

Agenda Report

December 4, 2023

TO: Honorable Mayor and City Council

THROUGH: Municipal Services Committee (November 14, 2023)

FROM: Water and Power Department

SUBJECT: ADOPTION AND APPROVAL OF THE 2023 POWER INTEGRATED RESOURCE PLAN FOR THE WATER AND POWER DEPARTMENT

RECOMMENDATION:

It is recommended that the City Council:

1. Find that the proposed actions are statutorily exempt from the California Environmental Quality Act ("CEQA") pursuant to CEQA Guidelines Sections 15262, Feasibility and Planning Studies; and 15271, Early Activities Related to Thermal Power Plants;
2. Adopt and approve the 2023 Power Integrated Resource Plan ("IRP") for filing with the California Energy Commission ("CEC") for the Water and Power Department ("PWP"); and
3. Support PWP's continuing decarbonization trajectory while exceeding State regulatory requirements, and simultaneously working towards achieving the policy goal of 100% Carbon-Free electricity by 2030, through the utilization of the Waypoint Framework supported by the 2023 IRP Scenario 2 modeling results.

ENVIRONMENTAL ADVISORY COMMISSION RECOMMENDATION:

On September 12, 2023, the Environmental Advisory Commission ("EAC") was presented an informational update regarding the recommendations in this report.

Subsequently, the EAC held a Special Meeting on September 26, 2023, and provided correspondence to the City Council in Attachment B.

MUNICIPAL SERVICES COMMITTEE RECOMMENDATION:

On October 10, 2023, the draft 2023 IRP was presented to the Municipal Services Committee (“MSC”). Discussion culminated with a directive for PWP to return with guidance specific to the Waypoint Framework, which is an interim guidance or destination solution that continues the trajectory of aggressive decarbonization, while continuing renewable and carbon-free additions. The model uniquely provides a Waypoint for future assessments, such as evaluating and/or reviewing the maturation of new and emerging technologies that will enable a 100% carbon-free solution and future.

The primary themes of the October 10, 2023, IRP discussions are summarized in Attachment B.

BACKGROUND:

Publicly Owned Utilities (“POU”) such as PWP must prepare an IRP at least once every five years and file with the CEC, in accordance with California regulations. PWP produced its latest IRP in 2018 and issued a voluntary update in 2021. However, while a standard IRP process uses modeling to identify an optimum scenario, PWP’s goal was defined in advance through City of Pasadena Resolution 9977, which directs the City Manager to use the IRP process to plan multiple approaches to achieve the policy goal to source 100% of Pasadena’s electricity from carbon-free sources by the end of 2030, while optimizing for affordability, rate equity, stability, and reliability. Accordingly, PWP modeled five scenarios, three of which meet goals of the Resolution.

For the development of the IRP, PWP contracted with the Alliance for Cooperative Energy Services Power Marketing LLC (“ACES”) for modeling and consulting services, a collaboration that included a computer simulation study of various energy resource portfolio designs that might be considered for Pasadena. This effort examined five distinct designs or conditions (hereinafter referred to as “scenarios”) and several related impact studies to produce useful findings that can inform future policies and programs affecting and related to PWP’s portfolio. Of the five studies, three were modeled to achieve 100% carbon-free electricity by 2030.

To ensure transparency in the modeling results, PWP contracted with Energy and Environmental Economics, Inc. (“E3”), a leading energy consulting firm focused on clean energy policy implementation, to conduct an independent review provided in Attachment C.

The 2023 IRP process also included robust public outreach, including creation of a Stakeholder Technical Advisory Group (“STAG”), a diverse collaboration of citizens and business representatives who attended numerous meetings and provided valuable input and feedback; two community meetings; and regular informational updates to both the MSC and EAC. A full list of meetings, discussion topics, and other outreach efforts appear in Attachment B.

Staff first presented the IRP to the MSC on October 10, 2023, and were directed to return with a plan providing a pathway to meeting the carbon-free goals of Resolution 9977 that incorporates a Waypoint Framework that provides for future interim planning assessments, while also provisioning time for the evolving maturity and technical feasibility of new and emerging carbon-free technologies.

The resulting Implementation Plan is included in Chapter 22 of the IRP document (Attachment A). It is aligned with carbon-free Scenario 2 and includes a Waypoint in 2028 at which time progress will be formally evaluated so that any required changes can be included in the 2028 IRP. The Implementation Plan defines a pathway to 100% carbon-free electricity by 2030 without losing time or opportunity costs from a planning perspective before the next IRP process in 2028.

Waypoint Framework Development:

The Waypoint identification was informed through a thorough examination of the IRP data, analysis, and scenario results. In the most general terms, the IRP Waypoint can be indirectly attributed to a critical path analysis, within a project plan.

