Agenda Report

August 18, 2025

TO: Honorable Mayor and City Council

FROM: Water and Power Department

SUBJECT: **AUTHORIZE THE CITY MANAGER TO ENTER INTO A CONTRACT WITH GE VERNOVA INC. (DBA GE VERNOVA OPERATIONS LLC) FOR $2,916,936 FOR A CONTROL SYSTEM UPGRADE FOR GAS TURBINES 3 AND 4 AT THE GLENARM POWER PLANT**

RECOMMENDATION:

It is recommended that the City Council:

1. Find that the action proposed herein is not a "project" subject to the California Environmental Quality Act (CEQA) pursuant to State CEQA Guidelines Section 21065 and within the meaning of Section 15378(b);

2. Authorize the City Manager to enter into a one year contract, without competitive bidding pursuant to City Charter Section 1002(F), contracts for professional or unique services, with GE Vernova Inc. (dba GE Vernova Operations LLC) for the hardware and software to perform a control system upgrade of the Gas Turbine 3 ("GT-3") and Gas Turbine 4 ("GT-4"), for an amount not to exceed $2,916,936, which includes a base contract amount of $2,566,060 and a contingency of $350,876 to provide for any necessary change orders; and

3. Grant the recommended contract an exemption from the Competitive Selection process pursuant to Pasadena Municipal Code Section 4.08.049(B) contracts for which the City's best interests are served.

EXECUTIVE SUMMARY:

The City of Pasadena Water and Power Department ("PWP") is planning a major replacement/upgrade to one of the sub-transmission lines ("Path 2") between Glenarm and Santa Anita Receiving Stations. The work is scheduled to start in October 2026 and end in May of 2027. During this period, local generation will be critical as the work will significantly impact the capability of the City's distribution systems to transport power to the west side of the City. Local generation from the Glenarm Power Plant must be at peak reliability to prevent rolling blackouts.

The prioritized work for GT-3 and GT-4 is scheduled to commence in October 2026. This work will include a control system upgrade for both GT-3 and GT-4. Given the highly specialized and complex nature of the control system, which was specifically designed for GT-3 and GT-4, it is recommended that a contract be awarded, based on exemption, to GE Vernova Inc. As the Original Equipment Manufacturer ("OEM"), GE Vernova Inc. is uniquely qualified to perform this upgrade. The contract amount is not to exceed $2,916,936, which includes a contingency of $350,876 to cover any necessary change orders.

BACKGROUND:

The City owns and operates the Glenarm Power Plant ("Plant"), which consists of five aeroderivative quick start electric generating units with a total combined capacity of approximately 200 Megawatts ("MW"). The Plant serves three critical functions for the City including: peak demand coverage, quick start capability, and wholesale market generation.

First, the Plant provides energy to the City of Pasadena during periods of peak energy demand and emergency events. The maximum import capability into the City is 280 MW, which can be reduced to as low as 110 MW due to maintenance, repairs, or forced outages to the transmission system or to the City's internal electric distribution system. The City's peak electricity demand is 331 MW. During periods when the peak power exceeds import capability, the Plant provides the balance of the power necessary to meet demand and prevent rolling blackouts.

Second, the quick start capability of the generating units provides valuable backup capacity to support the City and the State with integrating intermittent renewable energy resources such as solar and wind. With this capability, all five units can generate power within ten minutes after start-up. Given the significant amount of solar and wind energy in the state's electric grid, CAISO requires a predetermined amount of quick start backup capacity from each utility. As a result, the capacity of the Plant commands the highest market premium as an energy resource in the greater Los Angeles area.

Third, the units at the Plant operate under a participating generator agreement with CAISO, allowing them to participate in the wholesale power market. Having local generation operating under the terms of the agreement satisfies the CAISO requirement for Resource Adequacy placed on the City as a load-serving entity, ensuring there are enough available generation sources to meet electrical demand.

Power Delivery Master Plan and Path 2 Scheduled Work

In June 2022, the City adopted the Power Delivery Master Plan which provides a high-level guide for planning, operating, and maintaining the electric distribution system for PWP over the next two decades. Part of the Power Delivery Master Plan includes assessing the electric utility's current conditions and providing a capital improvement plan to address current and future challenges. One of the projects is to replace and

upgrade the civil and electrical components of one of the sub-transmission lines ("Path 2") between the Glenarm and Santa Anita Receiving Stations, starting in October 2026. The sub-transmission lines carry power imported through the TM Goodrich Receiving Station, which is the City's connection to the State of California electrical grid to substations further west in the City.

Upgrades like the one planned for Path 2 are necessary to mitigate the limitations in the sub-transmission system to allow PWP to meet the carbon free power goals by 2030. During this period of construction, local generation will be critical as the work will significantly impact the capability of the City's distribution systems to transport power through to the west side of the City. Local generation must be at peak reliability to prevent rolling blackouts.

Power Plant Maintenance Plan

In anticipation of the planned work on Path 2, the Plant must meet generation demand and maintain a high level of reliability. To support this effort, PWP staff developed a Maintenance Plan to establish a structured approach to maintaining and upgrading the City's power generation asset. Historically, the Plant has used a combination of predictive and reactive maintenance approaches. The Maintenance Plan outlines ongoing preventative and predictive maintenance activities aligned with industry standards and OEM guidelines, which are essential to preserving the performance and structural integrity of the plant's GTs and related systems.

