



CITY OF
**PALO
ALTO**

**CITY OF PALO ALTO
CITY COUNCIL
Special Meeting**

**Monday, December 04, 2023
Council Chambers & Hybrid
5:30 PM**

Agenda Item

3. Finance Committee and Utilities Advisory Commission Recommend the City Council Adopt a Resolution Approving the 2023 Electric Integrated Resource Plan



CITY OF
**PALO
ALTO**

City Council Staff Report

From: City Manager

Report Type: CONSENT CALENDAR

Lead Department: Utilities

Meeting Date: December 4, 2023

Staff Report:2307-1750

TITLE

Finance Committee and Utilities Advisory Commission Recommend the City Council Adopt a Resolution Approving the 2023 Electric Integrated Resource Plan

RECOMMENDATION

The Finance Committee, Utilities Advisory Commission (UAC), and staff recommend that the City Council adopt a resolution (Attachment A):

1. Approving the 2023 Electric Integrated Resource Plan (IRP)¹, which includes the four standardized tables required under the California Energy Commission’s (CEC) IRP Guidelines; and
2. Approving the IRP Objective and Strategies to guide future analysis and decisions (Attachment C).

EXECUTIVE SUMMARY

In 2018, the City approved its first IRP—a comprehensive long-term electric supply planning document that the City is required to complete every five years under state law². With this report, the Finance Committee, UAC, and staff recommend approval of the City’s second IRP.

The current IRP, which must be approved by Council by January 1, 2024 in order to satisfy the City’s regulatory requirements, has a planning period of 2023 through 2045. The City of Palo Alto Utilities (CPAU) currently has sufficient carbon-neutral supply resources to meet projected loads through 2028, with approximately 40% of its resources projected to come from hydroelectric supplies and the remaining 60% from renewable energy contracts. The City’s projected load is expected to increase significantly over the next several years, largely due to new data center projects being implemented by multiple large commercial customers, along with the effects of the City’s building and transportation electrification efforts. A primary focus of this IRP, therefore,

¹ Electric IRP <https://www.cityofpaloalto.org/files/assets/public/v/2/agendas-minutes-reports/reports/city-manager-reports-cmrs/attachments/2023-irp-report.pdf>

² CA Public Utilities Code Sec. 9621(b).

is determining the optimal mix of resources to use to satisfy this growing load. Additionally, the City's 20-year contract with the Western Area Power Administration (WAPA) for hydroelectric resources, which supplies over 30% of the City's energy needs in a normal hydro year, expires at the end of calendar year 2024. As with the 2018 IRP, another focus of the current IRP is determining whether to renew the contract with WAPA for an additional 30-year term (and if so, at what participation level) and/or seek other renewable supplies to meet City loads.

The IRP includes a set of four standardized tables, which detail the City's energy, renewable energy, capacity, and greenhouse gas (GHG) emissions projections through 2045, as well as the latest versions of the City's Renewable Portfolio Standard (RPS) Procurement Plan.

In addition to the City's 2023 IRP and its associated documents, this report includes proposed IRP Objective and Strategies to guide future analysis and decisions as staff works to prepare the City's electric supply portfolio for the upcoming shifts in the electric utility industry.

BACKGROUND

Prior to 2018, the City engaged in integrated resource planning through periodic updates to its Long-term Electric Acquisition Plan (LEAP)³. But in 2015, SB 350 was signed into law, and it includes a requirement that publicly-owned utilities (POUs) serving loads greater than 700,000 megawatt-hours per year, such as Palo Alto, develop and adopt an IRP and submit it to the California Energy Commission (CEC) by January 2019 and every five years thereafter.⁴

The current IRP planning period is from 2023 through 2045. As noted in the IRP report, through 2028 the City expects to have sufficient resources to meet its forecasted electric loads, with renewable power contracts supplying about 60% of its needs and the remainder coming from hydroelectric resources. This all assumes that the City renews its contract for the Western hydroelectric resource which expires at the end of calendar year 2024 for an additional 30-year period. The City also has the option to reduce its allocation under this contract (or exit it altogether) until July 1, 2024. And if the City does renew the Western contract, it will also have the option to reduce its allocation or exit the contract once every five years throughout the 30-year contract term. Therefore, a significant consideration for the IRP is the question of whether to renew the contract with Western (and if so, at what participation level) and/or seek other carbon neutral power supplies. Staff presented a preliminary analysis of the City's long-term electric supply portfolio and a variety of potential new resource options, along with an update to its long-term load forecast, to the UAC for discussion in July 2023.

