

**DRAFT LICENSE APPLICATION
EXHIBIT D
STATEMENT OF COSTS AND FINANCING**

**SKAGIT RIVER HYDROELECTRIC PROJECT
FERC NO. 553**

Seattle City Light

December 2022

TABLE OF CONTENTS

Section No.	Description	Page No.
Exhibit D: Statement of Costs and Financing		
1.0	Contents and Purposes of This Exhibit.....	1-1
2.0	Original Costs.....	2-1
3.0	Estimate of the Amount Payable if the Project were to be Taken over Pursuant to Section 14 of the Federal Power Act	3-1
4.0	New Development Costs	4-1
5.0	Annual Costs of Project.....	5-1
5.1	Cost of Capital	5-1
5.2	Local, State, and Federal Taxes	5-1
6.0	Value of Project Power	6-1
6.1	Replacement Costs of Energy and Capacity	6-1
6.2	Value of Ancillary Services	6-3
6.3	On-peak and Off-peak Values of Project Power.....	6-3
6.4	Effect on the Value of Project Power Due to Proposed Changes in Project Operation.....	6-3
7.0	Sources and Extent of Financing	7-1
8.0	Cost to Develop the License Application	8-1
9.0	References	9-1

List of Appendices

Appendix A	Summary of Estimated Costs Associated with Proposed PME Measures [To be provided with FLA]
------------	--

List of Tables

Table No.	Description	Page No.
Table 5.0-1.	Summary of operating costs and expenses for the Skagit River Project, 2017-2021. ¹	5-1
Table 5.1-1.	Cost of capital for City Light (as of December 2021; City Light 2022a).....	5-1

List of Acronyms and Abbreviations

CETA	Clean Energy Transformation Act
CFR.....	Code of Federal Regulations
City Light.....	Seattle City Light
DLA	Draft License Application
ESA	Endangered Species Act
FERC.....	Federal Energy Regulatory Commission
FLA	Final License Application
FPA	Federal Power Act
IDC.....	interest during construction
LP	licensing participant
MW	megawatt
MWh	megawatt hour
O&M.....	operations and maintenance
PME	protection, mitigation, and enhancement
Project	Skagit River Hydroelectric Project
RCW	Revised Code of Washington
U.S.C.....	United States Code
WECC.....	Western Electricity Coordinating Council

This page intentionally left blank.

EXHIBIT D: STATEMENT OF COSTS AND FINANCING

1.0 CONTENTS AND PURPOSES OF THIS EXHIBIT

The Skagit River Hydroelectric Project (Skagit River Project or Project) is licensed by the Federal Energy Regulatory Commission (FERC) as FERC Project No. 553. The current FERC license expires on April 30, 2025.

This Exhibit D, that is being filed as part of the Draft License Application (DLA), is a statement of costs and financing for the operation of the Skagit River Project, including new development costs, annual costs of the Project, the value of the Project power, and identification of the sources and extent of financing. Because Seattle City Light (City Light) is not applying for an initial license and because City Light is a municipality, 18 Code of Federal Regulations (CFR) § 4.51(e)(1) and 18 CFR § 4.51(e)(2), respectively, do not apply (see below).

2.0 ORIGINAL COSTS

The regulation 18 CFR § 4.51(e)(1) does not apply to the Skagit River Project because City Light is not applying for an initial license for the Project. Capital improvements made to the Project since the initial license was issued are summarized, to the extent relevant, in Exhibit C of this DLA. Capital costs associated with hydroelectric infrastructure projects and protection, mitigation and enhancement (PME) measures in the new license term will be provided in the Final License Application (FLA).

3.0 ESTIMATE OF THE AMOUNT PAYABLE IF THE PROJECT WERE TO BE TAKEN OVER PURSUANT TO SECTION 14 OF THE FEDERAL POWER ACT

The regulation 18 CFR § 4.51(e)(2) states that if the applicant is a licensee applying for a new license, and is not a municipality or a state, an estimate of the amount which would be payable if the project were to be taken over pursuant to section 14 of the Federal Power Act (FPA) upon expiration of the license in effect must be provided. Given that City Light is a municipality, this section does not apply.

4.0 NEW DEVELOPMENT COSTS

As used here, “new development work” includes: (a) any capital expended to carry out improvements or betterments to the Project consistent with existing long-term plans that will continue during the term of a new license, or with the proposals contained in Exhibits A, B, C, E, and H; as well as (b) any capital required to provide environmental mitigation or enhancement during the term of a new license.

Costs for new development work for capital projects, hydroelectric infrastructure as well as PME measures, will be provided in the FLA. Total estimated costs will include interest during construction (IDC), overhead, and costs of land rights, to the extent necessary.

In addition, costs associated with PME measures (capital and operations and maintenance [O&M]) will be provided in the FLA.

