Columbia Power Corporation

2020/21 – 2022/23 SERVICE PLAN

February 2020

For more information on Columbia Power Corporation contact:

Suite 200, 445 13th Avenue
Castlegar, B.C.

1.250.304.6060

cpc.info@columbiapower.org

Or visit our website at
columbiapower.org

Board Chair Accountability Statement

The 2020/21 – 2022/23 Columbia Power Corporation (Columbia Power) Service Plan was prepared under my direction in accordance with the *Budget Transparency and Accountability Act*. The plan is consistent with government's strategic priorities and fiscal plan. I am accountable for the contents of the plan, including what has been included in the plan and how it has been reported. I am responsible for the validity and reliability of the information included in the plan.

All significant assumptions, policy decisions, events and identified risks, as of January 31, 2020 have been considered in preparing the plan. The performance measures presented are consistent with the *Budget Transparency and Accountability Act*, Columbia Power's mandate and goals, and focus on aspects critical to the organization's performance. The targets in this plan have been determined based on an assessment of Columbia Power's operating environment, forecast conditions, risk assessment and past performance.

T. Stanley

Tim Stanley
Board Chair

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Strategic Direction and Alignment with Government Priorities

The Government of British Columbia remains focused on its three strategic priorities: making life more affordable, delivering better services, and investing in a sustainable economy. Crown corporations are essential to achieving these priorities by providing quality, cost-effective services to British Columbia families and businesses.

Additionally, where appropriate, the operations of Crown corporations will contribute to:

- The objectives outlined in the government's newly released *A Framework for Improving British Columbians' Standard of Living*,
- Implementation of the *Declaration on the Rights of Indigenous Peoples Act* and the Truth and Reconciliation Commission Calls to Action, demonstrating support for true and lasting reconciliation, and
- Putting B.C. on the path to a cleaner, better future – with a low carbon economy that creates opportunities while protecting our clean air, land and water as described in the CleanBC plan.

By adopting the Gender-Based Analysis Plus (GBA+) lens to budgeting and policy development, Crown corporations will ensure that equity is reflected in their budgets, policies and programs.

Columbia Power Corporation (Columbia Power), a commercial Crown corporation, operates under the *Business Corporations Act* and owns and operates hydroelectric power generation assets in the Columbia Basin. This service plan supports the continued safe and reliable operation of these facilities and the generation of clean hydropower, and provides continued support for community sponsorship and a dividend return to the Province.

Each year, Columbia Power receives a Mandate Letter, which sets out the organization's corporate mandate, including making life more affordable and building a strong, sustainable, innovative economy that works for everyone. The Mandate Letter directs Columbia Power to conduct its operations and financial activities in a manner that is consistent with the legislative, regulatory and policy framework established by government.

Columbia Power's strategic priority in 2020/21 is to ensure long-term profitability, reliability, safety and environmental sustainability, of the facilities in which Columbia Power has an ownership share, through effective and efficient management of plant operations and maintenance.

Columbia Power is aligned with the Government's key priorities:

Government Priorities	**Columbia Power Aligns with These Priorities By:**
Delivering the services people count on	Ensuring efficient and reliable plant operations. (Goal 1)
A strong, sustainable economy	Optimizing Shareholder value. (Goal 2)

Operating Environment

Fiscal 2020/21 will be a year of transition for Columbia Power. Columbia Power will remain the appointed Manager of the four power assets: Arrow Lakes Generating Station (ALH); Brilliant Generating Station (BRD); Brilliant Expansion Generating Station (BRX); and Waneta Expansion Generating Station (WAX). The Shared Services initiative between Columbia Power and the Trust, which began in 2017, will conclude in 2020. The remaining 13 Columbia Power staff have been hired by the Trust to deliver asset management services under contract to Columbia Power.

Columbia Power's mandate to ensure the long-term reliability and profitability of the power assets, while maintaining its commitment to safety, regulatory compliance and environmental sustainability, will remain unchanged.