Several activities have been captured in the FY 2026 to FY 2030 Capital Improvement Program ("CIP"), which are reviewed and approved annually by the City Council. The Maintenance Plan is intended to improve unit reliability, efficiency, and implement modernization.

Furthermore, the Maintenance Plan will be essential for PWP to complete the Path 2 cable replacement project, as it requires de-energizing the associated sub-transmission lines to safely remove and replace the aging cables. This work is estimated to take approximately six months, assuming no significant unforeseen delays. During this time, the power import capacity at TM Goodrich will be reduced, necessitating increased reliance on internal generation resources. Therefore, the availability and reliability of internal generation will be crucial throughout the duration of the project.

Risks of Deferred Gas Turbine Maintenance

Implementing the Maintenance Plan will help ensure continued compliance with regulatory requirements, reduce the risk of unplanned outages, and extend service life of critical infrastructure. Staff have identified two of the City's five gas turbines, GT-3 and GT-4, as high-priority units requiring immediate attention. These turbines are approaching 25 years of operational life and are due for major maintenance and upgrades based on manufacturer recommendations.

Delaying necessary maintenance presents several significant risks. Aging components and obsolete control systems increase the likelihood of mechanical failure, unplanned outages, and efficiency losses. Ongoing disruptions in the supply chain, including supplier logistics issues, extended delivery times, equipment downtime, and challenges related to inventory demands, further intensify these problems by limiting access to critical replacement parts and delaying necessary repairs. Additionally, failure to maintain emission controls and monitoring systems may result in noncompliance with environmental regulations, exposing the City to potential fines, enforcement actions, or even the revocation of permits required for continued operation.

Timely upgrades, particularly to control systems and instrumentation, are essential to improving system reliability, preventing nuisance shutdowns, and ensuring safe, efficient performance. Proper maintenance of these systems supports the structural integrity of the turbines, enhances operational stability, and extends equipment life. The Maintenance Plan and related contracts are critical to mitigating these risks, preserving system reliability, and maintaining compliance with all applicable regulations.

Control System Contract Award

The GT-3 and GT-4 units require a balance-of-plant control system software upgrade, which is crucial for maintaining the overall efficiency, reliability, and performance of the power plant. These upgrades ensure that supporting systems, such as cooling towers, chillers, and the other associated pumps and fans, operate optimally. The upgrade will directly impact the plant's efficiency, availability, and overall power generation reliability. As the OEM, GE Vernova Inc. is ideally suited to perform this control system upgrade on the gas turbines. Other potential vendors for this work would have to reverse engineer a solution, thus resulting in an extended duration for project completion and a high degree of uncertainty due to potential compatibility issues.

The control system on GT-3 and GT-4 dates back to the installation of the units in 2002. The scope of work for the control system upgrade includes hardware and software. The current control system hardware is obsolete and is no longer supported. While replacement components are still available, they are becoming increasingly difficult to source. Along with the control system hardware, the software version will be upgraded from version S3 to version S7.3.0. This software upgrade will vastly improve unit efficiency, decrease water consumption, eliminate nuisance unit shutdowns, and introduce logic for a potential future switch to alternative fuels. The upgrade to the outdated control systems for both units will contribute immensely to unit dependability.

It is in the best interest of the City to award a contract to GE Vernova Inc. for a balance-of-plant control system upgrade to ensure the safe, reliable, and efficient operation of GT-3 and GT-4. An exemption from competitive bidding is recommended as the vendor is the original equipment manufacturer and designed the unique control architecture for the two generating units. GE Vernova Inc. is singularly equipped to perform this work as they designed the original control architecture, have a proven track record of control

system upgrades on the LM6000 units, have a long-established support relationship with PWP and have provided a fair and reasonable cost proposal.

COUNCIL POLICY CONSIDERATION:

The proposed action is consistent with the Public Facilities Element of the General Plan and supports the City Council's goal to improve, maintain and enhance public facilities and infrastructure and to implement capital improvements that will maintain and rehabilitate infrastructure.

ENVIRONMENTAL ANALYSIS:

CEQA excludes, from environmental review, actions that are not "projects" as defined by CEQA Guidelines Section 21065 and within the meaning of Section 15378(b). Sections 21065 and 15378(b) define a project as an action which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment. Section 15378 excludes from the definition of "project" continuing administrative or maintenance activities, such as purchases for supplies and services. The actions proposed herein, authorizing the City Manager to enter into a contract with GE Vernova Inc., is an administrative activity for the purchasing of services and hardware, and therefore is not a "project" as defined by CEQA. Since the action is not a project subject to CEQA, no environmental document is required.

FISCAL IMPACT:

The cost of this action, including contingency, is $2,916,936. Funding for this action will be addressed by the utilization of existing budgeted appropriations in the GT-3 and GT-4 Capital Equipment Refurbishments (03186) CIP project. It is anticipated that all costs will be expended in FY 2026 with no ongoing software maintenance or licensing costs. There is no impact to the General Fund.

The following table represents a project summary:

Base Bid	$ 2,566,060
Contract Contingency	$ 350,876
Total Fiscal Impact	$ 2,916,936

Respectfully submitted,

DAVID M. REYES
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