



## MEMORANDUM

**TO:** Honorable Mayor and City Council

**FROM:** David M. Reyes, General Manager, Water and Power

**DATE:** December 15, 2025

**SUBJECT:** OPTIMIZED STRATEGIC PLAN

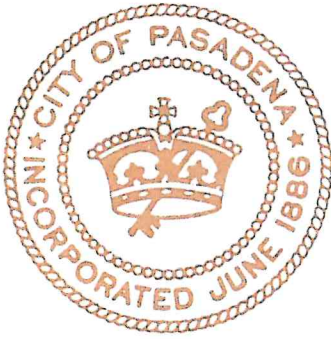
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### **MUNICIPAL SERVICES COMMITTEE RECOMMENDATION:**

On November 5, 2025, the Municipal Services Committee ("MSC") recommended that the City Council adopt and approve PWP's OSP, with five revisions:

1. Clarify that the goal of the OSP is to reach carbon-free on an hourly basis, supporting Resolution 9977;
2. Increase the goal for Additional Local Solar Resources from 50 Megawatts ("MW") 70 MW with at least 50 MW coming from PWP customers;
3. Include a timeline for incentives, initiatives, and an education campaign to increase the adoption of local solar;
4. Remove references to proposed changes to Net Energy Metering ("NEM"); and
5. Provide additional narrative regarding the viability of hydrogen as an emerging technology.

The recommended revisions provided by the MSC have been incorporated into the attached Optimized Strategic Plan. In addition to the changes to the OSP, the MSC also asked staff to return with a discussion on staffing and implementation; an increase to the maximum solar capacity from 150 to 200% of annual usage; consideration of Community Solar Projects within the Utility's annual 5-Year Capital Improvement Program; and a discussion of programs funded by the Public Benefit Charge.



# Agenda Report

November 17, 2025

**TO:** Honorable Mayor and City Council

**THROUGH:** Municipal Services Committee (November 5, 2025)

**FROM:** Water and Power Department

**SUBJECT:** **APPROVE THE OPTIMIZED STRATEGIC PLAN ESTABLISHING AN ACTION PLAN TO ACHIEVE THE GOALS SET FORTH BY CITY COUNCIL-ADOPTED RESOLUTION 9977**

## **RECOMMENDATION:**

It is recommended that the City Council:

- 1) Find that this action is statutorily exempt from the California Environmental Quality Act (CEQA) pursuant to State CEQA Guidelines Section 15262; and
- 2) Adopt and approve Pasadena Water and Power's ("PWP") Optimized Strategic Plan ("OSP"), Attachment 1, outlining actionable steps to meet the goals set forth by City Council-adopted Resolution 9977.

## **MUNICIPAL SERVICES COMMITTEE RECOMMENDATION:**

On June 24, 2025, the Draft OSP Annotated Outline was presented to the Municipal Services Committee ("MSC") which summarized the OSP technical analysis, development process and synthesis into an action plan that includes implementation priorities and activities to achieve the objectives of City Resolution 9977. The MSC received and filed the report advising staff to pursue future energy resource portfolios with the aim of serving 100% of the City's energy needs from carbon-free sources on an hourly basis, to accelerate the development of local resources, and to preserve the Glenarm Power Plant while limiting its operations for local reliability and to support the greater California electric grid.

## **EXECUTIVE SUMMARY:**

On January 30, 2023, the City Council adopted Resolution 9977 which declares that climate change is an emergency that threatens the health and welfare of the city, region, state, nation, and the environment.



- Commits the City to environmental stewardship and continued leadership in sustainability;
- Sets forth a policy goal to source 100% of Pasadena's electricity from carbon-free sources by the end of 2030; and
- Directs the City Manager to plan multiple approaches to transition to this policy goal and optimize for affordability, rate equity, stability, and reliability of electricity while achieving this goal.

