

# Agenda Report

May 4, 2020

**TO:** Honorable Mayor and City Council

**FROM:** Water and Power Department

**SUBJECT: AUTHORIZATION TO ENTER INTO A CONTRACT WITH ENERGY SERVICES LLC TO PROVIDE LABOR AND MATERIALS; AUTHORIZATION TO ISSUE A PURCHASE ORDER CONTRACT WITH CLEAN POWER CONSULTING PARTNERS FOR PROJECT MANAGEMENT; AND APPROVE AN INCREASE IN APPROPRIATION FOR CIP 3182 BY \$5,953,211 FOR THE GT2 REPAIR AND GT1 & GT2 CONTROL SYSTEM RETROFIT**

## **RECOMMENDATION:**

It is recommended that the City Council:

1. Find that the contract with Energy Services LLC ("Energy Services") is exempt from the California Environmental Quality Act ("CEQA") pursuant to State CEQA Guidelines Section 15301, Existing Facilities; and Section 15302, Replacement or Reconstruction; and that there are no features that distinguish this project from others in the exempt class and, therefore, there are no unusual circumstances;
2. Find that the Purchase Order ("P.O.") Contract with Clean Power Consulting Partners is not a project subject to CEQA pursuant to Section 21065 of CEQA and Sections 15060(c)(2), 15060(c)(3), and 15378 of the State CEQA Guidelines and, as such, no environmental document pursuant to CEQA is required for the project;
3. Accept the bid dated March 11, 2020, submitted by Energy Services in response to Specifications to provide labor and material for Gas Turbine Unit 2 ("GT2") Repair and Gas Turbine Unit 1 ("GT1") & GT2 Control System Retrofit; reject all other bids, and authorize the City Manager, or his designee, to enter into a contract with Energy Services for an amount not to exceed \$18,351,649 which includes a base contract amount of \$16,683,317 and a 10% contingency of \$1,668,332 to provide for any unforeseen change orders;
4. Authorize the City Manager to issue a P.O. Contract with Clean Power Consulting Partners ("CPCP") for an amount not-to-exceed \$442,060 for the project management of GT2 Repair construction and commissioning phase;
5. Grant the P.O. Contract with Clean Power Consulting Partners an exemption from the Competitive Selection process of the Competitive Bidding and Purchasing Ordinance, pursuant to Section 4.08.049 (B), contracts for which the City's best

interest are served, to the extent that this could be considered a separate procurement; and,

6. Approve an amendment to the FY 2021 Capital Budget to increase the appropriation by \$5,953,211 for the GT1 and GT2 Upgrades and Replacements Capital Project #3182.

### **EXECUTIVE SUMMARY:**

The City of Pasadena ("City") owns and operates its electric generation facility ("Power Plant") located east of Fair Oaks Avenue, west of the State Route 110 Freeway and south of Glenarm Street in Pasadena. The Power Plant consists of five natural gas fueled quick start electric generating units with a total capacity of approximately 200 Megawatts ("MW"). All of these units are capable of generating power within ten minutes. These units provide the vital support necessary to maintain the reliability of the electric system in Pasadena. The City owns and contracts with several power generation resources outside Pasadena. Most of the time the City imports power from those outside resources using the transmission system provided by the California Independent System operator ("CAISO"). Historically, the City's peak electric demand is over 300 MW. The maximum import capability into the City is 280 MW but many times it is reduced due to maintenance, repairs or forced outages of the transmission system or the City's internal electric distribution system. The local Power Plant provides the needed power to supplement imported power during those times or there would otherwise be a shortage of power within the City and rolling blackouts would occur. Additionally, the quick start capability provides valuable backup capacity support to the City and the state in integrating renewable energy resources like solar and wind whose output varies frequently. With the considerable infusion of solar and wind energy into the state's electric grid, CAISO is demanding a pre-determined amount of quick start backup capacity from each utility. As a result, the capacity of the local Power Plant commands the highest market premium in greater Los Angeles area.