5.0 ANNUAL COSTS OF PROJECT

The annual costs of operating the Project for the period 2017 through 2021 are presented in Table 5.0-1.

Table 5.0-1. Summary of operating costs and expenses for the Skagit River Project, 2017-2021.¹

Year	Operation and Maintenance ²	FERC Fees ³	Depreciation ⁴	Admin and General ⁵	Whatcom County Impact Payment ⁶	Totals
2017	\$18,237,841	\$4,237,959	\$7,268,345	\$12,134,105	1,075,834	\$42,954,084
2018	\$12,433,139	\$4,646,422	\$6,627,275	\$12,292,427	1,100,763	\$37,100,025
2019	\$17,781,543	\$4,208,389	\$7,483,008	\$13,159,066	1,126,270	\$43,758,276
2020	\$19,021,038	\$3,735,987	\$7,612,603	\$15,409,646	1,152,367	\$46,931,641
2021	\$21,315,919	\$4,878,999	\$7,701,111	\$14,205,046	1,179,070	\$49,280,145
Average	\$17,757,896	\$4,341,551	\$7,338,468	\$13,440,058	\$1,126,861	\$44,004,834

1 All dollars are nominal dollars.

2 FERC accounts in use as of 2017-2021: 535, 537, 538, 539, 541, 542, 543, 544, and 545.

3 FERC fees are Water for Power (FERC Account 536), and Land Use (FERC Account 540).

4 2017 Depreciation expenses are allocated to Skagit based on 2018 Skagit percent of total hydro asset depreciation.

5 Administrative and general costs include insurance and are allocated based on O&M labor costs.

6 City Light makes an annual impact payment to Whatcom County in compensation for services provided at the Skagit River Project.

5.1 Cost of Capital

City Light uses both debt and equity as sources of capital. The cost of capital is the interest rate weighted by the amount of that debt and equity. Table 5.1-1 summarizes the cost of capital to City Light. At the end of 2021, City Light had \$2.6 billion in outstanding debt, with a dollar-weighted interest rate of 4.17 percent and \$2.0 billion in accumulated equity, which by City policy is evaluated with a 7.00 percent return. Despite the considerable uncertainty in the future of capital markets, these interest rates and the 2021 weighted average are used as the cost of capital when annualizing costs in this DLA.

Table 5.1-1. Cost of capital for City Light (as of December 2021; City Light 2022a).

Description	Amount	Rate (percent)
Total outstanding debt	\$2,587,320,000	4.17
Accumulated equity	\$2,022,841,800	7.00
Total capitalization	\$4,610,161,800	--
Weighted cost of capital	--	5.41

5.2 Local, State, and Federal Taxes

Combined state and local sales tax in Whatcom, Skagit, and Snohomish counties were 8 percent, 8.1 percent, and 9.2 percent, respectively, in 2021. Certain costs are eligible for deductions or

exemptions. For example, new or replacement equipment used in manufacturing is exempt from the sales and use tax (Revised Code of Washington [RCW] 82.08.02565, 82.12.02565). Consequently, new or replaced turbines or generators at the Project are exempt from the sales and use tax, but the labor and materials related to installation are subject to sales and use tax. PME measures are subject to the sales and use tax.

City Light makes an annual impact payment to Whatcom County in compensation for services provided at the Skagit River Project. The payment, which was \$1,179,070 in 2021, is based on the 2009 payment, which included a retroactive payment for 2008, plus an annual escalator of 2.3171736 percent. City Light will continue to make impact payments per the existing agreement through the December 31, 2023 end of its term, which can be extended for two 3-year periods by mutual agreement. After the expiration of the current agreement, City Light expects to negotiate a new impact payment agreement with Whatcom County.

City Light pays taxes to the state and City of Seattle based on retail revenue (see Washington Administrative Code 458-20-179 and Seattle Municipal Code 5.48.050.D, respectively). In the event that the conditions of the new license increase the cost of owning and operating the Project, City Light will likely raise retail rates in order to pay the increased costs. The need to pay more taxes will contribute to the increase in retail revenue.

As a municipal utility, any gross income that City Light earns is exempt from federal income tax (26 United States Code [U.S.C.] 115). Also, no lands within the Skagit River Project are subject to property taxes (RCW 84.36.010).

6.0 VALUE OF PROJECT POWER

As City Light's within-hour, load-following resource, the Skagit River Project is of significant value to City Light's ratepayers. In addition to the power used to serve load, the Skagit River generation is pooled with other City Light sources and net excess generation is sold on the secondary market and the net wholesale revenue is used to maintain stable, affordable rates for City Light's ratepayers.

