



City of Palo Alto

Utilities Advisory Commission Staff Report

(ID # 14279)

Meeting Date: 6/8/2022

Report Type:

Title: Staff Request for UAC Feedback on the Development of the Electric Utility's Integrated Resource Plan

From: Director of Utilities

Lead Department: Utilities

REQUEST

Staff seeks UAC feedback on a proposed scope and work plan for the next update of the City's Integrated Resource Plan (the 2023 IRP) for the electric utility, which will be developed in compliance with Senate Bill 350 (Clean Energy and Pollution Reduction Act). There is no recommended action.

EXECUTIVE SUMMARY

Integrated resource planning is an analysis-driven approach that utilities have long used to ensure that they provide sufficient resources to reliably meet forecasted customer electrical energy and capacity needs in the most cost-effective way, while considering a comprehensive set of supply and demand resources (on equal footing) and satisfying environmental and other public policy objectives. In addition, it provides the utility an opportunity to seek community input and incorporate that feedback into its roadmap for the future.

The City is now beginning the process of updating its 2018 IRP, as required by state legislation (Senate Bill 350). While this update will ensure that the City manages its electric resources consistent with state and federal regulatory and legislative requirements, the City's climate sustainability goals, and the Utilities Department's strategic planning objectives, it will also provide a basis for the following key decisions and policies (among others) related to the electric portfolio in the 2024 to 2035 period, which is the planning horizon for the new IRP:

1. Western Contract – Evaluate whether to renew the City's hydroelectric contract with the Western Area Power Administration (WAPA), which expires at the end of 2024, or replace this contract with other carbon-free resources; and
2. California-Oregon Transmission Project (COTP) – Evaluate the best use for the City's 51 MW share of COTP after the City's layoff of that asset expires at the end of 2023.

In addition to these key strategic decisions, the IRP will address Palo Alto's long-term load forecast, giving particular consideration to the City's electrification efforts and aggressive climate and sustainability goals. However, the IRP is not intended to be a forum for reconsidering the Utilities Strategic Plan; for designing or developing new customer programs; for developing new initiatives to meet the City's Sustainability and Climate Action Plan (S/CAP) objectives; or for doing any significant distribution system planning.

Staff seeks UAC and community feedback on this analysis framework and process for developing the IRP over the next 18 months. The UAC and the community will be provided subsequent updates and opportunities to offer additional feedback as staff carries out the analysis.

BACKGROUND

An integrated resource plan (IRP) is a tool traditionally used by utilities to provide a roadmap for meeting forecasted electricity demand through a combination of supply-side resources (i.e. local and remote generation resources) and demand-side resources (e.g. customers installing energy storage systems or energy-efficient equipment and appliances) over a specified future period. A comprehensive decision analysis modeling tool is used to evaluate costs, benefits, and uncertainties related to various supply and demand portfolio alternatives with the objective of identifying the least-cost, least-risk portfolio of resources. Like all IRPs, this effort will take the following factors into account in identifying solutions:

1. **Loading Order.** Pursue all cost-effective energy efficiency and demand-side resources before contracting for new supply-side resources.
2. **Regulatory Compliance.** Comply with state and federal regulatory requirements (e.g. Renewable Portfolio Standards) and other standards as appropriate (e.g. CAISO capacity requirements).
3. **Council-adopted Climate Goals and Carbon Neutral Plan objectives.** Reduce carbon intensity of the electric portfolio by utilizing 1) maximum procurement of long-term Renewable Portfolio Standard (RPS)-eligible renewables; 2) existing large hydroelectric resources; and 3) Renewable Energy Credits (REC) when long-term resources are not sufficient.
4. **Customer Preferences.** Facilitate customer preference for other resources (e.g. local solar or storage) and facilitate the deployment in a cost-effective manner.
5. **Cost.** Identify the most cost-effective approach that addresses Council-adopted objectives. Manage existing resources to maximize value.
6. **Risk Management.** Structure the portfolio or add mitigations to manage known risks (e.g. market price risk or hydroelectric variability) and build flexibility into the portfolio to address other less quantifiable risks (e.g. regulatory uncertainty) through diversification of suppliers, contract terms, and resources, and through the use of creditworthy counterparties when appropriate.

The need to conduct a traditional IRP has been minimized significantly through California's and the City's adoption of several legislative initiatives and policies which mandate how resources will be procured— e.g. through loading order mandates, targets for roof-top solar installations, renewable portfolio standards, and capacity planning reserves. However, in October 2015, Governor Jerry Brown signed Senate Bill 350 (SB 350) into law, which among other things requires publicly owned utilities (POU) serving loads greater than 700,000 megawatt hours per year to develop, adopt, and submit an IRP to the California Energy Commission (CEC), and update it every 5 years. One of the main objectives of SB 350 is to ensure that POUs are on track to help the State meet its greenhouse gas emission reduction target of 40% below 1990 levels by 2030.