Under this new structure, community initiatives including the Columbia Power Community Sponsorship Program, Scholarship and Bursary Program and First Nations Sponsorship Program will continue. All environmental commitments, projects and initiatives associated with the operation of the power assets will continue, and First Nations Agreements and stakeholder commitments will remain unchanged.

Columbia Power will continue to implement the Strategic Asset Management Plan (SAMP) over 2020/21 through 2022/23 to support asset performance and profitability while managing the risks inherent in owning and operating hydroelectric facilities. Priority work for 2020/21 will include a second year of benchmarking to understand performance and costs relative to industry peers, providing input to an outsourcing review, oil tracking system improvements and a focus on Asset Management Plan development, revision and utilization.

With completion of the acquisition of WAX in April 2019, Columbia Power will accelerate the addition of WAX into the SAMP. The goal is to incorporate WAX into the SAMP with its own site-specific objectives in fiscal 2020/21, and begin to execute on those strategies that year.

Columbia Power will continue to actively assess its operating environment to ensure risks that could impact performance of the assets are identified and appropriate mitigation actions are in place. For the fiscal 2020/21 to 2022/23 planning period, Columbia Power has evaluated its risks and how to manage these risks using a variety of strategies, as outlined in its Risk Matrix/Management Table.

Performance Plan

Columbia Power's goals are to ensure long-term profitability, reliability, safety and environmental sustainability of the facilities through effective and efficient management of plant operations and maintenance. Performance is measured through efficient and reliable plant operations (Goal 1) and optimizing shareholder value (Goal 2).

Columbia Power's performance measures are linked to the specific goals, objectives and strategies outlined in this plan. Where possible, performance targets are verified by external benchmarks. The data underlying the company's performance is independently audited or verified by a third party.

Goal 1: Efficient and reliable plant operations.

Objective 1.1: Maximize generation availability at Arrow Lakes Generating Station (ALH), Brilliant Expansion Generating Station (BRX), and Waneta Expansion Generating Station (WAX).

Oversee management of power assets effectively and efficiently and keep Operations, Maintenance and Administration (OMA) costs within industry norms through an Asset Management System focused on improving availability of the generating units and financial performance.

Key Strategies:

- Addressing the potential for equipment failure by doing the right maintenance at the right time and implementing a Reliability Centered Maintenance program at BRX.
- Performing an operations and maintenance outsourcing review based on benchmarking results.
- Implementing an equipment condition assessment methodology to support a capital investment strategy.
- Preparing for the potential adverse effects of zebra and quagga mussels entering our region through a risk assessment considering climate change and design feasibility of prevention methods.

Performance Measure	Benchmark[2]	2018/19 Actuals	2019/20 Forecast	2020/21 Target	2021/22 Target	2022/23 Target
1.1a Equivalent Availability Rate: Hours	ALH: 91.5% BRX: 91.5% WAX[1]: 91.5%	ALH: 92.4% BRX: 91.47% WAX: N/A	ALH: 93.9% BRX: 94.0% WAX: 96.6%	ALH: 93.6% BRX: 90.5% WAX: 95.9%	ALH: 94.0% BRX: 95.2% WAX: 96.4%	ALH: 92.6% BRX: 93.2% WAX: 96.4%
1.1b Equivalent Availability Rate: MWh[3]	ALH: 99.0% BRX: 97.5%	ALH: 99.4% BRX: 99.1%	ALH: 98.6% BRX: 99.0%	ALH: 98.9%[4] BRX: 98.4%[4]	ALH: 99.0% BRX: 98.7%	ALH: 98.7% BRX: 98.6%
1.1c Equivalent Availability Rate: Revenue[5]	See footnote[6]	WAX: N/A	WAX: 97.3%	WAX: 97.3%	WAX: 97.6%	WAX: 97.6%
1.1d OMA Costs: $ per MWh	See footnote[7]	ALH: $6.80 BRX: $11.525 WAX: N/A	ALH: $6.83 BRX: $11.25 WAX: $7.95	ALH: $7.69 BRX: $12.92 WAX: $10.021	ALH: $7.77 BRX: $13.45 WAX: $10.17	ALH: $7.86 BRX: $13.58 WAX: $10.12

