwise disposed of by government;
- 21 • provides that agreements between BC Hydro and BCTC that allocate between them the
22 roles and responsibilities that were previously fulfilled by BC Hydro are authorized, valid,
23 and beyond the scope of the Commission’s jurisdiction to prohibit; and
- 24 • confirms that the Commission is to have its usual full range of authority to regulate the
25 rates and services of both BCTC and BC Hydro.

26 On November 20, 2003 a number of agreements between BC Hydro and BCTC were
27 designated by the Lieutenant Governor in Council under sub-section 3(1) of the BCTC Act
28 (BCTC Designated Agreements). The Designated Agreements are more fully described in
29 chapter 6 and are produced in their entirety at www.bcuc.com.

1 With some minor exceptions, none of the agreements necessary to implement the BCTC
2 transaction provide for the sale of BC Hydro's transmission assets to BCTC. The Legacy
3 Act, section 2, prohibits BC Hydro from selling or otherwise disposing of its transmission
4 system, as well as the Heritage Resources and its distribution system, with some necessary
5 exceptions. The creation of BCTC is consistent with policy action #3 of the Energy Plan,
6 which calls for continued public ownership of BC Hydro's generation, distribution and
7 transmission assets.

8 Pursuant to the BCTC Designated Agreements and consistent with the Energy Plan, in the
9 short term BCTC will provide transmission services through BC Hydro, and under
10 BC Hydro's existing WTS tariffs, until April 1, 2005. This initial period is referred to in the
11 application as "phase 1". During phase 1 the entire transmission revenue requirement is
12 intended to be recovered through BC Hydro's existing WTS tariffs.

13 BC Hydro and BCTC expect that BCTC's tariffs will be approved on or about April 1, 2005
14 thus commencing "phase 2". During phase 2 and described in chapter 6, section 11, rates
15 for WTS will be designed by BCTC to recover the BCTC components of the transmission
16 revenue requirement and the BC Hydro components of the transmission revenue
17 requirement.

18 This application, and in particular the rate increase BC Hydro seeks for F2006, is based on
19 the assumption that BC Hydro's net WTS cost forecast will remain unchanged between
20 phase 1 and phase 2. If the assumption is correct there will be no impact on BC Hydro's
21 revenue requirement for F2006, and no need to adjust the rates approved for the period
22 commencing April 1, 2005. To the extent the assumption is incorrect, and changes to
23 BC Hydro's net WTS costs cause a change in its F2006 revenue requirement, BC Hydro
24 proposes to carry forward such changes, whether positive or negative. The BCTC
25 Transition Deferral Account, described in chapter 2, is the mechanism BC Hydro proposes
26 to use for this purpose. Again, no adjustment would be necessary to the rates approved for
27 the period commencing April 1, 2005.

28 **4.3 Accenture Business Services**

29 As noted above, policy action #4 of the Energy Plan provides for BC Hydro to contract out
30 certain non-core functions for the purposes of maximizing flexibility, focus, and cost-
31 effectiveness. Consistent with that direction, BC Hydro has entered into a set of agreements

1 with ABS under which it provides services to BC Hydro that were formerly done by
2 BC Hydro itself. ABS provides service to BC Hydro, BCTC, and BC Hydro subsidiaries
3 pursuant to service agreements. The levels of service are determined by the business units,
4 while the costs for such services are determined through the agreements. These
5 agreements provide for prescribed savings from those costs BC Hydro forecasts it would
6 have incurred to maintain the service at historical levels. This application presents and
7 describes the cost of the ABS contracts both as line item costs in the line of business and
8 service organization forecasts, and in an aggregated manner (chapter 9).

9 **4.4 Subsidiaries**

10 BC Hydro has two subsidiaries, Powerex and Powertech Labs Inc.⁹, which have an impact
11 on the revenue requirements in the two test periods. The former is a leading power marketer
12 in western Canada and the western United States. The latter is a research and engineering
13 technology services company. Neither are public utilities within the meaning of the Utilities
14 Commission Act, and neither are directly involved in the provision of electricity to BC Hydro's
15 ratepayers. Their anticipated net revenues are consolidated with BC Hydro's for
16 rate-making purposes pursuant to HSD #2, and have the effect of making BC Hydro's
17 revenue requirements lower in each of the two test periods than they otherwise would be.¹⁰

18 **4.5 Managing a Disaggregated Structure**

19 BC Hydro believes that the various restructuring initiatives described in the preceding
20 sections will result in focussed, efficient organizations all operating within the heart of their
21 core competencies. Nevertheless, BC Hydro is aware of the need to ensure that
22 disaggregation does not lead to a loss of coordination in the overall operation of the electric
23 system in B.C. or diminish service levels to its customers.