The City adopted its first IRP under the SB 350 requirements on December 3, 2018 ([Staff Report 9761](#)).¹ In addition to the IRP itself, the Council also approved:

¹ Prior to the 2018 IRP, the City used a similar tool, referred to as the Long-term Electric Acquisition Plan (LEAP), as a framework for its supply and demand resource policies and investment decisions. The LEAP was different than a traditional IRP, in that its primary focus was on how to manage the electric portfolio consistent with RPS and other

- 1) A set of four standardized tables that the CEC’s IRP regulations required POU’s to submit with their IRPs;
- 2) IRP Objective and Strategies ([Attachment A](#)) to guide future analysis and decisions; and
- 3) An IRP Work Plan ([Attachment B](#)) with a set of new initiatives and timelines for their completion, which staff recommended undertaking in order to prepare the City’s electric supply portfolio for the upcoming shifts in the electric utility industry.

Table 1 below lists the seven new initiatives proposed in the City’s 2018 IRP Work Plan, along with the current status of each one.

Table 1: Summary of 2018 IRP Work Plan Initiatives

Work Plan Initiative	Current Status
1. Evaluate the merits of committing to a new 30-year contract with WAPA starting in 2025.	Ongoing—will be part of 2024 IRP.
2. Evaluate the merits of rebalancing the electric supply portfolio to lower its seasonal and daily market price exposure, by more closely balancing the City’s long-term supplies with its hourly and monthly electric loads.	Ongoing—will be part of 2024 IRP.
3. Evaluate how to best utilize the City’s share of the California Oregon Transmission Project (COTP), when the long-term layoff of this asset ends in 2024.	Ongoing—will be part of 2024 IRP.
4. In addition to ensuring 100% of City’s annual electricity energy needs are met with carbon neutral supplies (on a kWh basis), evaluate the carbon content of the electric portfolio on an hourly basis, and recommend the merits of buying carbon offsets to ensure the carbon content of the cumulative hourly portfolio is zero on an annual basis.	Completed—Carbon Neutral Plan updated to use an hourly carbon accounting methodology in August 2020 (Staff Report 11556).
5. Investigate the merits and economics of monetizing excess renewable energy certificates to minimize the cost of maintaining an RPS compliant and carbon neutral electricity supply portfolio.	Completed—REC Exchange Program approved in August 2020 (Staff Report 11556).
6. Explore greater synergistic opportunities with NCPA and other agencies – such as newly formed community choice aggregators – to lower Palo Alto’s operating costs and rebalance the supply portfolio.	Ongoing—staff has engaged with new CCAs in numerous transactions and knowledge-exchange efforts.
7. Undertake a competitive assessment for the electric utility within the context of the large proliferation of customer-sited DER technologies, electrification initiatives, changing customer expectations, and potential regulatory changes. Develop contingencies to address the potential for large changes in the City’s load level or load profile.	Ongoing.

mandates rather than an exclusive focus on portfolio optimization. The City adopted its first LEAP in November 2001 (CMR: 425:01), with subsequent updates in 2002 (CMR: 398:02), 2007 (CMR: 158:07), and 2011 ([Staff Report 1317](#)).

DISCUSSION

SB 350 required POU's to adopt their initial IRPs by January 1, 2019, with subsequent updates required every five years thereafter. An update of the City's last IRP is therefore needed by January 2024; an updated IRP will also provide a basis for several key decisions and policies related to the electric portfolio in the 2024 to 2035 planning horizon.

Objectives of the 2024 IRP

At a minimum, Section 9621 of the California Public Utilities Code requires that the City's IRP:

1. Meet GHG emissions targets that reflect the electricity sector's contribution to achieving the economy-wide greenhouse gas emissions reductions of 40 percent from 1990 levels by 2030;
2. Ensure procurement of at least 60 percent eligible renewable energy resources by 2030;
3. Meet the following goals:
 - a. Minimize impacts on ratepayers' bills;
 - b. Ensure system and local reliability;
 - c. Enter into long- and short-term contracts for electricity and RECs;
 - d. Strengthen the diversity, sustainability, and resilience of the bulk transmission and distribution systems, and local communities;
 - e. Enhance distribution systems and demand-side energy management;
4. Include details of the utility's rate design that support transportation electrification, and existing or planned incentives to support transportation electrification, including rebates. The rate design shall include details for all applicable transportation sectors, including, but not limited to, on-road and off-road vehicles in the light-, medium-, and heavy-duty sectors. Each IRP shall also include information about the utility's customer education and outreach efforts to inform utility customers of available incentives and decision-making tools, such as cost calculators or cost estimates that can assist customers in predicting the cost of paying for electricity for these vehicles; and
5. Consider the role of existing renewable generation, grid operational efficiencies, energy storage, and distributed energy resources, including energy efficiency, in helping to meet energy and reliability needs the hours of net peak demand, while reducing the need for new generation and transmission resources in achieving the state's energy goals at the least cost to ratepayers;²
6. Address the following procurement topics:
 - a. Energy efficiency and demand response resources;
 - b. Energy storage;
 - c. Transportation electrification;
 - d. A diversified procurement portfolio consisting of both short-term and long-term electricity, electricity-related, and demand response products;
 - e. Resource adequacy requirements.