[1] The remaining 51 per cent of WAX was purchased by Columbia Power and the Trust from Fortis Inc. in April 2019. Columbia Power did not track performance measures for WAX during 2018/19.
[2] Columbia Power participates in benchmarking periodically to gauge plant performance relative to industry. The most recent external study was finalized in January 2020 by GKS Navigant.
[3] Equivalent Availability Rate MWh uses an internal benchmark Columbia Power establishes based on historic and forecasted performance and accounts for both planned and unplanned outages.
[4] The unplanned outage rate target has been reduced to 1.00% annually for BRX and ALH. This is an improvement of 0.33% from fiscal year 2019/20 (1.33%).
[5] This measure has been added to track WAX's availability relative to its Capacity Purchase Agreement with FortisBC in addition to its Energy Purchase Agreement with BC Hydro. The unplanned outage rate for WAX is 0.70% annually.
[6] Equivalent Availability Rate Revenue for WAX will be a measure used going forward. Due to the recent purchase of WAX, Columbia Power does not have adequate historical data to establish an internal benchmark at this time.
[7] GKS Navigant benchmarking study's methodology for determining OMA costs differs from Columbia Power's internal methodology. As the report was received in January 2020, Columbia Power will require additional time to reconcile Navigant's findings and establish benchmarks for ALH, BRX and WAX.

Linking Performance Measures to Objectives:

1.1a Equivalent Availability Rate - Hours is an industry standard measure used in GKS Navigant external benchmarking to gauge the percentage of time that the plant is available to provide energy to the grid. It also measures the efficiency of operator response to unplanned outages and in carrying out planned outages.

1.1b Equivalent Availability Rate - MWh helps gauge revenue generation and utilizes an internally established benchmark based on historic and forecasted performance. The greater the percentage of entitlement MWh available from each facility annually relative to the total entitlement MWh possible, the greater the plant's revenue from the sale of the entitlement energy. The targets reflect an optimal scenario of reliable plant operations while efficiently completing maintenance outages. The long-term goal is to meet or exceed annual targets. The fluctuation of targets is due to the variability in the duration of planned outages.

1.1c Equivalent Availability Rate – Revenue will gauge WAX availability considering business decisions on planned and unplanned outage duration and timing and will be comprised of both entitlement energy and capacity sales for WAX. This availability will be calculated by comparing the actual revenue from entitlement energy and capacity sales to the maximum possible revenue from entitlement energy and capacity sales.

Performance Measure 1.1c is a new measure this year with completion of purchase of Fortis Inc.'s 51 per cent interest in WAX in April 2019. At this time, Columbia Power does not have sufficient data or history to establish an internal benchmark for this measure. The targets reflect an optimal scenario of reliable plant operations while efficiently completing maintenance outages. The long-term goal will be to meet or exceed annual targets. The fluctuation of targets is due to variability in the duration of planned outages.

1.1d OMA Costs - $ per MWh is an industry standard measure regarding plant efficiency. Keeping OMA costs low helps keeps the cost of generating power low. Columbia Power will reference GKS Navigant's January 2020 study to reconcile internal historical methodologies to establish benchmarks for ALH, BRX and WAX.

Discussion:

Columbia Power and the Trust are parties to agreements with BC Hydro and FortisBC under which BRD, ALH, BRX and WAX receive firm monthly energy and capacity entitlements. Under these arrangements non-BC Hydro dam owners transfer hydrology risk (variable annual water flows) and BC Hydro directs the operation of all regional generating plants to optimize overall generation. If a plant is not available to generate due to planned or unplanned outages, entitlements are reduced accordingly. This is the reason for the focus on plant availability in the above performance measures.

Plant availability measures allow Columbia Power to assess asset reliability performance relative to industry benchmarks and the Corporation's own performance based on internal criteria.

Performance Measure 1.1a compares the percentage of time the generating unit is available in hours to the benchmark. The benchmark of 91.5 per cent is derived from the median equivalent rate for medium-sized, high-capacity factor hydro plants from the GKS Navigant Study. There were 37 station groups in this category. The 2020/21 through 2022/23 targets for ALH, BRX and WAX were derived from planned outage schedules while allowing for an expected unplanned outage rate throughout the year.