³ The City's last LEAP update was approved by Council on April 16, 2012

<https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/reports/city-manager-reports-cmrs/year-archive/2012/04-16-2012-id-2710.pdf>

⁴ The Clean Energy and Pollution Reduction Act of 2015 also raised the state's renewable portfolio standard (RPS) to 50% by 2030 and required a doubling of energy efficiency savings by 2030. (The RPS requirement was later increased to 60% by 2030 via SB 100.) The primary objective of the IRP requirement in SB 350 is to ensure that the state's large POUs are on track to reduce their greenhouse gas emissions, helping the state meet its overall target of reducing GHG emissions to 40% below 1990 levels by 2030.

Beginning in June 2022, staff has presented five different reports to the UAC and Council (including the present one) directly or indirectly related to the development of Palo Alto’s 2023 IRP. These presentations and reports are summarized in Table 1 below.

Table 1: Public Process Summary for Development of the 2023 IRP

Forum	Date	Topic	Link
UAC	6/8/2022	Overview of CPAU’s IRP Development Process	Report⁵
UAC	12/7/2022	Discussion of CPAU’s Long-term Electric Load Forecast	Report⁶
UAC	7/5/2023	Presentation of Electric Supply Portfolio Modeling Results	Presentation⁷
Council	9/18/2023	Annual Carbon Neutral Plan and RPS Supply Update	Report⁸
UAC	10/11/2023	Recommendation to Approve CPAU’s 2023 IRP	Report⁹
Finance	11/7/2023	Recommendation to Approve CPAU’s 2023 IRP	Report¹⁰
Council	12/4/2023	Recommendation to Approve CPAU’s 2023 IRP	TBD

Through these presentations and discussions, staff has laid out the motivations and context for the IRP, and described the resources currently in the City’s supply portfolio as well as the upcoming planning decisions and uncertainties facing the City. Staff felt that this level of public discussion was important given that the City must make some important planning decisions in the next several years.

CEC IRP Guidelines & Required Elements

The schedule and structure of the IRP process has been dictated in large part by state law,¹¹ which required Council adoption of Palo Alto’s first IRP by January 1, 2019¹², submission to the CEC by

⁵ Staff Report 14279 <https://www.cityofpaloalto.org/files/assets/public/v/2/agendas-minutes-reports/agendas-minutes/utilities-advisory-commission/archived-agenda-and-minutes/agendas-and-minutes-2022/06-08-2022/06-08-2022-id-14279-item-4-irp.pdf>

⁶ Staff Report 14908 <https://www.cityofpaloalto.org/files/assets/public/v/2/agendas-minutes-reports/agendas-minutes/utilities-advisory-commission/archived-agenda-and-minutes/agendas-and-minutes-2022/12-07-2022/12-07-2022-agenda-and-packet.pdf>

⁷ Staff Report 2301-0799 <https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/agendas-minutes/utilities-advisory-commission/archived-agenda-and-minutes/agendas-and-minutes-2023/07-jul-2023/packet.pdf>

⁸ Staff Report 2307-1743 <https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/reports/city-manager-reports-cmrs/2023/09-18-2023-id-2307-1743-staff-report.pdf>

⁹ Staff Report 2307-1748 <https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/agendas-minutes/utilities-advisory-commission/archived-agenda-and-minutes/agendas-and-minutes-2023/10-oct-2023/10-11-23-id-2307-1748-staff-report.pdf>

¹⁰ Staff Report 2307-1749 <https://www.cityofpaloalto.org/files/assets/public/v/1/agendas-minutes-reports/reports/city-manager-reports-cmrs/2023/10-11-23-id-2307-1748.pdf>

¹¹ See Public Utilities Code sections 9621, 9622; Public Utilities Code section 399.11 also established a new Renewable Portfolio Standard (RPS) to meet 60% of the City’s load from applicable renewable supplies by 2030, which the City has already achieved.

¹² Council adopted the first IRP on December 3, 2018 ([Staff Report 9761](#), [Resolution 9802](#)), and staff submitted the IRP and the four standardized tables to the CEC on April 30, 2019. After reviewing the City’s IRP and associated documents, the CEC approved the submission on August 29, 2019.