The policy goal of the City of Pasadena Resolution 9977 is the primary determinate in both the evaluation and selection of the appropriate Waypoint. To the degree practical, the selection criteria of the Waypoint is strategically designed to align and optimize across the following considerations:

1. Waypoint will be in alignment with the policy goal of City of Pasadena Resolution 9977.
2. Waypoint identification will be in alignment with CEC and other regulatory requirements and guidelines including electric system reliability, minimization of impacts to ratepayers, and reduction of greenhouse gas ("GHG") emissions.
3. Waypoint will continue the aggressive trajectory of decarbonization, as affirmed by historical PWP performance.
4. Waypoint attributes and/or characteristics will generally align with the modeling results of a carbon-free scenario, such as 1, 2, or 3.
5. Waypoint identification, from a planning perspective, will ideally provide limited planning opportunity cost to achieving the policy goal of Resolution 9977 as defined in the scenario modeling results.
6. Waypoint will have an Implementation Plan that should be defined or informed by the IRP scenario modeling results.
7. Waypoint should align or support previous decarbonization guidance and directives of the City Council.
8. Waypoint must provide a reevaluation point to allow for reassessment, specifically related to the maturation of new and emerging technologies. It is widely accepted that such technologies will be required for a full decarbonization transition.
9. Waypoint aligns with support for energy procurement that is technology-flexible and in line with energy needs, as defined in Pasadena's City Council-approved State Legislative Platform.

The IRP modeling results defined by 100% Carbon-Free Scenarios 1, 2 and 3 have been closely examined and reviewed as these metrics are integral to the Waypoint Framework development.

PWP - Leaders in Clean Energy Practices

The 2023 IRP continues PWP’s ongoing focus on decarbonization efforts which have consistently exceeded California mandates. The 2018 IRP was one of the first SB-100 compliant IRPs in California, looking beyond regulatory requirements at the time and incorporating SB-100’s groundbreaking renewable and zero-carbon targets well in advance of other utilities. At this time, the City Council also made proactive decisions to terminate participation in the Intermountain Power Project coal contract and limit future long-term contracting opportunities to include renewable resources only. Resolution 9977 further accelerates the trajectory toward decarbonization by setting clean energy targets that are a decade or more ahead of State mandates and the overall utility industry.

By modeling the 2023 IRP with the ambitious goals of Resolution 9977, achievements at the 2028 Waypoint will far exceed compliance requirements for Renewable Portfolio Standard (“RPS”) and also Statewide GHG reduction targets. In addition, PWP’s portfolio will be achieving 107% clean energy on an annual basis at the 2028 Waypoint, 17 years before the 2045 State target.

Table I: Projected RPS and GHG performance at the Waypoint

Goal	Progress by 2028 Waypoint	State Requirement
RPS and Zero-Carbon	107% (Annually)	100% by 2045 (Annually)
GHG Emissions Reduction (compared to 1990 levels)	87%	85% (Statewide) by 2045

While PWP has long been a Statewide leader in clean energy practices, Resolution 9977 sets goals that far exceed regulations and overall Statewide efforts. PWP is committed to doing even more, to include achieving results that will become examples for other jurisdictions to follow.

Waypoint Metric Identified:

In terms of Waypoint selection, the selected time period rises to critical importance. As vetted during the MSC meeting on October 10, 2023, the Waypoint must allow time for the new and emerging technologies to mature and develop to scale.

The Waypoint has been identified through considerable analysis of the IRP modeling results and critical path. Based upon analysis, 2028 was selected, which also provides an additional benefit given this timeframe’s alignment with the next required IRP in 2028 for regulatory compliance submittal to the CEC.

Additionally, the Waypoint has been selected to align with the IRP results attributed to carbon-free Scenario 2. There are certain attributes of Scenario 2 that are attractive to include, such as acknowledgement of Pasadena's limited space for new utility-scale resources. Also, by installing the largest quantities of new resources, it represents the deepest decarbonization up to the Waypoint as compared to the other carbon-free scenarios.

Additional benefits of this specific Waypoint metric selection include:

1. 98% RPS or renewable energy forecasted to the 2028 Waypoint.
2. 107% renewables and zero-carbon forecast by 2028, meeting 2045 requirements 17 years in advance of State of California requirements.
3. Reduction of 800,853 metric tons of GHG from 1990 levels or 87% reduction in GHG from 1990 levels by 2028 forecast.
4. Provides time for reassessment in 2028, to evaluate progression of new enabling technologies that may have progressed in scale, feasibility, and technological maturation.
5. 2028 Waypoint aligns with the CEC's requirement to update and submit an IRP every five years.
6. In 2028, based on the Waypoint metric, PWP is forecasted to be a leader in carbon-free portfolio and decarbonization among all entities in California.

Implementation Plan – Scenario 2:

The 2023 IRP process has been both informative and valuable as it has identified optimized renewable portfolio configurations and power supply costs associated with pathways to carbon-free electricity by 2030. It also reinforced PWP's long-standing position that flexibility must be allowed in acquiring renewable and zero-carbon resources to ensure alignment with resource availability and shifting market trends.

As noted earlier, of the five modeled scenarios, Scenario 2 installs the largest number of new resources and is the most ambitious of the resource portfolios. This determined approach provides the best opportunity for achieving carbon-free electricity by 2030.