The ALH and BRX unplanned outage rate target was reduced from 1.33 per cent in 2019/20 to 1.00 per cent for the 2020/21 budget year resulting in a higher availability rate (Hours) due to a lower expectation of unplanned outage occurrence. The target was adjusted to recognize Columbia Power's continued strong results and strive for even better performance in the future. The WAX unplanned outage rate target sits at 0.70 per cent.

Columbia Power uses its own historic and forecasted production level data to develop internal benchmarks for Performance Measure 1.1b. The benchmark reflects an optimal scenario of reliable plant operations while efficiently completing maintenance outages. This metric allows a comparison of Columbia Power's revenue generating performance to the internal target. The long-term goal is to meet or exceed the annual targets. The fluctuation of targets is due to the variability in the duration of planned outages.

As this measure is entitlement-based, it is not comparable to external industry metrics but useful for Columbia Power's purposes.

Performance Measure 1.1c is a new measure since the completion of purchase of Fortis Inc.'s 51 per cent interest in the facility in April 2019. Similar to Performance Measure 1.1b, the targets reflect an optimal scenario of reliable plant operations while efficiently completing maintenance outages. This metric will allow a comparison of Columbia Power's revenue generating performance to the internal target. The long-term goal is to meet or exceed the annual targets. The fluctuation of targets is due to the variability in the duration of planned outages. Because of the recent acquisition of WAX, Columbia Power does not yet have adequate history or data to establish an internal benchmark. Like the Equivalent Availability Rate (MWh), this measurement is entitlement-based and is not comparable to external industry metrics.

Performance Measure 1.1d is a measure of plant operational cost efficiency which consists of the Operations, Maintenance and Administration costs for each facility (net of allowance for outages) divided by entitlement energy for that facility, in dollars per MWh.

The January 2020 GKS Navigant Study calculates a cost-effectiveness measure called Partial Function Cost/MWh. This differs in cost categorization and in the normalization by energy produced (actual generation compared to entitlement) from the OMA$/MWh target but is useful for industry benchmark comparison. In order to provide specific performance metrics, further work is required to reconcile Columbia Power's methodology with that of Navigant's. Notwithstanding this required reconciliation, it is certain the facilities are currently performing above industry standards.

Performance Measure 1.1d targets for ALH for 2020/21 and 2021/22 have decreased slightly since the last Service Plan from $8.00 and $8.30 to $7.69 and $7.77 as we continue to proactively manage budgets through maintenance planning and asset management. The forecast for ALH in 2019/20 is also below the target of $7.50 set in the 2019/20 Service Plan due to reduced operations costs. Targets for BRX for 2020/21 and 2021/22 have increased slightly since the last Service Plan from $13.80 and $12.20 to $12.92 and $13.45 because of a planned control system replacement project. Variabilities in estimates for OMA costs when projecting four years out can be impacted by small changes in the scope of projects.

Goal 2: Optimize Shareholder value.

Objective 2.1: Deliver effective financial management.

Key Strategies:

- Maximize revenue by controlling facility operating costs and achieving reliable operations.
- Manage working capital to meet Columbia Power's mandate while returning free cash-flow to the shareholder through an annual dividend.

Performance Measure ($000)	2018/19 Actuals	2019/20 Forecast	2020/21 Target	2021/22 Target	2022/23 Target
2.1a Net Income	$55,475	$52,482	$54,238	$55,549	$57,619
2.1b Earnings Before Interest Taxes Depreciation and Amortization	$66,784	$70,749	$72,854	$74,086	$76,074

Linking Performance Measures to Objectives

2.1a Columbia Power's net income is the most appropriate measure to gauge the company's financial performance. Net income is closely monitored throughout the reporting period and audited annually.

2.1b Earnings Before Interest Taxes Depreciation and Amortization (EBITDA) is a measure of operating income which focuses on items of importance to ongoing operations and excludes items that do not impact ongoing operations, such as financing decisions and accounting policies. EBITDA also approximates cash flow from operations before payment of financing costs and necessary capital investment. After financing costs are paid and capital investment is made, the balance is available to be paid as a dividend to the Shareholder.