In addition to satisfying these obligations, staff intends to use this IRP process to help the City make two major decisions regarding its supply portfolio (which were also listed in the City's 2018 IRP Work Plan): (a) whether to renew the City's contract with the WAPA for hydroelectric resources from the Central Valley Project (CVP), which expires at the end of 2024; and (b) what to do with the City's share of the California-Oregon Transmission Project (COTP) after the City's layoff of that asset expires at the end of 2023.

² Note that items 4 and 5 are new requirements adopted by the state after the 2018 IRP submission date.

As staff undertakes this IRP effort, it will do so while maintaining consistency with the City of Palo Alto Utilities (CPAU) 2018 Mission Statement: “To provide safe, reliable, environmentally sustainable and cost-effective services.” In addition, staff will be mindful of CPAU’s supply portfolio management principles:

1. *Demand and Supply Resource Acquisition* – Meet customer electricity needs through the acquisition of least total cost energy and demand resources including an assessment of the environmental costs and benefits.
2. *Supply Cost Management* – Manage supply portfolio cost uncertainty to meet rate and reserve objectives.
3. *Local Distributed Generation and Transmission* – Enhance supply reliability to meet City and customer needs by pursuing opportunities including transmission system upgrades and local generation.

Finally, staff will use this IRP development process as an opportunity to engage the community and solicit their input into these major strategic decisions that will be made along the way. Public participation and feedback are valuable components of the IRP process. Outside of speaking at UAC and Council meetings, customers rarely have an opportunity to weigh in directly on long-term portfolio management decisions; however, during this process staff will make an effort to more broadly survey customers about the direction they would like CPAU’s electric supply portfolio to go. For example, in evaluating the WAPA and COTP decisions, staff’s primary focus will be on minimizing total portfolio cost and risk (while adhering to existing Council-adopted policies and state mandates). However, staff seeks feedback from the UAC and the community as to whether to give any weight to other factors in the evaluation process—such as the geographic location of resources; technology diversification of the supply portfolio; or matching the portfolio’s total output to the City’s load profile in order to minimize load-balancing market transactions.

Proposed 2024 IRP Scope

While an IRP is typically a lengthy report that provides a long-term roadmap for utility planners, it is important to remember what its scope encompasses: Selecting a set of supply-side and demand-side resources to meet forecasted customer demand, while minimizing cost, risk, and environmental impact. While this scope is broad, it is also notable for what it excludes. This scope does not include updating the [Utilities Strategic Plan](#) (which was approved in 2018); it does not include designing or developing new customer programs; it does not involve developing new initiatives to meet the Sustainability and Climate Action Plan (S/CAP) objectives; and it includes only a very limited focus on distribution system planning (i.e., only to the extent that when evaluating resource portfolio mixes that involve a large amount of distributed energy resources (DERs), the IRP analysis must account for the cost of investing in the distribution system to enable these DERs to be adopted). Maintaining these limitations on the IRP’s scope is critical to ensuring the community can focus on the important long-term supply portfolio decisions that need to be made soon, and therefore critical to the success of the IRP process.

NEXT STEPS

The schedule and structure of the IRP process is guided in large part by requirements imposed by SB 350 and CEC guidelines to implement it.³ However, as noted earlier, the timing of the IRP process is also dictated by the need to make long-term resource investment decisions around the City’s supply portfolio

³ SB 350 requires the development and submission of an updated IRP to the CEC no later than January 1, 2024.

(related to the WAPA hydroelectric contract and the end of the COTP layoff). To help inform the analysis around those decisions, staff has developed a detailed workplan ([Attachment C](#)) that includes:

- Acquiring electric portfolio modeling and optimization software;
- Issuing a renewable energy and storage request for proposals (RFP) to develop a set of alternatives to compare the extended WAPA hydroelectric contract against;
- Conducting and sharing portfolio rebalancing and optimization analysis; and
- Researching options for the use of COTP after the current layoff ends, and meeting with other COTP owners to explore these options.