April 30, 2019, and updates at least every five years thereafter. Specifically, the City's IRP must demonstrate how the City's utility will:

- Meet GHG emissions reduction targets set by the State's Air Resources Board
- Ensure procurement of at least 60% renewable resources by 2030;
- Minimize impacts to customer bills;
- Ensure system and local reliability, including in the hour of peak net demand, and ensure the procurement of resource adequacy products to meet its peak demand and planning reserve margin;
- Strengthen the diversity, sustainability, and resilience of the bulk transmission, distribution systems and local communities;
- Enhance distribution systems and demand-side energy management;
- Minimize localized air pollutants and other greenhouse gas emissions with early priority to disadvantaged communities; and
- Address the following procurement topics:
 - Energy efficiency and demand resources that are cost effective, reliable and feasible;
 - Energy storage;
 - Transportation electrification;
 - A diversified procurement portfolio of short-term electricity, long-term electricity, and demand response products; and
 - Resource adequacy capacity.

The IRP report presented herein satisfies all of these requirements. It is worthy to note, Palo Alto has already exceeded the state's 2030 goals under SB 100 of sourcing 60% of electricity supplies from renewable resource and reducing greenhouse gas emissions by 40%—which were the primary drivers of the IRP requirement in the first place. It should be noted that the primary purpose of the IRP report is to demonstrate that Palo Alto is on track to meet and exceed the state's long-term climate objectives, and it does not reflect how far the City actually intends to go in order to meet its more aggressive Sustainability and Climate Action Plan (S/CAP) goals.

In addition to addressing the above topics in its IRP, the City is required to submit the following four Standardized Tables to the CEC along with the IRP:

- Capacity Resource Accounting Table (CRAT): Annual peak capacity demand in each year and the contribution of each energy resource in the portfolio to meet that demand.
- Energy Balance Table (EBT): Annual total energy demand and annual estimates for energy supply from various resources.
- RPS Procurement Table (RPT): A detailed summary of a resource plan to meet the RPS requirements.
- GHG Emissions Accounting Table (GEAT): Annual GHG emissions associated with each resource in the portfolio to demonstrate compliance with the GHG emissions reduction targets established by the California Air Resources Board (CARB).

The CEC has yet to release updated versions of these tables. When they become available staff will fill them in with the City's latest portfolio projections and submit them.

Finally, the City is also required to submit to the CEC additional supplementary information along with the IRP, including the current version of the City's RPS Procurement Plan. The City last updated this document in 2020 to reflect the changes brought about by SB 100, and it does not require any further updates at this time. The current version of this document is included as an appendix to the IRP¹³.

ANALYSIS

At the July 2023 UAC meeting, staff presented the Commission with an overview of the IRP, along with a preview of the portfolio modeling results it had completed at the time with help from a consultant (Ascend Analytics). The remainder of this section will cover additional information that this portfolio modeling effort has yielded, included a look at how the portfolio fares under various future hydrological and market price scenarios.

Capacity Expansion Modeling Results

For IRP portfolio development, staff relied on PowerSIMM, an industry-leading market simulation, capacity expansion, and production cost model developed by Ascend Analytics. PowerSIMM captures and quantifies elements of risk through the simulation of meaningful uncertainty with weather as a fundamental driver. After many modeling iterations were performed to ensure the robustness of the results, staff and Ascend ultimately arrived at a Recommended Portfolio that is summarized in the following figures. Figure 1 displays the volumes of new resources that the model selects (in terms of their nameplate capacity) in each year of the IRP planning period. Although the model selects new solar capacity starting in 2030, and battery energy storage systems (BESSs) starting in 2041, the actual resources that the City will contract with to meet its planning objectives will depend heavily on the responses received in future RFPs. Changing market conditions, the specific characteristics and quality of individual offers, and changing regulatory requirements all add uncertainty to the selection of future resources.

¹³ Electric IRP <https://www.cityofpaloalto.org/files/assets/public/v/2/agendas-minutes-reports/reports/city-manager-reports-cmrs/attachments/2023-irp-report.pdf>

Figure 1: Nameplate Capacity of New Resource Additions for the Recommended Portfolio