GT2, a 22 MW electric generating unit is an integral part of the City's electric system. It was built in 1975 along with its twin GT1. Historically, it has operated less than 100 hours per year but provided power when it was needed to keep the lights on within the City. In October 2012, GT2 suffered a mechanical failure followed by a fire while the unit was operating. The unit sustained substantial damage with major parts such as the power turbine, turbine enclosure, and the shaft connecting the engine to the generator being damaged beyond repair. The engine, generator, fire protection systems and the pollution control system also sustained significant consequential damage. A similar failure had occurred to GT1 in May, 2010 but a definitive root cause was not determined in spite of multiple third party investigations. GT2 was taken out of service at the time and inspected for indications of a similar impending failure. It was then concluded that GT2 was deemed fit to return to service. GT1 was repaired in 2013 and the cost of the entire repair was paid by the insurance company. Subsequently, the insurance company reduced the coverage for GT2. In addition to paying for GT1 repairs, the insurance company paid a total of about \$14 million for business and physical losses for both GT1 and GT2. Pasadena Water and Power ("PWP") evaluated all feasible alternatives and

concluded that repairing GT2 provides the best value for the City. Additionally, it is necessary to upgrade the outdated control systems for both units to assure their dependability. The total estimated cost for the GT2 repair and an upgrade of the GT1 & 2 control systems is about \$20.5 million. PWP would be able to support the investment of \$6 million from its reserves without seeking outside financing to complete the repairs and necessary upgrades to the control systems.

## **BACKGROUND:**

### ***GT2 Repair and GT1 & GT2 Control System Retrofit***

In October 2012, PWP GT2 gas turbine generating unit suffered a catastrophic failure, rendering the unit unusable. Staff filed an insurance claim and received a settlement for approximately \$7.8 million, which was the maximum covered by the policy at that time. GT1, the twin unit, caught fire in 2010 and was successfully repaired in 2013. The insurance settlement for GT1 has a remaining balance of approximately \$6 million.

Following the GT2 incident, staff undertook the preliminary steps to evaluate the options of repairing GT2, replacing the unit with the same capacity, installing battery storage, or upgrading the transmission system. It was determined that repairing GT2 would be the best option based on the need for local generation, overall cost, and implementation time. Replacement of GT2 with the same capacity unit would cost the City approximately \$42 million. An equivalent size battery would utilize ten times more space, cost almost four times more and only have the ability to produce a limited amount of energy before it would require recharging. Transmission upgrades are very costly (approximately \$200 million), would take more than ten years to complete, and would require extensive construction that would include demolition of local streets. In addition, a consultant hired by PWP conducted a market analysis, and their final report in October 2016 concluded that the repair of GT2 represents PWP's best long term resource option when factors such as system reliability, economic, and permitting risk are taken into account. The repairs for GT2 were delayed to accommodate for the construction of a new electric generating unit Gas Turbine Unit 5 ("GT5").

As part of the 2018 Power Integrated Resource Plan ("IRP"), which was approved by City Council on December 18, 2018, the GT2 project was a pivotal resource in meeting PWP energy and capacity needs. Upon completion of the repairs, GT2 will provide the much needed additional generation capacity for the reliability of the City's electrical system as well as the highly valued CAISO Resource Adequacy ("RA") requirements. With a large influx of solar and wind resources into the grid, the need for on-demand quick-start electric generating units like GT2 has become very important to keep the grid stable. The CAISOs RA counting and outage rules have become more restrictive over time because the supply has decreased with generator retirements, and more variability in supply has been introduced as more and more renewables are being introduced to the grid. This is expected to continue in the future, so additional capacity is needed than what has been necessary historically. The IRP assumed that GT2 would be online to meet these needs.

GT2 will help meet PWP's RA needs and would count as a system RA resource, as well as meeting the Local Capacity Requirements ("LCR") and Flex RA requirements. Overall, the cost savings from having to buy additional RA products would be \$2.1 million to \$3.2 million per year. This would translate to a payback of 7 to 10 years. Over the years, the CAISO has become more restrictive with the RA rules. In order to meet reliability requirements for system RA, Pasadena must cover 115% of its peak capacity. This means that Pasadena must provide 15% extra capacity in a month ahead process, to cover any potential system-wide reliability constraints. The Local Capacity Requirements are in place to secure resources that are local to the Los Angeles Basin. Pasadena's 2020 LCR requirement is 126.87 MW. The Flex RA requirements vary by month, and for 2020, ranges from 37 MW to 72 MW. Flex RA must come from a local, baseload capable resource, which can provide substitute power for intermittent resources.