In addition to this internal work, to address the City’s electric portfolio planning needs in a comprehensive IRP update and meet SB 350’s requirements, staff proposes a series of public discussions on a range of topics over the next 12 to 18 months. These discussions will enable the public to have a better understanding of the issues and decisions facing the Electric Utility and to provide input and direction early in the process. Table 2 below provides an overview of these proposed meetings and their objectives.

Table 2: Proposed 2024 IRP Public Meetings

Meeting Topic	Meeting Objectives/Goals	Date / Forum
1. IRP Overview and Work Plan	Provide a high-level overview of IRP requirements, guiding principles, scope, and timeline.	June 2022 UAC
2. COTP and WAPA Base Resource Discussion	Provide an overview of COTP and the WAPA hydroelectric contract, and a high-level discussion of the costs, benefits, and uncertainties around each.	November 2022 UAC
3. Load Forecast Scenario Planning	Discuss the role of electrification, electric vehicles, energy efficiency, local/distributed generation, and storage on the City’s load forecast and distribution system planning needs.	December 2022 UAC
4. Portfolio Optimization Results and Feedback	Overview of electric load forecast, existing supply resources, renewable RFP results, and initial results of portfolio optimization analysis.	February 2023 UAC
5. Preliminary Long-term Plan	Present refined portfolio optimization analysis results and staff’s recommended supply portfolio.	June 2023 UAC
6. Proposed Final IRP	Present draft IRP report and implementation plan.	August 2023 UAC
7. Final IRP	Seek approval of IRP report and implementation plan.	November 2023 Council

Staff will incorporate the UAC’s input on the proposed IRP work plan and portfolio analysis process, and will return to discuss the initial findings of the analysis in the future.

RESOURCE IMPACT

There is no direct resource impact as a result of the proposed IRP work plan. Work will be performed almost entirely by existing staff, who will collaborate with staff from NCPA and other municipal utilities in this effort when possible. The cost of acquiring portfolio optimization software and a minimal amount of support from consultants (estimated at about \$100k) has already been accounted for in the annual Utilities Department budget.

POLICY IMPLICATIONS

There is no direct policy impact associated with the proposed work plan, but any changes made through IRP will affect policy related to electric portfolio management. Staff will also update the IRP to ensure consistency with the City's sustainability goals as established in its Sustainability and Climate Action Plan.

ENVIRONMENTAL REVIEW

The Utilities Advisory Commission's discussion of the IRP work plan does not meet the definition of a project under Public Resources Code 21065 and is therefore California Environmental Quality Act (CEQA) review is not required.

Attachments:

- Attachment A: 2018 IRP Objective & Strategies
- Attachment B: 2018 IRP Work Plan Initiatives
- Attachment C: Proposed 2024 IRP Work Plan
- Attachment D: Presentation

2018 Electric Integrated Resource Plan (EIRP) Objective and Strategies

EIRP Objective

To provide safe, reliable, environmentally sustainable and cost-effective electric resources and services to all customers.

EIRP Strategies

1. **Pursue an Optimal Mix of Supply-side and Demand-side Resources:** When procuring to meet demand, pursue an optimal mix of resources that meets the EIRP Objective, with cost-effective energy efficiency, distributed generation, and demand-side resources as preferred resources. Consider portfolio fit and resource uncertainties when evaluating cost-effectiveness.
2. **Maintain a Carbon Neutral Supply:** Maintain a carbon neutral electric supply portfolio to meet the community's greenhouse gas (GHG) emission reduction goals.
3. **Actively Manage Portfolio Supply Cost Uncertainties:** Structure the portfolio or add mitigations to manage short-term risks (e.g. market price risk and hydroelectric variability) and build flexibility into the portfolio to address long-term risks (e.g. resource availability, customer load profile changes, and regulatory uncertainty) through diversification of suppliers, contract terms, and resource types.
4. **Manage Electric Portfolio to Ensure Lowest Possible Ratepayer Bills:** Pursue resources in a least-cost, best-fit approach in an effort to ensure ratepayer bills remain as low as possible, while adhering to Council-adopted sustainability, rate, and financial objectives and guidelines.
5. **Partner with External Agencies to Implement Optimization Opportunities:** Engage and partner with external agencies to maximize resource value and optimize operations.
6. **Maintain Flexible Supplies to Effectively Meet Changes in Customer Loads & Load Profiles:** Maintain electric supply resource flexibility in anticipation of potential changes in customer loads due to distributed energy resources, efficiency, electrification, or for other reasons.
7. **Ensure Reliable and Low-Cost Transmission Services:** Work with the transmission system operator to receive reliable service in a least cost manner.
8. **Support Local Electric Supply Resiliency:** Coordinate supply portfolio planning with utility-wide efforts to support local measures and programs that enhance community electric supply resiliency.
9. **Comply with State and Federal Laws and Regulations:** Ensure compliance with all statutory and regulatory requirements for energy, capacity, reserves, GHG emissions, distributed energy resources, efficiency goals, resource planning, and related initiatives.