Discussion:

Columbia Power's financial results are monitored frequently throughout the fiscal year. Variances from net income targets are reported quarterly to the Finance and Audit Committee, the Board of Directors and the Province. In addition, five-year forecasts are prepared quarterly to ensure financial objectives are in-line with our long-term planning.

Financial Plan
Summary Financial Outlook

($000)	2019/20 Forecast	2020/21 Budget	2021/22 Plan	2022/23 Plan
Total Revenue				
Operating Revenue				
Recoveries	$ 2,849	$ 0	$ 0	$ 0
Income for Equity Accounted Investees				
Arrow Lakes Power Corporation	17,182	17,069	17,139	17,382
Brilliant Expansion Power Corporation	9,556	9,293	9,117	9,471
Brilliant Power Corporation	13,057	13,520	13,905	14,633
Waneta Expansion Power Corporation	30,303	34,758	35,765	36,482
Waneta Expansion Limited Partnership[1]	2,567	0	0	0
Total Revenue	**$ 75,514**	**$ 74,640**	**$ 75,926**	**$ 77,968**
Total Expenses				
Staff and General Administration	$ 2,956	$ 413	$ 421	$ 428
Development Costs	466	0	0	0
Sponsorships and Bursaries	122	122	122	122
Zebra Quagga Mussel - Provincial Defense Contribution	250	250	250	250
Grants in Lieu of Property Taxes	972	1,002	1,047	1,094
Interest Expense	20,122	20,475	20,397	20,315
Amortization of Property, Plant and Equipment	51	40	40	40
Less: Interest Revenue	(1,906)	(1,900)	(1,900)	(1,900)
Total Expenses	**$ 23,033**	**$ 20,402**	**$ 20,377**	**$ 20,349**
Net Income	**$ 52,481**	**$ 54,238**	**$ 55,549**	**$ 57,619**

[1]Waneta Expansion Limited Partnership (WELP) was purchased by Columbia Power and the Trust for $991 million in April 2019 as part of the finalization of purchase of Fortis Inc.'s 51 per cent share in the Waneta Expansion Generating Station. WELP earnings are now reflected in the Waneta Expansion Power Corporation line.

Key Forecast Assumptions, Risks and Sensitivities

The issues, impacts and potential magnitude of risks and how these risks are managed are provided in the Risk Matrix/Management Table. Future dividends to the Province will be determined based on annual earnings, working capital requirements and reserves for future sustaining capital requirements.

Sensitivity Analysis

The financial outlook indicates stable net income for the forecast period. Key assumptions affecting the forecasted operations are as follows:

- Plant availability for ALH, BRX and WAX are as forecasted. Power sales for BRD are in the form of a lease and not impacted by plant availability.
- Capital and operating needs of the assets are as forecasted.
- Operating cost inflation is approximately two per cent per year, with water rentals increasing by 4% based on the past 5 year average.
- Columbia Power maintains adequate working capital levels to meet operational and capital requirements and achieve goals within the service plan periods.

Plant availability has a large impact on forecasted revenues. Unanticipated Operations and Maintenance cost increases and capital requirements could impact net revenues. An increase in unplanned outages of one per cent would decrease revenues in 2020/21 by $700,000 at ALH, $335,000 at BRX and $1,074,000 at WAX.

To compensate for the potential variability of plant availability, a provision for unplanned outages is incorporated into the revenue projections for ALH, BRX and WAX. To impact the revenue results from operations, plant availability will have to fall below the targets presented in the Goal 1 performance measures.

Management's Perspective on the Financial Outlook

Management is projecting growth from our Equity Accounted Investees as a direct result of our focus on Strategic Asset Management Planning and Reliability Centered Maintenance programs that target increased plant reliability. We expect this growth trend to continue into future years. The increase in power project revenues from completion of the purchase of WAX in April 2019 has been reflected in financial forecasts for Columbia Power. With the conclusion of the Shared Services Agreement in January 2020 and completion of the Trust's hiring of the remaining 13 Columbia Power staff, Staff and Administration expenses are anticipated to be reduced for the remainder of 2019/20 and in future years.