For the No Action alternative, total energy production from the Project is approximately 2.4 million megawatt hours (MWh).¹ Purchasing an equivalent quantity of energy from the Mid-Columbia trading hub would have cost City Light \$116.2 million given the relative on- and off-peak output and prices in 2021.²

Annual costs for the Project (i.e., production costs and an allocated share of debt service) totaled \$58.4 million in 2021. Production costs were \$41.6 million (total 2021 costs in Table 5.0-1 excluding depreciation). Debt service in 2021 (\$223.0 million) is allocated on the basis of the asset value of the Project (original cost of \$443.9 million as of December 31, 2021) as a percentage of City Light's total asset value (original cost of \$5.9 billion as of December 31, 2021). The allocated debt service for 2021 is \$16.8 million. This results in an average annual cost for the Project of \$23.60/MWh.³

An estimate of the net 2021 value of the Project output is approximately \$75.1 million, which is the difference between the gross value of the energy and the total of the production and allocated debt service costs. It should be noted that the firm market price used to estimate the gross value of the energy does not capture all the benefits and monetize all the values of the Project in 2021. These values include ancillary services, load following, price following, and resource reliability to City Light.

Factors that may influence these prices during the term of the new license are wide and varied. Most significant are the annual snowpack in the Pacific Northwest, the daily weather and its associated influence on heating and cooling loads, regulatory and legal requirements associated with the Endangered Species Act (ESA) and their constraints on generation, and the general state of wholesale energy markets in the West.

6.1 Replacement Costs of Energy and Capacity

Over the past decade, the regulatory landscape in the Pacific Northwest has changed with the adoption of carbon-free energy laws and policies (Kramer Consulting and Ross Strategic 2022). The Clean Energy Transformation Act (CETA; Revised Code of Washington [RCW] 19.405) requires all utilities in Washington to provide carbon-neutral electricity by 2030 and 100 percent clean energy by 2045. Because utilities must eliminate coal and gas generation from their

¹ See Exhibit B, Section 3 of this DLA for estimate of total historical average annual energy production.

² The average price, based on actual 2021 Mid-Columbia hourly prices, weighted by the on-peak and off-peak production, was \$46.94/MWh in 2021.

³ City Light followed the rules of accounting within the FERC Uniform System of Accounts when calculating this price (which was calculated solely for the purpose of this application).

portfolios by 2045 or sooner, there has been and will continue to be an increased demand for clean electricity.

The Project generates dispatchable, reliable, and non-emitting hydropower that contributes to the Pacific Northwest region having some of the least carbon-emitting electricity generation in the country (Kramer Consulting and Ross Strategic 2022). The average generation at the Project from 2002 to 2021 was approximately 280 aMW. Within minutes, City Light can ramp up or down production and change the Project's output to meet demand, including during high-load times. The Project can respond to increases in demand resulting from extreme weather events and to energy losses from other sources in the grid.

City Light's ability to ramp up and down the amount of energy generated by the Project due to reservoir storage makes it a reliable source complementary to intermittent resources like wind and solar, which produce variable amounts of energy not by design but because of time of day, weather conditions, and lack of storage. These other renewable energy sources do not have the same ability as the Project to provide variable levels of demand response year-round. Presently, this capability is most needed in winter when energy demand is high and weather extremes are more frequent (Kramer Consulting and Ross Strategic 2022). As climate change progresses, precipitation trends are expected to result in increased water availability during the winter as more precipitation falls as rain rather than snow. Additionally, peak energy demand is shifting because of climate change and peaks can occur in the summer if a heat wave forces residents to use more air conditioning (Kramer Consulting and Ross Strategic 2022). Heat waves most commonly occur in the Pacific Northwest in the late summer, a challenging time for intermittent power sources (Kramer Consulting and Ross Strategic 2022). The Project's non-emitting, dispatchable and flexible energy production characteristics thus are expected to become more valuable to the energy system due to the retirement of thermal generation in the region and as climate change increases variability from historic climate patterns that have been traditionally utilized for forecasting (Kramer Consulting and Ross Strategic 2022).

Nonetheless, replacing the Project's energy production and ancillary services (discussed below) is possible with time, funding, and planning. Replacing the Project's energy production with renewable, carbon-free sources and battery technology to ensure the region's future dispatchable needs are met would add to the challenge, especially because adequate storage options would need to be developed (Kramer Consulting and Ross Strategic 2022). Replacing the energy and capacity from the Project would require constructing or buying output from alternative sources. State permitting regulations and City policies effectively preclude construction of, or contracts with, coal-fired plants and similar restrictions on gas-fired facilities are anticipated in the near future.

Two replacement options for the Project were evaluated using resources identified in City Light's 2022 Integrated Resource Plan (IRP; City Light 2022b):

- 485 MW Southeast Oregon Solar with 194 MW battery; and
- 310 MW Columbia River Gorge Wind.