2018 EIRP Strategies & Related New Initiatives

There are a number of new initiatives and numerous on-going tasks related to implementing the EIRP Strategies. These activities are supported by about six to eight CPAU staff, both from the supply side and demand-side (or customer) programs. In addition, CPAU relies on joint action agencies and external service providers to implement programs and initiatives. Supply and customer program staff also coordinates with retail rate development, distribution system engineering, and operations staff to implement programs and investments in an integrated manner.

Described below are the nine strategies and eight new initiatives that are expected to be undertaken in the next three to six years. Work tasks related to on-going activities have not been called out separately.

EIRP Strategies & Related New Initiatives

1. **Pursue an Optimal Mix of Supply-side and Demand-side Resources:** When procuring to meet demand, pursue an optimal mix of resources that meets the EIRP Objective, with cost-effective energy efficiency, distributed generation, and demand-side resources as preferred resources. Consider portfolio fit and resource uncertainties when evaluating cost-effectiveness.
 - a. **Initiative #1:** Evaluate the merits of committing to a new 30-year contract with Western starting in 2025. [Recommendation on initial commitment to the UAC in early 2020; recommendation on final commitment in early 2024.]
 - b. **Initiative #2:** Evaluate the merits of rebalancing the electric supply portfolio to lower its seasonal and daily market price exposure, by more closely balancing the City's long-term supplies with its hourly and monthly electric loads. [Initial scoping assessment report to the UAC by December 2019.]
 - c. **Initiative #3:** Evaluate how to best utilize the City's share of the California-Oregon Transmission Project (COTP), when the long-term layoff of this asset ends in 2024. [Initial assessment report to UAC by December 2019, in tandem with Initiative #2 initial scoping assessment report.]
 - d. Continue ongoing evaluation of all cost-effective distributed energy resources (DERs), such as energy efficiency, distributed generation, energy storage, and demand response. Update forecasts of DER impacts on retail sales and load shapes for use in strategic planning, rate-making, and budget forecasting. [Initial assessment to be completed in Distributed Energy Resource (DER) and Customer Program Plan for Council approval by June 2019.]

2. **Maintain a Carbon Neutral Supply:** Maintain a carbon neutral electric supply portfolio to meet the community's greenhouse gas (GHG) emission reduction goals.
 - a. **Initiative #4:** In addition to ensuring 100% of City's annual electricity energy needs are met with carbon neutral supplies (on a kWh basis), evaluate the carbon content of the electric portfolio on an hourly basis, and recommend the merits of buying carbon offsets to ensure the carbon content of the cumulative

hourly portfolio is zero on an annual basis. Also evaluate the manner in which the City communicates with customers about the carbon content of the electric portfolio. [Initial staff recommendation to the UAC by December 2019.]

3. **Actively Manage Portfolio Supply Cost Uncertainties:** Structure the portfolio or add mitigations to manage short-term risks (e.g. market price risk and hydroelectric variability) and build flexibility into the portfolio to address long-term risks (e.g. resource availability, customer load profile changes, and regulatory uncertainty) through diversification of suppliers, contract terms, and resource types.
 - a. This is an on-going active management strategy; no new initiatives are planned.
4. **Manage Electric Portfolio to Ensure Lowest Possible Ratepayer Bills:** Pursue resources in a least-cost, best-fit approach in an effort to ensure ratepayer bills remain as low as possible, while achieving other Council-adopted sustainability, rate, and financial objectives.
 - a. **Initiative #5:** Investigate the merits and economics of monetizing excess renewable energy certificates to minimize the cost of maintaining an RPS compliant and carbon neutral electricity supply portfolio. [Initial staff recommendation to the UAC by December 2019.]
5. **Partner with External Agencies to Implement Optimization Opportunities:** Actively engage and partner with external agencies to maximize resource value and optimize operations.
 - a. **Initiative #6:** Explore greater synergistic opportunities with NCPA and other agencies – such as newly formed community choice aggregators – to lower Palo Alto’s operating costs and rebalance the supply portfolio. [Initial assessment to UAC by December 2019.]
6. **Manage Supplies to Meet Changing Customer Loads and Load Profiles:** Maintain electric supply resource flexibility in anticipation of potential changes in customer loads due to distributed energy resources, efficiency, electrification, or for other reasons. At the same time, use retail rates and other available tools to influence customer load changes in a manner that minimizes overall costs and achieves other Council objectives.
 - a. **Initiative #7:** Implement 2018 Utilities Strategic Plan Priority 4, Strategy 4, Action 2 by undertaking a competitive assessment for the electric utility within the context of the large proliferation of customer-sited DER technologies, electrification initiatives, changing customer expectations, and potential regulatory changes. Develop contingencies to address the potential for large changes in the City’s load level or load profile. [Initial assessment to UAC in December 2020.]
7. **Ensure Reliable and Low-cost Transmission Services:** Work with the transmission system operator to receive reliable service in a least-cost manner.
 - a. This is an on-going activity; no new initiatives are planned.