Subsequently, the City Council (through MSC), authorized the City Manager to enter into a contract with Energy and Environmental Economics, Inc. ("E3") to assist in the development of an OSP to achieve these policy goals. The City Manager and the General Manager of PWP established a Technical Advisory Panel ("TAP") comprised of community stakeholders to assist in the development of the OSP and to provide transparency in the process.

### ***Collaborative and Transparent Process***

A key theme in the development of the OSP has been extensive outreach, coordination, and collaboration among PWP staff, stakeholder groups, and the Pasadena community. PWP has shared and discussed the development and analysis of the multiple OSP case studies across a variety of platforms, including TAP meetings, regular updates to the MSC, Environmental Advisory Commission ("EAC"), and City Council, community meetings were also presented, including an Open House Event which invited the general community to share priorities and provide input.

Additionally, because stakeholder and community input have been crucial considerations in the development of the OSP, PWP provided a public comment period from October 6 through October 27, 2025, during which community members could review, share feedback, and ask questions. PWP staff were available for office hours to meet with community members on specific questions or concerns.

Documents representing the full OSP process, including meeting summaries, Agenda Reports, and presentations are available on the OSP website at <https://pwp.cityofpasadena.net/optimized-strategic-plan/>.

### ***Technical Advisory Panel***

The TAP was comprised of broad segment of community stakeholders:

- Lauren Siegel, Chair, Environmental Advisory Committee
- Sam Berndt, Member, Pasadena 100
- Cynthia Cannady, Member, Pasadena 100
- Paul Little, President, Pasadena Chamber of Commerce
- David Kang, Associate Vice President for Facilities, California Institute of Technology
- Dr. Stephen Low, Professor of Computing and Mathematical Sciences and Electrical Engineering, California Institute of Technology

- David Coher, Resident

The meetings covered a variety of methodologies, technical studies, and conclusions detailed in presentations. The City is appreciative of TAP members for providing their valuable time and input, which was instrumental in shaping the OSP. Below, Figure 1, summarizes the meeting dates of the extensive outreach, coordination, and collaboration between PWP, stakeholder groups, and the Pasadena community.

**Figure 1: Optimized Strategic Plan Community Engagement Calendar**

Optimized Strategic Plan - Community Engagement Calendar												
Outreach, coordination, and collaboration between PWP, policymakers, stakeholder groups, and the Pasadena community												
Community Engagement Calendar	2024											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
			★							★		
		★						★	★			
									★		★	
						★	★	★	★	★		★
									★			
2025												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
					★						★	
			★	★		★					★	
			★					★				
		★	★		★	★				★		
			★			★						

### Strategic Plan Development

The OSP outlines a range of pathways and action plans to pursue the goals of Resolution 9977, showcasing the key steps and future decision points that will best position Pasadena to achieve its goal to source all electricity from carbon-free sources by the end of 2030, while maintaining reliability and limiting cost impacts to customers. The OSP highlights opportunities to leverage local solar and storage development, procure external renewable and storage resources, invest in transmission and distribution infrastructure, and develop customer programs to facilitate the transition to Pasadena's carbon-free goal.

The OSP technical analysis developed multiple case studies to explore all pathways to achieve Resolution 9977 goals and inform the development of planning targets. The OSP produced seven case studies exploring different options to meet 100% of Pasadena's energy needs with carbon-free sources by the end of 2030. While there is no minimum threshold for a specific type of resource, a diverse resource mix plays a vital role in this transition. Maintaining flexibility and adaptability as PWP pursues the planning targets set forth in the OSP will be critical to the achievement of all goals as new technologies emerge, customer preferences evolve, and the cost and availability of resources shifts.

As part of its underlying technical analysis, the OSP explored portfolios designed to meet 100% annual carbon-free goals and 100% hourly carbon-free goals. The 100%



annual portfolios focus on matching the total amount of electricity used over a year with an equal amount of clean energy generated over that year. In contrast, the 100% hourly portfolios aim to power every hour of electricity use with carbon-free sources, ensuring clean energy is available and used in real time.