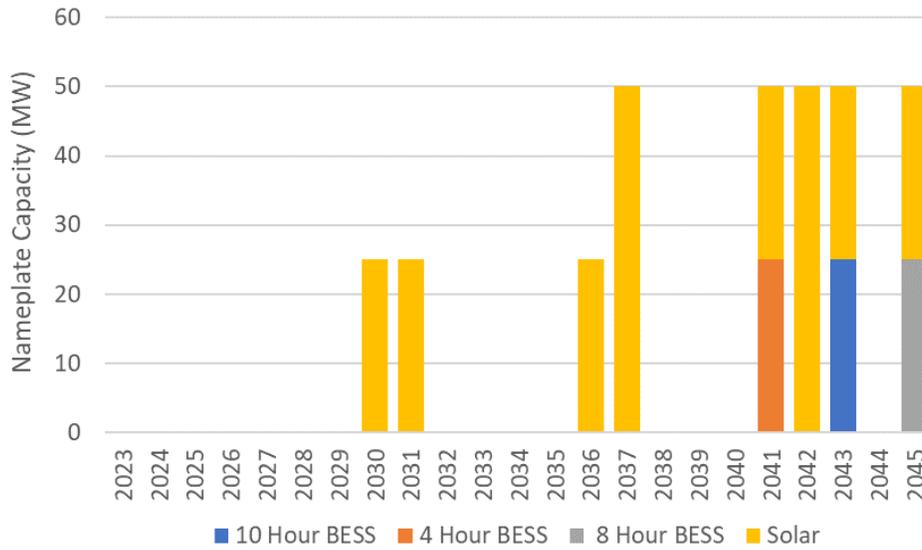
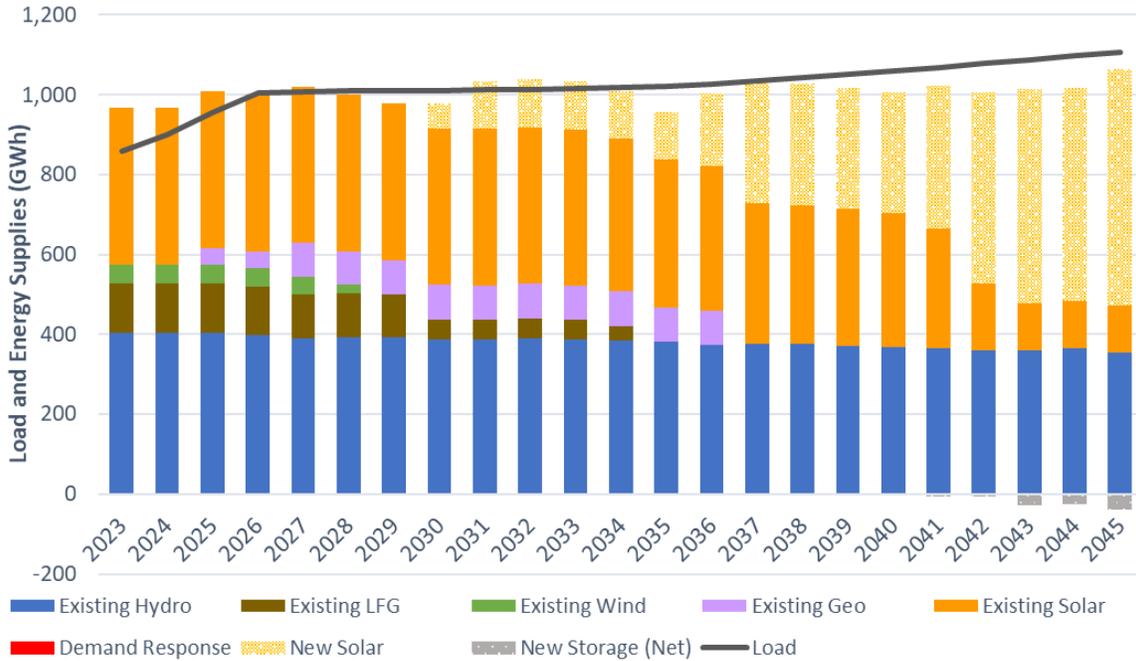


Figure 2 below shows the City’s projected load and energy supplies by year under the Recommended Plan. The small deficit positions depicted in a few years in this figure would be covered using short-term market purchases of energy bundled with PCC 3 RECs¹⁴. Overall, the Recommended Plan results in a portfolio that would be 98% hedged over the IRP planning period.