Attachment B

8. **Support Local Electric Supply Resiliency:** Coordinate supply portfolio planning with utility-wide efforts to support local measures and programs that enhance community electric supply resiliency.
 - a. On-going supporting role in utility-wide efforts.

9. **Comply with State and Federal Laws and Regulations:** Ensure compliance with all statutory and regulatory requirements for energy, capacity, reserves, GHG emissions, distributed energy resources, efficiency goals, resource planning, and related initiatives.
 - a. Ongoing activities in collaboration with NCPA, CMUA and other joint action agencies.



Electric Integrated Resource Plan Kickoff Discussion

June 8, 2022

www.cityofpaloalto.org

PURPOSE OF PRESENTATION

- Provide a refresher course on Integrated Resource Planning
 - Palo Alto's resource planning history
 - California IRP requirements
- Introduce key policy questions:
 - Western Base Resource contract renewal vs. replacement
 - California-Oregon Transmission Project (COTP) usage
- Propose an approach to develop a new IRP for the 2024-2035 planning horizon
- Get UAC feedback on the proposed Work Plan including future discussion items and timeline



PART 1: INTEGRATED RESOURCE PLANNING OVERVIEW

June 8, 2022

www.cityofpaloalto.org

WHAT IS AN INTEGRATED RESOURCE PLAN?

- A roadmap for meeting forecasted demand through a combination of supply-side (i.e. generation) and demand-side (e.g. efficiency, demand response, storage) resources
- Analysis framework for identifying the most cost-effective, least-risk portfolio of resources

FACTORS CONSIDERED IN AN IRP

- **Loading Order** – Pursue all cost-effective energy efficiency and demand-side resources
- **Regulatory Compliance** – Comply with all regulatory requirements
- **Climate Goals** – Maintain a carbon neutral electric portfolio
- **Customer Preferences** – Facilitate individual customer preferences for alternative resources
- **Cost** – Identify the most cost-effective approach to meet policy directives
- **Risk Management** – Structure the portfolio or add mitigations to manage known risks

HISTORY OF CPAU PLANNING INITIATIVES (1992-Present)

- **1992:** City's first ten-year Electric Integrated Resource Plan (IRP)
- **2001:** City's first Long-term Electric Acquisition Plan (LEAP)
- **2002:** California and Palo Alto adopts first Renewable Portfolio Standard
- **2006:** California adopts Global Warming Act – (1990 levels by 2020 – 15%)
- **2007:** City's Climate Protection Plan – sets GHG reduction goals
- **2007:** LEAP Updated – focus on loading order and RPS update
- **2007:** First 10-year Energy Efficiency Plan (last updated in 2017)
- **2010-11:** LEAP Updated – focus on carbon reduction goals
- **2017-18:** City completes first IRP under SB 350 requirements (through 2030)

CALIFORNIA'S IRP REQUIREMENTS (SB 350)

- Help the state meet its GHG reduction targets (40% below 1990 levels by 2030)
- Ensure procurement of at least 60 percent eligible renewable energy resources by 2030
- Minimize impacts on ratepayers' bills
- Ensure system and local reliability
- Enter into long- and short- term contracts for electricity and RECs
- Strengthen the diversity, sustainability, and resilience of the bulk transmission and distribution systems, and local communities
- Enhance distribution systems and demand-side energy management

CALIFORNIA'S IRP REQUIREMENTS (SB 350), cont.