### ***Clean Energy Tracker***

To track Pasadena's progress on key clean energy targets and milestones outlined in the 2023 Power Integrated Resource Plan (IRP) and OSP, PWP has launched a Clean Energy Tracker (<https://pwp.cityofpasadena.net/clean-energy-tracker/>) that is continuously updated. The Tracker measures Pasadena's compliance with California mandates, carbon-free generation percentages, and average hourly matching of clean energy demand.

### **BACKGROUND:**

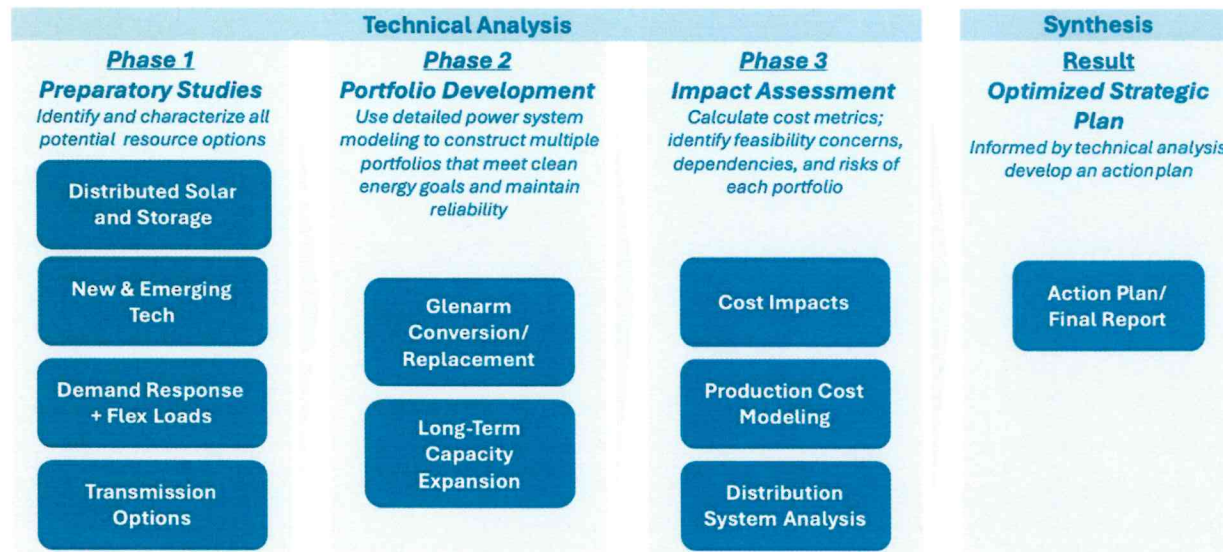
Pasadena has consistently outpaced State mandates for renewable energy, producing energy resource portfolios in its planning studies that envision more aggressive pathways towards decarbonization than required. Furthering this commitment, on December 11, 2023, the Pasadena City Council unanimously approved PWP's 2023 Power IRP, a 25-year planning roadmap to provide the local community with safe, reliable, and environmentally responsible electricity services at competitive rates. In addition to meeting CEC's IRP requirements, the 2023 Power IRP also incorporates Resolution 9977.

As part of the IRP approval, the City Council requested the development of an OSP to define and outline actions needed to achieve the goals of Resolution 9977. It was further recommended that the OSP would be created in collaboration with a consultant experienced in green energy to ensure a feasible plan for meeting Pasadena's ambitious targets. Accordingly, the City Council approved the reengagement of E3, an industry leader in clean energy policy that provided technical review services for the 2023 IRP and has a good understanding of Pasadena's clean energy goals.

### ***Plan Development Process***

The OSP development process and workflow involved a series of analytical studies using state of the art power system planning models. The 3-phase scope of work included nine studies that resulted in an optimized plan for achieving carbon-free goals.