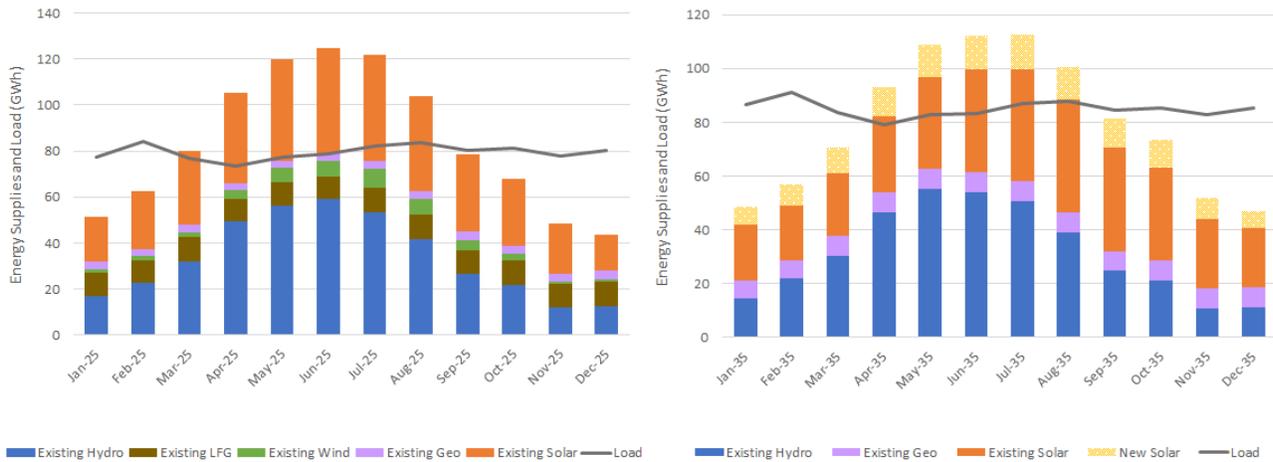
¹⁴ Portfolio Content Category 3 (PCC 3) Renewable Energy Credits (RECs) are California RPS-eligible RECs that represent the environmental attributes of electricity generated from renewable energy sources, but which are transferred independently from the underlying physical electricity.

Figure 2: Projected Load and Energy Supply Balance for under the Recommended Plan



On an intra-year basis, the Recommended Plan would yield significant energy surpluses in the spring and summer months, followed by significant energy deficits in the fall and winter months as shown in Figure 3 below. This pattern, and the resulting market exposure that it would entail, will be another consideration in the process of selecting new resources to add to the City’s supply portfolio which could lead to a more diverse mix of new resource selections than is shown here in the Recommended Plan.

Figure 3: Monthly Load and Energy Supplies in 2025 & 2035 under the Recommended Plan



As Figure 4 below illustrates, the Recommended Plan would ensure that Palo Alto exceeds the state’s annual RPS procurement targets in all but one year (2035) of the IRP planning period.

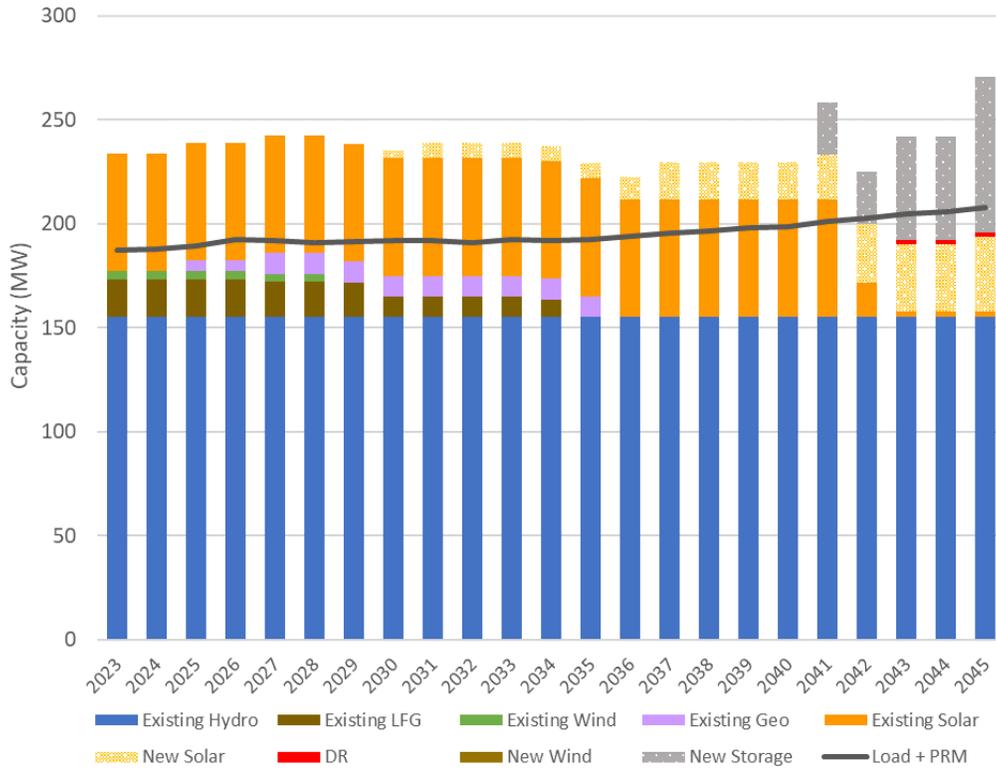
However, because RPS compliance is evaluated based on aggregate procurement over three-year compliance periods after 2030, the City would still achieve full compliance with its RPS requirements under the Recommended Plan. (Based on historical performance, CPAU intends to meet or exceed its annual RPS procurement target in every year.)