- Address the following procurement topics:
 - Energy efficiency and demand response resources
 - Energy storage
 - Transportation electrification
 - A diversified procurement portfolio
 - Resource adequacy requirements
- Include details of the utility's rate design that support transportation electrification
- Consider the role of various demand and supply resources in meeting energy and reliability needs in the hours of net peak demand, while reducing the need for new resources



PART 2: KEY POLICY QUESTIONS

June 8, 2022

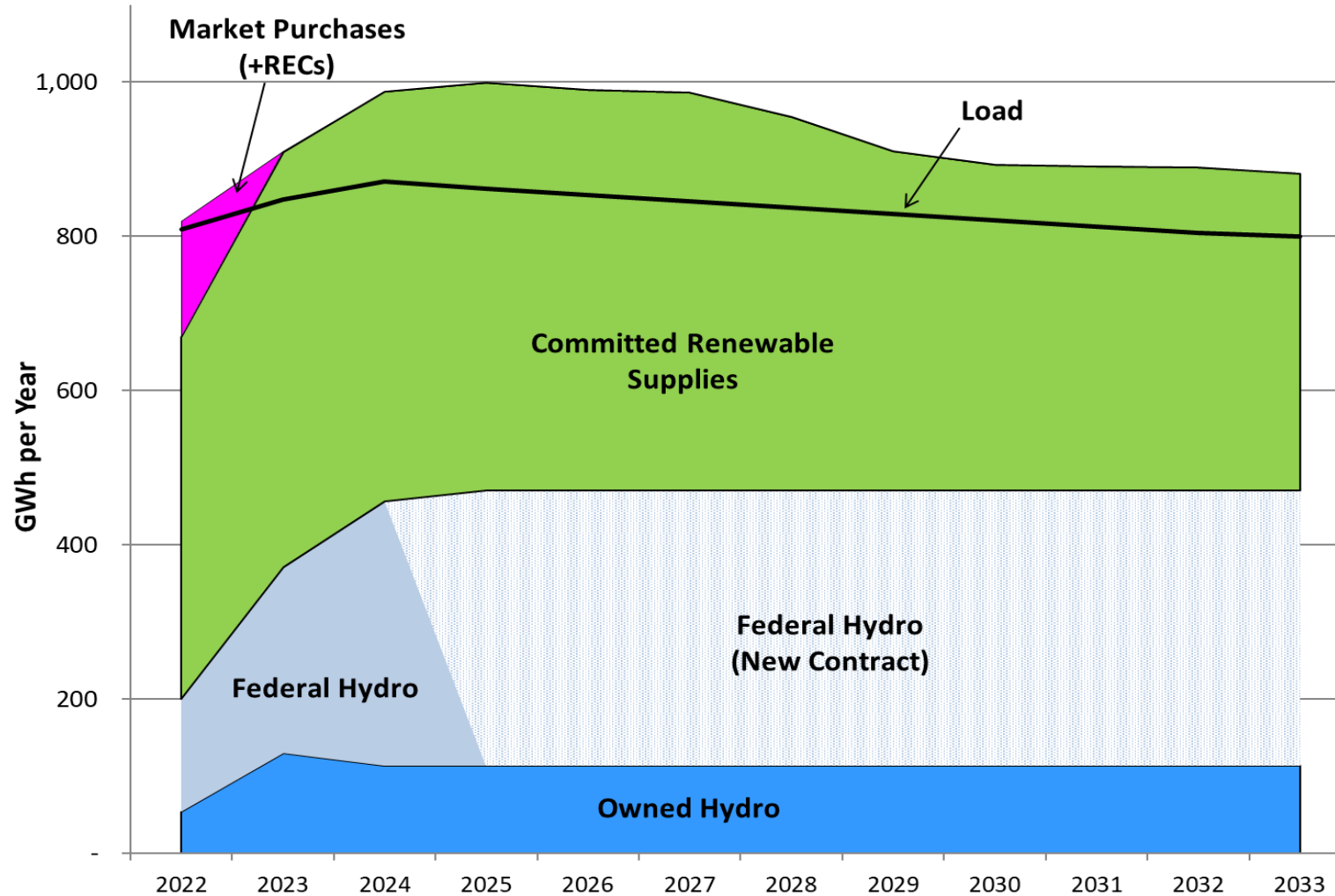
www.cityofpaloalto.org

WESTERN BASE RESOURCE CONTRACT DECISION

- Central Valley Project (CVP) is owned and operated by the U.S. Bureau of Reclamation
- CVP's electric output is marketed by the Western Area Power Administration (WAPA) under the Western Base Resource contract (2005-2024)
- Total CVP Capacity: 2,112 MW
- Palo Alto's allocation: 12.3%
 - ~360 GWh in an average year
 - ~40% of City's supply
- Annual WBR contract cost: ~\$12 million
- Palo Alto has the option to renew the WBR contract for 2025-2054
 - Deadline of June 30, 2024 to reduce/terminate the renewed WBR contract