**Figure 2: OSP Scope of Work**



The findings of the independent analytical studies provided the foundational data and analysis to help guide further actions needed to transform PWP’s energy resource portfolio while maintaining reliability and limiting cost impacts to customers.

The completion of the technical analysis was synthesized into the development of a OSP action plan and final report which highlight the diverse mix of local solar and storage, external renewable resources and storage, investments in transmission and distribution infrastructure, and customer programs that can facilitate to the achievement of Resolution 9977’s goals.

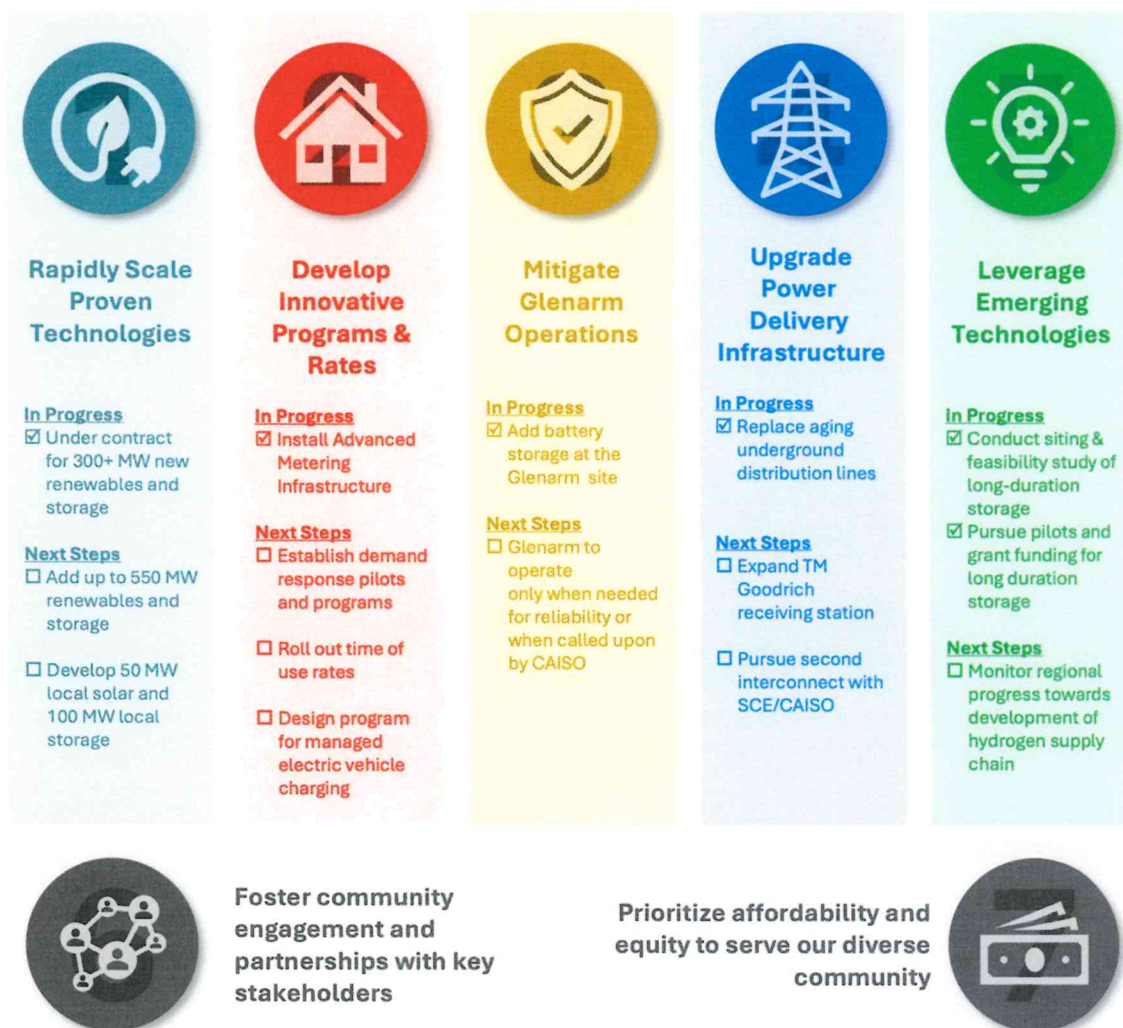
### **Key Components of the Optimized Strategic Plan**