Procurement Plan through 2028 (Scenario 2):

The resource procurement and development for a plan to achieve 100% carbon-free electricity by 2030 will require a level of acquisition by 2028, in addition to various actions that support ongoing efforts. Table II below represents procurement aligned with Scenario 2 with a 2028 Waypoint. The exposition and development of the procurement plan is explained in greater detail in Chapter 22 of the IRP (Attachment A of this report).

Table II: Scenario 2 - New Resources to be installed by 2028

180 MW	New utility-scale solar
5 MW	Community solar
30 MW	New utility-scale wind
85 MW	New utility-scale storage

The following initiatives, which were also recommended by the EAC in their correspondence (Attachment B), represent concurrent activities and incremental areas of emphasis that PWP will continue to take that will contribute to the overall carbon reduction goals of the 2023 IRP:

- Continue expansion of distributed energy resources, both customer and utility-owned.
- Continue support of mass transit and electric vehicle fleet development and vehicle-to-grid distributed storage opportunities.
- Continue to study the reliability of PWP's evolving resource portfolio.
- Perform a cost-of-service study to identify projected resource portfolio capital expenditures over the next 20 years.
- Perform a rate design study that explores various options and addresses rate equity.
- Evaluate possible changes to customer incentives or subsidies, including low-income assistance, and any follow-on Net Energy Metering programs, and creation of a Community Solar program.
- Expand Demand-Side Management ("DSM"), expand Energy Efficiency programs, implement Advanced Metering Infrastructure ("AMI"), and explore AMI connection incentives to support DSM.
- Monitor the actual influence of the City's Building Electrification Ordinance, which becomes effective in 2025.
- Continue to monitor developments in emerging technologies and funding opportunities.

Path Forward:

In order to meet State of California compliance requirements and fulfill PWP's obligation to the community, it is respectfully recommended that the City Council adopt and approve the 2023 IRP. In addition to meeting CEC filing requirements, the IRP incorporates Resolution 9977, which directs the City Manager to use the IRP process to identify multiple approaches to transition to the policy goal of sourcing 100% of Pasadena's electricity from carbon-free sources by the end of 2030, while optimizing for affordability, rate equity, stability, and reliability.

The 2023 IRP also includes an Implementation Plan aligned with carbon-free Scenario 2, to achieve carbon-free electricity by 2030 but defines a formal Waypoint in Year 2028 to reevaluate and reassess new and emergent technologies that are fundamentally required

for industry to reach full 100% decarbonization. As is the usual practice with any IRP, PWP shall monitor progress, with updates to the MSC, as needed. Any recommended changes shall be addressed in the next IRP or IRP Update.

CITY COUNCIL POLICY CONSIDERATION:

The 2023 IRP supports the City's Urban Environmental Accords goals with respect to increasing renewable energy and reducing GHG emissions, the General Plan Energy Element, the 2018 Power IRP (as updated in 2021), and the City Council's Strategic Planning Goals. The 2023 IRP specifically supports the following Urban Environmental Accords goals: Action 1 - Renewable Energy; Action 2 - Energy Efficiency; and Action 3 - Climate Change. The 2023 IRP also satisfies the directives of Resolution 9977.

ENVIRONMENTAL ANALYSIS:

As shown in Table III, the City Council found that the adoption of PWP's past IRPs were exempt from review pursuant to State CEQA Guidelines Sections 15262 and 15271. CEQA exempts from its application those projects that involve "only feasibility or planning studies for possible future actions, which the agency, board or commission has not approved, adopted, or funded ... " and which do not have a legally binding effect on later activities. (State CEQA Guidelines §15262.) To fall under this exemption, however, the lead agency is required to consider environmental factors.

Table III: City Council Adoption of PWP's Past IRPs

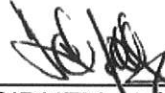
IRP	City Council Approval Date
2009	March 11, 2009
2012	March 5, 2012
2015	June 22, 2015
2018	December 10, 2018
2021 Update	January 31, 2022

PWP presents the 2023 IRP with strong consideration of environmental factors. A primary goal of the IRP is to analyze ways to reduce the environmental impact of Pasadena's overall energy portfolio, particularly, the reduction of GHG. Furthermore, any specific construction projects undertaken pursuant to the PWP 2023 IRP will be subject to full CEQA compliance, both as and when appropriate.

FISCAL IMPACT:

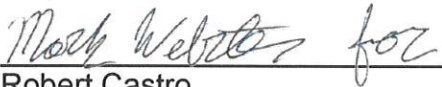
Approval of the PWP 2023 Power IRP compliance filing will have no direct fiscal impact. The IRP will, however, provide essential data and a framework to evaluate power resource and program choices, some of which, if executed, would hold potentially substantial cost implications for PWP and its electric ratepayers.

Respectfully submitted,



SIDNEY JACKSON
General Manager
Water and Power Department

Prepared by:



Robert Castro
Power Resource Planning Manager
Water and Power Department

Approved by:



MIGUEL MARQUEZ
City Manager

Attachments:

Attachment A: 2023 IRP (Latest Draft)

Attachment B: Agenda Report presented to MSC on October 10, 2023

Attachment C: Independent Review by E3

**----Attachments A-C of the Agenda Report presented to the MSC
on November 14, 2023, are included herein the report----**