These two replacement resources would closely match the Project's energy output on an annual basis. There would, however, be significant seasonal differences in output, so these replacement resources would not provide the same level of reliability every month. The replacement projects

would provide similar winter reliability but would be less reliable in the summer, with more loss of load events expected.

The cost of the replacement resources, if pursued, is estimated to be a 30-year power purchase agreement costing \$149 million per year starting in 2026 with a 3 percent escalation assumption. While the annual energy is expected to be comparable with the Project, the seasonal differences would impact the value of City Light's secondary sales. The value in the change in secondary sales is highly dependent on seasonal wholesale prices. Estimates with current forward prices show the replacement resources increasing Net Wholesale Revenue by approximately \$1 million in 2026. Estimates using (lower) prices from a 3rd party fundamental forecast show the replacement resources decreasing Net Wholesale revenue by approximately \$7 million in 2026.

6.2 Value of Ancillary Services

Ancillary services include the ability of a power plant to respond quickly to changes in load from end-users or changes in supply from intermittent sources such as wind turbines. While the Pacific Northwest does not have an organized market or posted prices for these services, certain proxies are available.

Regional utilities post prices for these services in Open Access Transmission Tariffs and the Northwest Power Planning and Conservation Council estimates and projects these costs into the future. Based on an assessment of growing demand, the price of ancillary services is likely to rise at a rate higher than overall price inflation for the next 20 years.

City Light provides ancillary services from the Skagit River Project, Boundary Project, and through certain contracts as needed by ratepayers and third parties. The ability to provide ancillary services from multiple sources increases City Light's overall ability to respond to changes in load compared to a single-source scenario. Having multiple sources is advantageous to City Light's ratepayers but also complicates the task of estimating ancillary services from a single source, such as the Project.

6.3 On-peak and Off-peak Values of Project Power

In 2021, the average on-peak energy value was \$54.11/MWh, and the average off-peak hour energy value was \$36.80/MWh. These values are based on City Light sales, which vary by time of year and differ from a simple average price over all hours in the periods. During the course of the year, the on-peak/off-peak difference is usually highest in the summer and lowest in the winter. The Western Electricity Coordinating Council (WECC) defines the periods. Over the new license term, some difference between on-peak and off-peak is likely on a monthly and annual basis given changes in the Northwest to both power supply and loads. However, the exact amount is difficult to quantify. In general, significantly more renewable resources in the region may lead to more price volatility in market prices.

6.4 Effect on the Value of Project Power Due to Proposed Changes in Project Operation

At this time, City Light proposes to operate the Project in a manner consistent with the current license (as described in Exhibit B, Section 2 of this DLA). Exhibit E of this DLA includes a preliminary list of PME measures to be included in the new license (see Section 3.3.3 for a

comprehensive list and Proposed Resource Measures subsections for each resource area in Section 4.2). Many of these PME measures have been developed with input from licensing participants (LPs). City Light continues to engage LPs regarding the PME measures that will be included in the Proposed Action in the FLA. City Light expects that this LP engagement (along with the results of the FERC-approved studies) will result in revisions to these proposed PME measures as well as additional proposed PME measures in the FLA's Proposed Action. Any effects on the value of the Project's power due to its proposal will be provided in the FLA.

7.0 SOURCES AND EXTENT OF FINANCING

City Light has two sources of funding to meet the costs of new developments and proposed changes to the Project. First, City Light generates cash from operations, which is available for purposes approved by the City's Mayor and City Council including costs at the Project. Retail revenue, wholesale revenue, and other revenue sources pay operating expenses, taxes, debt service, and some capital requirements. Cash from operations depends on many factors and can vary between \$10 million and \$150 million per year. Second, City Light can borrow money from private markets to meet capital requirements above the amount met with cash from operations. As of December 2021, City Light had \$2.6 billion in debt outstanding, and was borrowing every six to 24 months depending on capital markets and cash balances.

8.0 COST TO DEVELOP THE LICENSE APPLICATION

The cost to develop the license application will be provided with the FLA.

9.0 REFERENCES

Kramer Consulting and Ross Strategic. 2022. Lower Snake River Dams: Benefit Replacement Final Report. August 2022.

Seattle City Light (City Light). 2022a. Financial Statements as of and for the Years Ended December 31, 2021. March 2022.

_____. 2022b. Integrated Resource Plan, Seattle City Light.

This page intentionally left blank.

**DRAFT LICENSE APPLICATION
EXHIBIT D**

APPENDICES

**DRAFT LICENSE APPLICATION
EXHIBIT D**

APPENDIX A

**SUMMARY OF ESTIMATED COSTS ASSOCIATED WITH
PROPOSED PME MEASURES
[TO BE PROVIDED WITH FLA]**