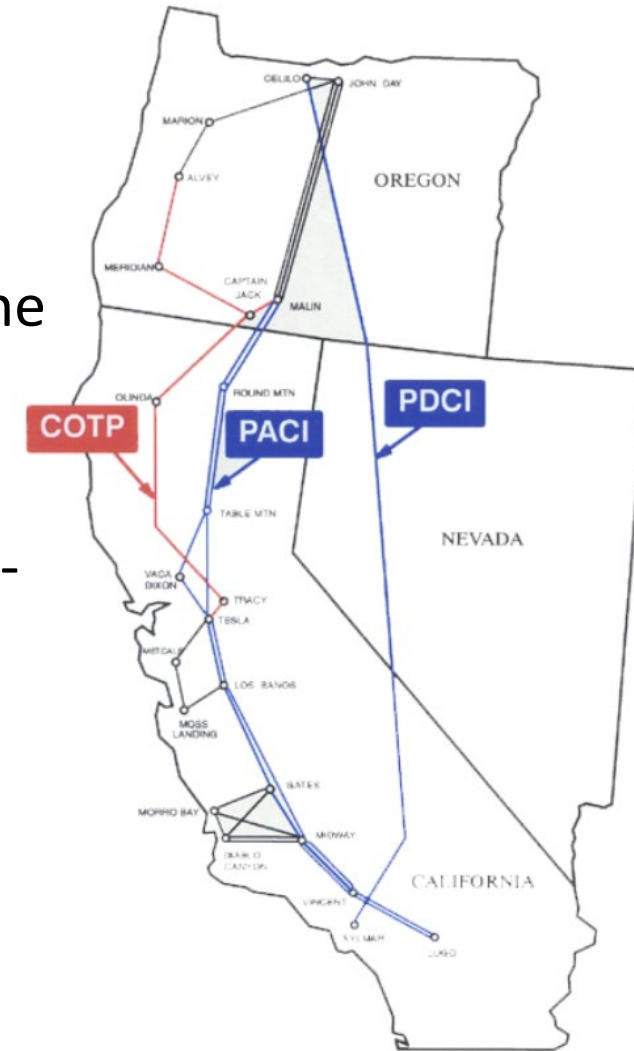


PALO ALTO'S ELECTRIC LOAD & SUPPLY PORTFOLIO



CALIFORNIA-OREGON TRANSMISSION PROJECT DECISION

- COTP is a 340-mile long, 1,600 MW, 500 kV transmission power project between Southern Oregon and Central California
- Owned by the Transmission Association of Northern California (a joint powers agency of which Palo Alto is a member), along with the City of Redding, WAPA, two California water districts, and PG&E
- Palo Alto's share is 51 MW (4% of the TANC portion of COTP)
- Due to low utilization, Palo Alto laid off its share of COTP (for 2008-2023) to SMUD, TID, and MID
 - The layoff recipients are covering Palo Alto's debt costs during the layoff period, but Palo Alto will owe a large payment to them at the end of the layoff for long-term improvements made to the project during the layoff





PART 3: PROPOSED 2023 IRP OBJECTIVES & WORK PLAN

June 8, 2022

www.cityofpaloalto.org

OBJECTIVES OF THE IRP DEVELOPMENT PROCESS

- **SB 350 Compliance** – Fully comply with all IRP requirements
- **Western Decision** – Evaluate whether to renew the WBR contract for 2025+, or reduce/terminate it and replace it with other resources
- **COTP Decision** – Evaluate what to do with COTP when the layoff ends in 2024: use it ourselves, negotiate a new layoff, or let CAISO use it
- **Community Engagement** – Solicit public input into strategic decisions about the supply portfolio

OUTSIDE THE IRP SCOPE

- The IRP is not going to:
 - Update the Utilities Strategic Plan
 - Design new customer programs
 - Design new S/CAP initiatives
 - Provide any serious distribution system planning

NEXT STEPS

- Issue a renewable energy / storage RFP, so we have alternative options to compare the renewed WAPA contract against
 - RFP will seek local generation offers, but these are expected to be limited
- Contract for supply portfolio modeling and optimization software
- Use software to perform portfolio optimization analysis, including comparison of WAPA contract and other alternatives
- Work with a consultant to analyze post-layoff uses of COTP, and discuss a potential new layoff with other COTP owners
- Solicit public input on the direction of the supply portfolio

PROPOSED IRP WORK PLAN

Meeting Topic	Date / Forum
IRP Overview and Work Plan	June 2022 / UAC
COTP and Western Base Resource Discussion	November 2022 / UAC
Load Forecast Scenario Planning	December 2022 / UAC
Portfolio Optimization Results and Feedback	February 2023 / UAC
Preliminary Long-term Plan	June 2023 / UAC
Proposed Final IRP	August 2023 / UAC
Final IRP	November 2023 / Council



CITY OF
**PALO
ALTO**

Jim Stack, Ph.D.

Senior Resource Planner

james.stack@cityofpaloalto.org

(650) 329-2314