PWP is pursuing the “100% Hourly Accelerated Local Resources Portfolio,” while maintaining reliability and minimizing costs to ratepayers. Pasadena’s hourly carbon-free goal continues to rank among the most ambitious in the nation and requires a flexible, adaptive action plan that drives progress while minimizing potential risks to public health, safety, and security. Progress must be steady but also cautious, using a phased-in approach to resource investment and considering evolving technologies and market conditions. Most importantly, it requires rigorous and ongoing monitoring, followed by diligent evaluation at the 2028 Waypoint to objectively assess the progress made and associated impacts, so that required actions or changes can be incorporated in the 2028 IRP.

The OSP reaffirms Pasadena’s commitment to a clean energy future and presents a strategy centered on actions included in the following five pillars, shown below in Figure 3:



**Figure 3: Pillars of the Optimized Strategic Plan**



Equity and affordability are core objectives of Resolution 9977. PWP remains committed to keeping energy bills affordable and ensuring that the incremental costs to transition to carbon-free electricity are allocated fairly among all customers and customer classes. To ensure an equitable transition to carbon-free energy, PWP will prioritize the needs of the entire Pasadena community, including low-income and disadvantaged communities, by integrating equity and affordability into all phases of planning and implementation. By partnering with community-based organizations and engaging directly with residents, PWP will create solutions that enhance local resilience and ensure that all community members share in the benefits of a clean energy future.

In addition, as a community-owned utility, PWP is committed to engaging with the community and developing partnerships to advance decarbonization and to find equitable solutions. Collaboration and public engagement are critical to achieving the goals of Resolution 9977. The OSP highlights opportunities to raise awareness through outreach and marketing, including collaborating with major customers and key accounts that share a common commitment to sustainability.

### ***Implementation Roadmap***

To achieve goals, the OSP establishes a robust Action Plan (“Plan”) that includes the procurement of new utility-scale clean energy contracts; development of local solar and storage on city-owned property; customer programs, outreach, and marketing campaigns; and pilot projects showcasing new and emerging technologies. These initiatives will build upon the current progress PWP has already established with planned actions that include modernization of power infrastructure and phase out of fossil fuel resources.

A major component of the Plan is to rapidly scale proven carbon-free technologies by expanding carbon-free energy through renewable and storage projects. By early 2026, the Plan recommends issuing competitive solicitations for new utility-scale resources and development of solar and battery storage on City-owned properties. It also recommends development of new incentives, outreach, and financing options that support customer rooftop solar efforts.

To help customers use energy more efficiently and support grid resilience, the Plan recommends developing new demand response programs that incentivize the shifting of energy use to times when renewable power is most available. Such programs will be enabled by the planned Advanced Metering Infrastructure (“AMI”) and time-of-use rates.

The Plan also identifies opportunities to reduce reliance on the Glenarm Power Plant through expansion of energy import capabilities, distribution system upgrades, and ongoing evaluation of emerging technologies such as long-duration storage. To provide accountability and transparency, PWP plans to provide annual updates on Glenarm’s operations and to reassess options for a long-term transition strategy at the 2028 Waypoint identified in the IRP.

A summary of action planning targets is shown in Figure 4. It demonstrates some of the key actions for each of the OSP pillars and a general timeline to achieve each item. For a more comprehensive description and timeline for each of the actions, see the OSP document.