Figure 4: SB 100 RPS Requirements and RPS Level under the Recommended Plan



As Figure 1 indicated, the capacity expansion model adds a significant amount of battery energy storage systems beginning in the 2040s—25 MW each of 4-hour, 8-hour, and 10-hour BESSs. According to Ascend, the model selected these resources primarily to ensure the Recommended Plan would satisfy Palo Alto’s system capacity needs during this period (when almost all of the City’s existing renewable energy PPAs have expired). Figure 5 illustrates how these BESS additions—along with a small volume of demand response capacity—ensure that Palo Alto can easily satisfy its system capacity needs throughout the planning period without having to rely on short-term RA purchases.

Figure 5: Projected System Capacity Requirements and Supplies for the Recommended Plan



Scenario Analysis

To try to understand the magnitude of the uncertainty around these modeling results, staff and Ascend ran the model under several different future scenarios, and then used its production cost model function to evaluate the overall cost and cost uncertainty of the supply portfolio selected in each case. The four different scenarios that were evaluated can be summarized as follows:

1. **Base Case** – Expected hydro output and expected market prices
2. **Reduced Hydro Output** – Hydro energy output is reduced by 30% and capacity is reduced by 60%, while hydro costs increase by 25%
3. **Dry Year, High Prices** – Simulating an extended drought, hydro energy output is reduced by 25%, while market prices are high
4. **Wet Year, Low Prices** – Based on historical conditions during wet years, hydro energy output is increased by 50%, while market prices are low

Interestingly, for the dry year and wet year scenarios the model selected the same new capacity additions as in the base case (see Figure 1). Despite Palo Alto’s heavy concentration of large hydro resources in its existing portfolio, these long-term changes in hydrological conditions were not enough to cause the model to select a different volume or type of resources in the portfolio. Instead, the model indicates that the City should simply buy more or sell more energy and capacity in the short-term market to balance its energy and capacity needs in these situations. (While the Recommended Plan portfolio is 98% hedged on average over the IRP planning period,

the Dry Year, High Prices scenario would yield a portfolio that is 87% hedged, and the portfolio would be 121% hedged in the Wet Year, Low Prices scenario.)

In the Reduced Hydro Output case, however, the model made significantly different selections for the City’s supply portfolio, as summarized in the figures below.

Figure 6: Nameplate Capacity of New Resource Additions in Reduced Hydro Output Scenario

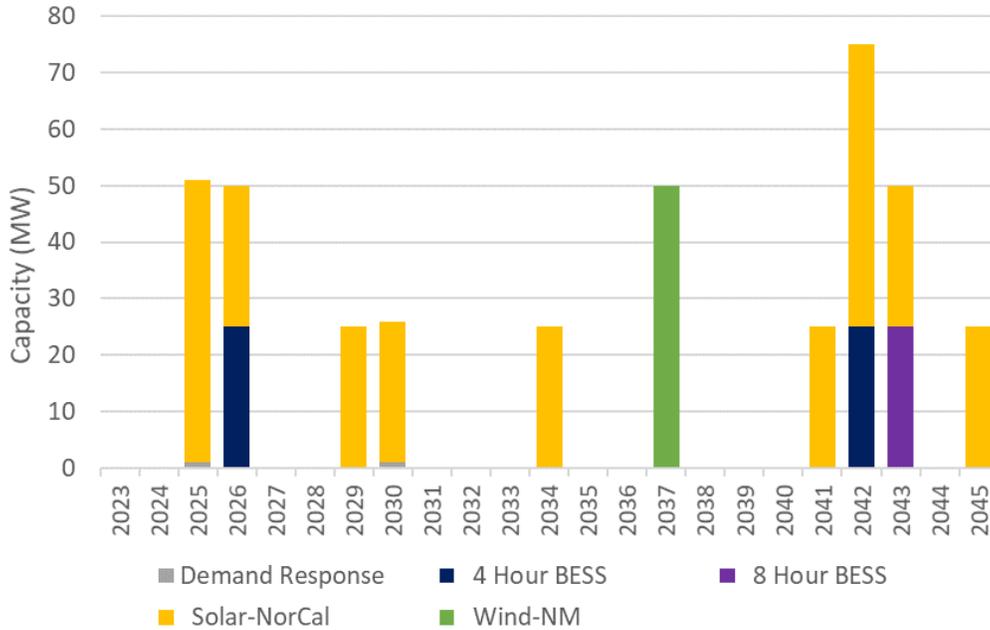


Figure 7: Projected Load and Energy Supply Balance in the Reduced Hydro Output Scenario