GT2 will also make up for some of the loss of capacity after the City's largest electricity resource, Intermountain Power Plant, is phased out by 2027.

In addition, GT2 generation capacity will help avoid and/or minimize the extent of rolling blackouts when electricity consumption exceeds PWP's ability to import electricity into the City and when PWP's electrical system experiences a single most severe contingency event reducing its ability to import power.

### ***Bidding Process for Repair and Retrofit Work***

A Notice Inviting Bids for the GT2 Repair and GT1 and GT2 Control System Retrofit Specifications was advertised in the Pasadena Journal and posted online through Planet Bids, which sent notifications about the project to 2,627 contractors, including 140 local contractors, on December 5, 2019. On December 10, 2019 and January 7, 2020, 25 contractors attended the non-mandatory pre-bid meeting, and two responsive bids were received and opened on March 11, 2020. Despite the broad interest in this project, this is highly specialized work and as such it is not surprising only two bids were received.

The results of the bids were as follows:

<u>Bidders</u>	<u>Total Bid</u>
1. Energy Services LLC- Glastonbury, CT	\$16,683,317
2. ARB, Inc. - Lake Forest, CA	\$20,196,328

Energy Services was the lowest and responsive bidder that met the requirements of the Specifications. Therefore, staff recommends that the City Council authorize the City Manager, or his designee, to enter into a contract with Energy Services in the amount of \$18,351,649 which includes a base bid of \$16,683,317 and a 10% contingency of \$1,668,332 for any necessary change orders.

Energy Services does not have any current or past contracts with the City. The proposed contract with Energy Services fully complies with the Competitive Bidding and Purchasing Ordinance P.M.C. Chapter 4.08 and the rules and regulations

promulgated thereunder. In addition, the proposed contract fully complies with the Prevailing Wage Law (Senate Bill 7) per Resolution 9406 adopted by the City Council on December 15, 2014.

***P.O. Contract for GT2 Repair Project Management***

PWP has experienced shortage of Power Plant engineering staff for nearly one year due to retirements and inability to find a replacement until recently. With consideration of long term needs, only one out of two Power Plant engineering positions is filled at this time. To help new engineers familiarize with Power Plant projects including GT2, one of the retired engineers was rehired part-time for a limited term. GT2 repairs is a complex and high value project that requires experienced engineers and project management. To make up for the limited in-house staffing, PWP hired Clean Power Consulting Partners to manage Phase 1 of the GT2 Repair project management services. Phase 1 work consists of assisting PWP with finalizing the scope of work, bidding process and bid evaluation. Phase 2 of the project management services, which consist of construction and commissioning, will only proceed upon confirmation that the bid received for the GT2 Repair will comply with SCAQMD Permit to Construct. The Permit requires that a substantially similar power turbine, with same emission profile, must be used as the replacement unit.

Upon receipt of the bids, staff has determined that the power turbine replacement is acceptable and able to proceed with the Phase 2 project management services. CPCP had developed the project schedule and has deep knowledge on the project's technical requirements. In addition, CPCP had resolved complex technical and commercial issues and had demonstrated prudent project management skills to meet the budget and schedule for the GT5 Project. Based on the reasons cited and to maintain the project schedule, staff recommends that approval should be granted in the City's best interest to authorize the City Manager to issue a P.O. Contract with CPCP for an amount not-to-exceed \$442,060 for Phase 2 project management services.

Previously, CPCP was awarded consulting contracts in the amount of \$36,100.

***Appropriation Increase for CIP 3182 (GT1 and GT2 Upgrade and Renewal)***

The original project appropriation of \$14,710,892 was based on the estimate provided by an engineering firm in 2016. Since then, material and labor costs have increased, mainly due to tariffs and wage increases. In addition, the original budget did not include consulting costs. To date, \$208,852 is expended on engineering and consulting work and a balance of the available appropriation is \$14,502,040 for CIP 3182. Staff recommends increasing the appropriation by \$5,953,211 to cover the increase in construction costs and the additional consulting (project management and Owner's Engineer) costs. Table I provides a summary of the remaining appropriation, estimated cost, and recommended increase.