Appendix A: Hyperlinks to Additional Information

Corporate Governance

- Corporate Governance

Organizational Overview

- Organizational Overview
- Mandate Letter
- Risk Matrix/Management Table

Appendix B: Subsidiaries and Operating Segments

Operating Segments

Columbia Power owns four hydropower facilities in partnership with the Trust. These facilities are owned by corporations jointly owned by Columbia Power and indirect subsidiaries of the Trust, as follows:

Arrow Lakes Power Corporation: owns ALH and associated 48-kilometre transmission line from the power plant to BC Hydro's Selkirk Substation.

Summary Financial Outlook Table for Arrow Lakes Power Corporation

($000)	2019/20 Forecast	2020/21 Budget	2021/22 Plan	2022/23 Plan
Total Revenue	$ 69,035	$ 69,499	$ 69,630	$ 69,989
Operating Expenses	11,247	12,047	12,299	12,556
Amortization & Financing Expenses	23,425	23,314	23,053	22,669
Net Income	**$ 34,363**	**$ 34,138**	**$ 34,278**	**$ 34,764**
Capital Expenditures	**$ 2,700**	**$ 3,620**	**$ 1,800**	**$ 1,400**

Brilliant Expansion Power Corporation: owns BRX.

Summary Financial Outlook Table for Brilliant Expansion Power Corporation

($000)	2019/20 Forecast	2020/21 Budget	2021/22 Plan	2022/23 Plan
Total Revenue	$ 32,996	$ 33,392	$ 33,477	$ 33,675
Operating Expenses	9,758	10,602	10,855	10,129
Amortization & Financing Expenses	4,126	4,205	4,389	4,605
Net Income	**$ 19,112**	**$ 18,585**	**$ 18,233**	**$ 18,941**
Capital Expenditures	**$ 300**	**$ 2,030**	**$ 4,140**	**$ 2,531**

Brilliant Power Corporation (BPC): owns BRD and the Brilliant Terminal Station.

Summary Financial Outlook Table for Brilliant Power Corporation

($000)	2019/20 Forecast	2020/21 Budget	2021/22 Plan	2022/23 Plan
Total Revenue	$ 45,706	$ 46,513	$ 46,807	$ 47,720
Operating Expenses	13,138	13,575	13,880	14,183
Amortization & Financing Expenses	6,455	5,899	5,118	4,272
Net Income	**$ 26,113**	**$ 27,039**	**$ 27,809**	**$ 29,265**
Capital Expenditures	**$ 3,900**	**$ 3,060**	**$ 8,700**	**$ 19,400**

Waneta Expansion Power Corporation: owns WAX.

Summary Financial Outlook Table for Waneta Expansion Power Corporation

($000)	2019/20 Forecast	2020/21 Budget	2021/22 Plan	2022/23 Plan
Total Revenue	$ 90,336	$ 101,764	$ 103,301	$ 104,975
Operating Expenses	12,987	15,647	15,135	15,345
Amortization & Financing Expenses	28,321	28,717	28,752	28,783
Net Income	**$ 49,028**	**$ 57,400**	**$ 59,414**	**$ 60,847**
Capital Expenditures	**$ 1,591**	**$ 655**	**$ 598**	**$ 600**

The Boards of Directors of these corporations are comprised of six Directors, three nominated by Columbia Power and three nominated by the Trust. Columbia Power manages these assets on behalf of the joint ventures.

The Brilliant Dam and Generating Station, Arrow Lakes Generating Station, Brilliant Expansion Generating Station, Brilliant Terminal Station and Waneta Expansion Generating Station are operated and maintained by FortisBC (a subsidiary of Fortis Inc.) or its related company, FortisBC Pacific Holdings Inc., under the oversight of Columbia Power.

Most of the power generated at these facilities is committed under long-term sales agreements to two utilities, FortisBC and BC Hydro. Short-term sales of capacity and energy maximize revenue.