**Figure 4: Summary of the OSP Action Plan**

Action Plan Item (Organized by OSP Pillars)	Applicable OSP Pillars	Timeline
<b>0 General reporting and progress updates</b>		
Provide quarterly progress updates to Municipal Services Committee	1 2 3 4 5	2025-2030
Maintain Clean Energy Tracker website	1 2 3 4	2025-2030
Publish 2028 Integrated Resource Plan	1 2 3 5	2028
<b>1 Rapidly scale proven technologies (utility-scale renewables &amp; storage)</b>		
Integrate new contracted resources into portfolio (210 MW renewables & 55 MW storage)	1	2025-2029
Continue to procure resources through SCPPA and seek approval (as needed)	1	2025-2030
Conduct all-source RFP for new utility-scale renewables and storage	1	2025-2027
Reassess cost impacts to continue procurement above 100% annual matching	1	2026-2028
Evaluate need to issue additional RFPs for renewables and storage	1	2028
Issue and administer additional RFPs (as needed)	1	2029-2030
Integrate additional contracted resources into portfolio (up to 325 MW renewables and 150 MW storage)	1	2029-2030
<b>1 Rapidly scale proven technologies (local solar &amp; storage)</b>		
Revise policy on customer solar sizing	1 3	2025
Launch public outreach and education campaign	1 3	2025-2026
Identify municipal sites for solar development	1 3	2025-2026
Conduct studies to identify potential microgrid sites	1 3	2025-2026
Develop Glenarm BESS project (25 MW, online 2027)	1 3	2025-2027
Develop feed-in tariff (FIT) program for solar & storage targeting large institutional customers	1 3	2026
Streamline permitting and interconnection processes	1 3	2026
Develop the low interest loan program for low-income customers	1 3	2026
Develop incentive program for customer-owned storage	1 3	2026
Develop municipal solar installations at up to four initial sites (4-8 MW online 2028)	1 3	2026-2028
Explore other opportunities for solar and storage development (e.g. Rose Bowl, 710 Stub)	1 3 5	2026-2030
Develop Broadway BESS project (50+ MW, online 2030)	1 3 5	2026-2030
Develop microgrids at initial selected municipal properties	1 3	2027-2028
Partner with commercial and institutional sites for microgrid development	1 3	2027-2028
Continue public outreach and education campaign	1 3	2027-2030
Develop municipal solar installations at up to ten additional sites (8-16 MW online 2029-2030)	1 3	2027-2030
Partner with large customers and institutions to develop solar and storage under FIT program	1 3	2027-2030
Evaluate tariffs that incentive customer solar and storage adoption	1 3	2028
Continue development of microgrids at additional sites	1 3	2029-2030
<b>2 Develop Innovative Programs and Rates to Leverage Customer-Facing Solutions</b>		
Continue to deploy energy efficiency resources to meet energy efficiency goals	2 3	2025-2030
Enroll large customers in Voluntary Load Curtailment Program (VLCP)	2 3	2026
Evaluate building load management program models best suited for Pasadena	2 3	2026-2027
Evaluate program design for active managed charging of electric vehicles	2 3	2026-2027
Pilot building load management programs with small customer groups	2 3	2027-2028
Develop and pilot active managed charging programs	2 3	2027-2028
Develop TOU rates to incentivize load management, flexibility, and energy storage	1 2 3	2028
Deploy building load management programs across all customer classes	2 3	2028-2030
Deploy and scale active managed charging programs	2 3	2029-2030
<b>3 Additional Actions Related to Mitigating Glenarm Operations</b>		
Provide annual reporting on Glenarm operations	3	2026-2030
Reevaluate options for long-term Glenarm transition	3	2028
Assess renewable natural gas supply options	3	2028-2030
<b>4 Upgrade Power Delivery Infrastructure</b>		
Upgrade internal distribution infrastructure	3 4	2025-2027
Implement Advanced Metering Infrastructure (AMI) throughout the City	3 4	2025-2028
Publish 2027 Power Delivery Master Plan	3 4	2027
Increase import capability at TM Goodrich Receiving Station	3 4	2025-2035
Develop second point of interconnection with CAISO	3 4	2025-2040
<b>5 Leverage Emerging Technologies</b>		
Monitor emerging technology status	3 5	2025-2027
Coordinate with neighboring utilities to planning for hydrogen conversions	3 5	2025-2030