24 Each aspect of the restructuring is designed to encourage full coordination between all the
25 entities that participate in providing power to the end user. Within BC Hydro, the lines of

⁹ BC Hydro has other subsidiaries created for specific projects such as Vancouver Island Generation Project which are immaterial to this application.

¹⁰ Pursuant to paragraph 6 and the definition of "Trade Income" in HSD #2, the Commission is obliged to include in its calculation of BC Hydro's revenue requirement an amount equal to a forecast of Powerex's Trade Income, up to \$200 million and not less than zero. Powerex's forecasts of its Trade Income in F2005 and F2006 are \$80 million and \$89 million respectively – see chapter 9 for more detail.

1 business and service organizations reward their management based on BC Hydro's overall
2 success in meeting its obligations. As fully explained in BC Hydro's proposal to the Heritage
3 Contract proceeding, full coordination with BC Hydro and between BC Hydro and its
4 subsidiaries, as exemplified by Powerex, is a day-to-day necessity and focus.

5 In its arrangements with ABS, BC Hydro has retained the ability to set the standard that
6 must be achieved and has structured the relationship so that specific accountable BC Hydro
7 employees will be responsible for ensuring that clear directions are given to ABS and its
8 performance carefully monitored. The means of accomplishing this is described in section
9 8.4 of chapter 9.

10 The BCTC Designated Agreements provide BC Hydro and BCTC with the opportunity to
11 work together to ensure that the level of service provided to customers is seamless and
12 continues to achieve the reliability standard that BC Hydro's customers have come to
13 expect. BCTC is an independent entity. BC Hydro as owner of the wires and as BCTC's
14 biggest customer, will work with BCTC to ensure that the needs of all BC Hydro's customers
15 continue to be met reliably and efficiently. Where BC Hydro and BCTC identify alternative
16 options for the future, the BCUC will be available to ensure that the appropriate solutions are
17 developed for the ratepayer. The initial and most expensive steps in the large restructuring
18 BC Hydro has undertaken will be complete in F2004. These steps have had no effect on
19 rates. Looking ahead, implementation of these diverse arrangements with BCTC and ABS,
20 as new participants within the electric industry in B.C, and the development of the line of
21 business structure within BC Hydro itself, are important and challenging initiatives. The
22 increasingly efficient organizations that result, each operating within their areas of core
23 expertise, should ensure that BC Hydro's customers continue to receive low cost, reliable
24 service in the years ahead. However, delivering on the potential of these structures will
25 require ongoing discipline and management. For that reason, BC Hydro sees the near
26 future covered by the test period to be a time for implementing the initiatives already begun,
27 not undertaking significant new ones. The focus of management during this transitional
28 period will be on monitoring progress and ensuring effective interaction of the various new
29 structures identified in this application. To the extent BC Hydro's new structures are not
30 meeting the objectives identified in this application, BC Hydro will amend the structures to
31 ensure that the value of the electric system that has been developed by BC Hydro is not
32 compromised. In that way, BC Hydro's customers will be assured that there is no
33 interruption to the high quality reliable electric service they have come to expect.

1 **5 Conclusion**

2 This application seeks increases to the rate levels of BC Hydro which, if approved, will
3 remain lower than in almost all jurisdictions in North America. Those rates are necessary to
4 recover prudently incurred costs that will allow BC Hydro to meet the Energy Plan, and in
5 particular will allow BC Hydro to maintain system reliability and to responsibly manage
6 environmental and social impacts. At the same time they will allow BC Hydro to maintain
7 and improve service levels. For these reasons BC Hydro respectfully submits that the rates
8 it proposes to charge based on F2005 and F2006 test years are just and reasonable, and
9 that the Commission ought to approve them pursuant to sections 58 and 60 of the *Utilities*
10 *Commission Act*.