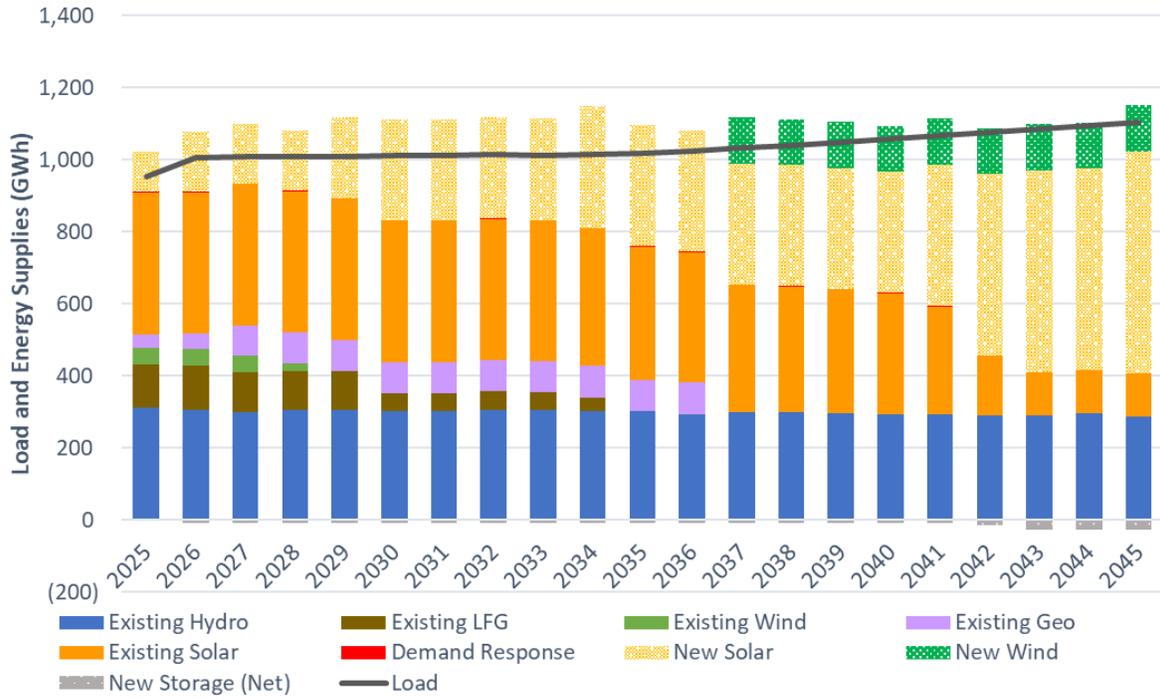
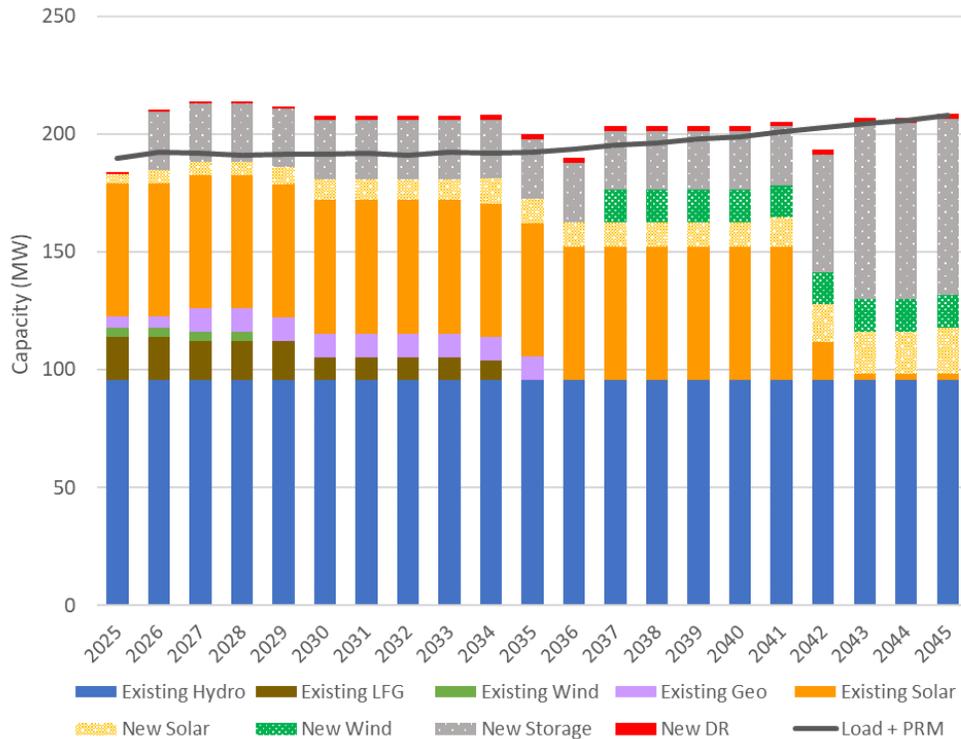