**Notes**

Items are categorized according to the most directly relevant area, but secondary linkages to other pillars are shown in "Applicable OSP Pillars"  
Additional detail on schedule and milestones for action items are provided in detailed action plan schedules

### ***Performance Metrics and Reporting***

The City Council, stakeholders, and the Pasadena community have expressed strong support and interest for the goals outlined in Resolution 9977. However, in order to continue maintaining reliable service, system safety, and ratepayer affordability, the OSP presents a flexible and adaptable set of action plans that position PWP to address new or changing conditions and priorities. To ensure transparency and accountability, PWP has developed a plan with regular checkpoints and updates to track progress and make adjustments, as needed. Key reporting efforts include:

- Quarterly Updates to MSC
- Annual and upon request updates to EAC
- Clean Energy Tracker Webpage
- 2026 and 2028 Waypoints
- Annual Customer Program Reports
- City Council Review of New Power Purchases

These efforts will allow the public to stay informed, and support City leadership so that they can make well-informed decisions. By working transparently and collaboratively, PWP will be better positioned to achieve goals.

### ***Financial and Resource Implications***

Development of the OSP included utilization of a long-term capacity expansion (“LTCE”) model to create complete resource portfolios including local and external resources. These portfolios were optimized to meet system requirements while minimizing costs, balancing power needs, meeting carbon-free targets, and satisfying resource adequacy requirements. The resulting portfolios represent a broad set of case studies through which to pursue carbon-free goals. Five portfolios were designed to provide carbon-free energy in each hour of the year, while two met needs over the course of the year. Figure 5 below shows the differences in installed capacity by resource type as compared to PWP’s existing resource portfolio.





### **COUNCIL POLICY CONSIDERATION:**

As a strategic plan specifically designed to decarbonize PWP's energy resource portfolio as soon as possible, the OSP supports the City Council's strategic goal to increase conservation and sustainability. It also supports the 2030 carbon-free goal set by Resolution 9977, which has been incorporated in PWP's 2023 Power IRP, and also contributes to the overall greenhouse gas reduction efforts of the City's Climate Action Plan.

### **ENVIRONMENTAL ANALYSIS:**

This action has been determined to be statutorily exempt from the California Environmental Quality Act (CEQA) pursuant to State CEQA Guidelines Section 15262. This Section states that a project involving only feasibility and planning studies for possible future actions which the agency has not approved, adopted, or funded are exempt from CEQA.

A primary goal of the OSP is to analyze ways to reduce the environmental impacts of Pasadena's overall energy portfolio, particularly the reduction of Greenhouse Gas emissions. Furthermore, any specific construction projects undertaken pursuant to the OSP will be subject to full CEQA compliance, both as and when appropriate.



**FISCAL IMPACT:**

Approval of the findings of the OSP and supporting PWP's OSP optimized future energy resource portfolios as identified herein will have no direct fiscal impact at this time. As PWP procures resources to meet clean energy targets, in response to the costs and availability of resources in the market, future utility portfolios and their associated costs may differ from the case studies developed in this planning exercise. Implementation of the goals outlined in the OSP Action Plan would hold potential substantial cost implications for PWP and its ratepayers. This exposure will be measured, since each implementation step would be brought before City Council before PWP commits to it.

Respectfully submitted,



DAVID M. REYES  
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Water and Power Department

Prepared by:



Kelly Nguyen  
Assistant General Manager

Approved by:



MIGUEL MÁRQUEZ  
City Manager

Attachments: (3)

- Attachment 1: Pasadena Water and Power Optimized Strategic Plan
- Attachment 2: OSP Action Plan Summary Chart
- Attachment 3: PWP Key Accomplishments Since 2018 Power IRP