1 6 Names, Titles and Addresses of Contacts for this Application

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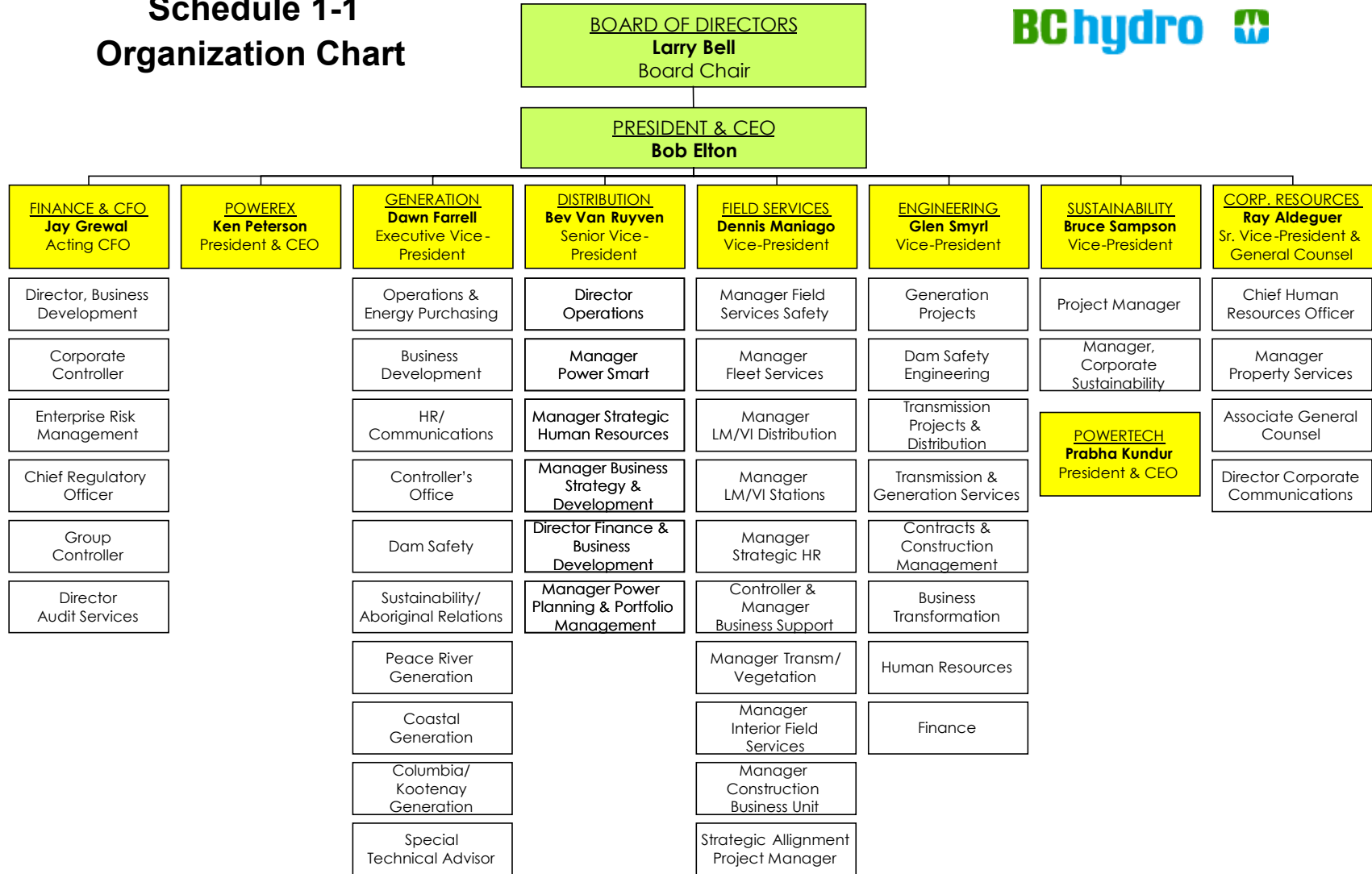
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Schedule 1-1 Organization Chart



Senior Executive & Direct Reports