**Table I**

Estimated Cost:		
Construction Cost & 10% Contingency	\$18,351,649	
Project Management	\$442,060	
Owner's Engineer	\$117,720	
PWP Engineering & Power Delivery Labor	\$175,000	
Fuel/Commissioning Cost & Third Party Testing	\$125,000	
10% Contingency (excluding Construction)	\$85,978	
Sub-Total	\$19,297,406	
Admin Charges (6% of Subtotal)	\$1,157,844	
<b>Total Estimated Cost</b>		<b>\$20,455,251</b>
Original Appropriation	\$14,710,892	
Expenditures to Date	\$208,852	
Available Appropriation to Date	\$14,502,040	
<b>Less (Available Appropriation to date)</b>		<b>(\$14,502,040)</b>
<b>Recommended Appropriation Increase</b>		<b>\$5,953,211</b>

In addition to the \$7,713,213 insurance settlement balance for GT2, there is a remaining GT1 insurance settlement balance of \$6,234,488. The total insurance settlement balance of \$13,947,702, which will be utilized for this project, will yield to a \$6,507,549 out-of-pocket expense for the City. The appropriation increase of \$5,953,211 will be funded from the Power Fund.

**COUNCIL POLICY CONSIDERATION:**

This project is consistent with the 2018 Power IRP update and supports the City Council Strategic Goal to improve, maintain, and enhance public facilities and infrastructure. It also supports the Public Facilities Element of the General Plan by maintaining public facilities to enhance the quality of life of the community.

**ENVIRONMENTAL ANALYSIS:**

The repair of GT2 has been determined to be categorically exempt in accordance with CEQA Guidelines Section 15301, Existing Facilities, and 15302, Replacement and Reconstruction. These exemptions allow for the maintenance, repair, minor alteration, etc., of existing facilities (including publicly-owned utilities that involve negligible or no expansion of use), and the replacement and reconstruction of existing facilities and structures, including utility systems where the replacement structures/facility will have substantially the same purpose and capacity. There will be no expansion of use or capacity as a result of the required repairs and maintenance on the existing GT2 unit.

The proposed action to issue a P.O. Contract for project management services is not a project subject to CEQA in accordance with Section 21065 of CEQA and State CEQA Guidelines Section 15060 (c)(2), 15060 (c)(3), and 15378. The awarding of contracts for professional services is an organizational and administrative action that would not cause

either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. Therefore, the proposed action is not a "project" subject to CEQA, as defined in Section 21065 of CEQA and Section 15378 of the State CEQA Guidelines. Since the action is not a project subject to CEQA, no environmental document is required.

**FISCAL IMPACT:**

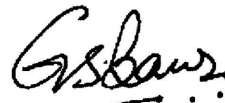
The total cost of this action will be \$20,455,251 which includes the base contract amount of \$16,683,317, a 10% contract contingency of \$1,668,332 and engineering and other administrative costs of \$2,105,251, as shown in Table I. Funding for this action will be addressed by the utilization of existing and proposed additional appropriations in the Power Fund, CIP 3182 – GT1 and GT2 Upgrade and Replacement, as shown in Table II.

**Table II - Fiscal Impact Summary**

3182- GT1 and GT2 Upgrade and Replacement	
Total Project Estimated Cost	\$20,455,251
Minus Available Appropriation	\$14,502,040
Proposed Additional Appropriation for CIP 3182	\$5,953,211

It is anticipated that \$19.5 million will be spent in FY 2021 and \$957,910 in FY 2022. There are no other anticipated impacts to other operational programs or capital projects as a result of this action.

Respectfully submitted,



\_\_\_\_\_  
GURCHARAN S. BAWA  
General Manager  
Water & Power Department

Prepared by:

 for  
Arturo Silva  
Power Plant Manager

Approved by:

  
\_\_\_\_\_  
STEVE MERMELL  
City Manager