

Agenda Report

July 18, 2016

TO: Honorable Mayor and City Council

THROUGH: Municipal Services Committee (July 12, 2016)

FROM: Water and Power Department

SUBJECT: AUTHORIZE THE CITY MANAGER TO EXECUTE THE POST-2017 BOULDER CANYON PROJECT AGREEMENTS TO PURCHASE POWER AND RELATED PRODUCTS FROM THE HOOVER HYDROELECTRIC PROJECT

RECOMMENDATION:

It is recommended that the City Council:

1. Find that approval of the Post-2017 Boulder Canyon Project Electric Service Contract and Amended and Restated Implementation Agreement is categorically exempt from the California Environmental Quality Act ("CEQA") pursuant to State CEQA Guidelines Section 15301(b) regarding existing facilities of publicly owned utilities used to provide electric power; Section 15277 regarding projects located outside of California; and Section 15061(b)(3), the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment; and
2. Authorize the City Manager to execute the Post-2017 Boulder Canyon Project Electric Service Contract and the Amended and Restated Implementation Agreement (collectively "Post-2017 Agreements") to purchase power and related products from the Hoover hydroelectric project. Neither Competitive Bidding nor Competitive Selection are required pursuant to City Charter Section 1002(H) and Pasadena Municipal Code Section 4.08.049(A)(3), contracts with other governmental entities.

EXECUTIVE SUMMARY:

The purpose of these recommendations is to enable the City of Pasadena to continue to receive capacity, energy and ancillary services from the federally owned and operated Hoover Dam and powerhouse after the current contract expires on September 30, 2017. The current contract for electric service is dated January 1, 1987 (Contract #1596-3), and was preceded by the contract for sale of electrical energy dated May 29, 1941 (Contract #1596-2). The proposed Post-2017 Agreements will have a term of 50 years, expiring September 30, 2067. The Post-2017 Agreements will provide up to 58,615 MWh of firm energy annually, roughly 5% of Pasadena Water and Power's ("PWP") retail electric sales. Power under the Post-2017 Agreements will be cost-based, and is expected to average approximately \$25.66/MWh over the 50-year term of the agreement¹. For comparison, on-peak market prices in FY2017-FY2019 are expected to average approximately \$35.40/MWh², compared to an estimated Hoover cost of approximately \$19.89/MWh over the same period of time.

Summary of Major Contract Changes

- Contract term is 50 years effective October 1, 2017 through September 30, 2067;
- Number of Contractors increased from 15 to 51. The new contractors are comprised mainly of Publicly Owned Utilities and Indian tribes (see Attachment 1, below);
- To make capacity and energy available to be shared among new Contractors, the current 15 Contractors' share of Hoover generation and capacity was cut by approximately 5%.
- Additional clauses are added to reflect the evolution of new generating products and regulatory requirements implemented since 1987:
 - Ownership and usage of Ancillary Services Products, Spin, Non-Spin, and Regulation Reserves, are more clearly defined;
 - Substitution of hydro power with non-hydro power clearly defined and restricted to reflect California Emissions Performance Standards;

BACKGROUND:

Hoover Dam

The Boulder Canyon Project ("BCP"), including the Hoover Dam, was authorized by Congress in 1929, and constructed between 1931 and 1936. The BCP is located in the Black Canyon of the Colorado River on the Arizona-Nevada state line south of Las Vegas. The BCP's authorized purposes are:

1. River regulation, improvement of navigation, and flood control;
2. Delivery of stored water for irrigation and other domestic uses; and
3. Power generation.

¹ Average cost over the past 8 years, escalating at one percent per year

² Source: ACES PWP Monthly Portfolio Report, June 13, 2016

There are 17 main turbines in the Hoover power plant – nine on the Arizona side and eight on the Nevada side of the powerhouse. The original turbines were replaced through an uprating program between 1986 and 1993. The plant has a nameplate capacity of 2,074 megawatts. The capacity of the power plant is the total capability of the plant to generate electricity while energy output from the project will depend mainly on the volume of water behind the dam.

The Post-2017 Agreements

The Post-2017 Agreements will be between the City of Pasadena and the United States Department of Energy acting by and through the Western Area Power Administration (“WAPA”), Desert Southwest Region. WAPA is the power marketer for the Boulder Canyon Project. The United States Department of the Interior, through the U.S. Bureau of Reclamation (“USBR”), operates the Boulder Canyon Project.

The Post-2017 Agreements include 1) the BCP Electric Service Contract, and 2) the Amended and Restated Implementation Agreement (“Implementation Agreement”), together with associated attachments and exhibits. The Amended and Restated Implementation Agreement replaces in its entirety the Implementation Agreement dated February 17, 1995.

Under the current 1987 contracts that expire on September 30, 2017, power generated at Hoover Dam is provided to the City of Pasadena and 14 other contractors³ in the States of California, Arizona and Nevada. The Hoover Power Allocation Act of 2011 establishes a resource pool, equal to approximately 5% of the output of the project, for new purchasers eligible to purchase under the Post-2017 Agreements. The number of power contractors post-2017 will increase from 15 to 51 (see Attachment 1). The new customers consist primarily of Native American tribal entities and small municipalities in California, Arizona and Nevada.

Under the Post-2017 agreement, Pasadena will receive approximately 20 MW of capacity (0.9738% of the 2,074 MW project capacity), and approximately 58,615 MWh of firm energy annually (approximately 1.2948% of the project’s expected 4,527,000 MWh per year). The contract also provides Pasadena with a two percent (2%) share of any excess energy from the project, and with a proportionate share of ancillary services.

As a large hydroelectric project, Hoover is not considered “renewable” under California law. However, as a reliable non-carbon emitting resource, it is valuable in supporting Pasadena’s greenhouse gas reduction goals. Under the Post-2017 Agreements,

³ *The States of Arizona (Arizona Power Authority) and Nevada (Colorado River Commission); City of Los Angeles; Southern California Edison Co.; Metropolitan Water District of Southern California; California cities of Glendale, Burbank, Pasadena, Riverside, Azusa, Anaheim, Banning, Colton, and Vernon; and the city of Boulder City, Nevada.*

Pasadena is entitled to a proportionate share of any environmental attributes that might be associated with Hoover in the future.

Like their predecessors, the Post-2017 Agreements are cost-based. The agreements commit to deliver the power output of the Hoover power plant at the lowest possible cost consistent with applicable laws, statutes, regulations and sound business principles. The price of power is determined each year based on the project's projected revenue requirements, 50% of which are allocated a capacity charge and 50% as an energy charge. There is a true-up to actual costs within 90 days of the fiscal year end. Table 1 below shows the cost of Hoover power to Pasadena over the last eight years. These unit costs have historically been well below the on-peak market price of power.

The Post-2017 Agreements will be administered by the PWP Power Supply Division.

**Table 1:
 Cost of Pasadena's Share of Hoover Power***

Year	O&M and Capital Expense (\$)	MWh	Unit Cost (\$/MWh)
2015	\$852,471	49,532	\$17.21
2014	\$1,003,247	51,511	\$19.48
2013	\$1,113,168	52,272	\$21.30
2012	\$1,127,926	54,373	\$20.74
2011	\$1,029,144	49,526	\$20.78
2010	\$999,353	49,783	\$20.07
2009	\$965,867	52,363	\$18.45
2008	\$943,746	52,595	\$17.94

* Does not include credit for funding uprating, which will not apply post-2017.

Compliance with the Emission Performance Standard

Hoover is operated as a "peaking" project, typically generating energy equivalent to about 33% of its full capacity each year during heavy load hours. Since Hoover is not a base load resource, which is generally defined as producing energy equivalent to at least 60% of full capacity, the proposed Post-2017 Agreements are not technically subject to the California Emissions Performance Standards ("EPS" - Senate Bill 1368). However, the proposed action is a commitment to a large, long-term out-of-state resource. In the spirit of SB 1368, PWP has endeavored to ensure that the proposed post-2017 contract is EPS compliant as if it were a base load project.

The non-carbon emitting hydroelectric power from Hoover clearly meets the EPS of less than 1,100 lbs. of CO₂ per megawatt-hour, the amount of emissions generally associated with a modern combined cycle natural gas-fired power plant. However, the Post-2017 Agreements provide for the integration of Hoover with other Federal Projects. Consequently, the contract allows WAPA to satisfy its obligations under the agreements with power from Hoover, the Parker-Davis hydroelectric project, or "other sources of generation available to it."

The unrestricted ability to substitute power could potentially cause the contract to violate the spirit of the EPS applicable to base load resources, and could increase PWP's carbon compliance costs. Consequently, PWP and other California contractors were able to incorporate language in the Post-2017 Agreements that restricts the use of generation from sources other than the Hoover and Parker-Davis hydroelectric projects. Non-hydroelectric substitute power from other sources is limited to the amount necessary for WAPA to meet statutory requirements, with a limit of no more than 15% of the forecast energy production of the Hoover power plant over the 50 year term of the contract. This restriction on substitute energy is recommended by the California Energy Commission for EPS compliance by baseload power projects.

Conclusion

Executing the Post-2017 Agreements preserves for Pasadena citizens over the next 50 years the public preference to power from Hoover Dam, a reliable, low-cost federal resource that does not emit CO₂.

CITY COUNCIL POLICY CONSIDERATION:

The Post-2017 Agreements will support the City Council's strategic goals for a sustainable economy and to sustain natural environmental resources for the use of future generations, and at the same time, contribute to the reduction of greenhouse gas emissions and impacts on climate change.

ENVIRONMENTAL ANALYSIS:

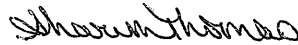
The approval and execution of the Post-2017 Agreements is determined to be categorically exempt from CEQA pursuant to State CEQA Guidelines Section 15301(b) regarding existing facilities of publicly owned utilities used to provide electric power; Section 15277 regarding projects located outside of California; and Section 15061(b)(3) - the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

FISCAL IMPACT:

The cost of this action over the 50 year term of this agreement is expected to be approximately \$69 million dollars in total. Funding for this action will be addressed by utilization of existing budgeted appropriations in account 45005550-821300. It is anticipated that costs of approximately \$1,024,000 will be spent during Fiscal Year 2018. The remainder of the costs will be spent over the next 49 fiscal years, expiring in FY 2068. PWP will request additional funding expected for each subsequent year as part of the annual Operating Budget process.

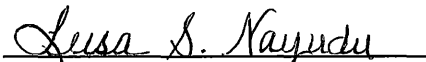
The impact to other operational programs or capital projects as a result of this action will be none/minimal.

Respectfully submitted,




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ATTACHMENTS:

Attachment 1 – Post-2017 BCP Contractors and Allocations