Figure 8: System Capacity Requirements and Supplies in Reduced Hydro Output Scenario



Portfolio Cost Analysis

Financial metrics for the four scenarios described above are displayed in Table below, including each scenario's average supply cost, market price, mark-to-market (MTM)¹⁵, and risk premium¹⁶. As expected, this information indicates that the total portfolio in the Reduced Hydro Output scenario is significantly more costly than the Base Case portfolio. But interestingly, the modeling indicates that the portfolio becomes significantly more valuable under both the Dry Year, High Prices scenario, as well as the Wet Year, Low Prices scenario, compared to the Base Case scenario.

Table 2: Financial Performance Summary of the Four Scenarios Modeled

	Base Case	Reduced Hydro Output	Dry Year, High Prices	Wet Year, Low Prices
Average Supply Cost (\$/MWh)	\$63.58	\$66.27	\$83.05	\$40.76
Average Market Price (\$/MWh)	\$64.17	\$64.17	\$88.05	\$45.52
Total MTM (\$/MWh)	\$0.65	(\$3.34)	\$4.09	\$4.62
Average Annual MTM (\$M)	\$0.47	(\$2.00)	\$5.31	\$4.70
Average Annual Risk Premium (\$M)	\$6.43	\$3.27	\$19.91	\$4.33

The Risk Premium results indicate that the portfolio's cost uncertainty (or value at risk) related to high market prices/dry hydro conditions is far greater than for low market prices/low hydro conditions. For this reason, CPAU tends to hedge the supply portfolio based on the assumption of slightly drier than average conditions, and maintains significant hydroelectric reserves.

NEXT STEPS

Under state law, final approval of the IRP report is required by January 1, 2024, and the City must submit it to the CEC by April 30, 2024.

As noted in the IRP report, the City faces a number of significant decisions in the coming years, including whether to reduce its share of (or exit) the Western contract and what to do with its share of the California-Oregon Transmission Project when the layoff of that resource ends in early 2024. In addition, the City's load is expected to increase significantly in the coming years, and the

¹⁵ Mark-to-market is a risk assessment tool which measures the current estimated value of a portfolio relative to its original contracted price; a positive value indicates an increase in the value of the purchase, which would be realized only if the transaction was liquidated. It also represents the City's credit exposure with the supplier. Note that the MTM values presented in **Table** are based on the total cost of each supply resource, but only account for the energy value (as measured by the resource's Locational Marginal Price). The RA capacity value and REC value associated with each resource's output are not considered in this calculation, thus it is not an accurate representation of the true value of each portfolio; nonetheless, the MTM differences between the four scenarios are reflective of the differences in their values.

¹⁶ The Risk Premium metric represents the magnitude of a given portfolio's financial exposure to market price volatility, variation in generation and load, and changes in weather conditions. The risk premium, which is calculated in a manner similar to an insurance premium, is the probability-weighted average of costs between the median and 95th percentile of costs in all simulations. A smaller Risk Premium value indicates a greater level of certainty around the cost estimates presented for the given portfolio or scenario.

City will need to contract for new resources to meet this increased demand. As staff implements this IRP, they will provide the UAC, the Finance Committee, and the City Council with updates on the progress, successes, and recommendations for addressing any new challenges they encounter.

FISCAL/RESOURCE IMPACT

Implementation the IRP in the coming years will largely be accomplished with existing staffing resources, along with assistance from the Northern California Power Agency (NCPA). However, the City may also need some external consulting and legal resources to assist with some of these efforts. The cost of such external resources may amount to \$100,000 to \$200,000 (total) over the next few years.

Though the approval of the IRP by itself does not have direct impact on portfolio-related costs, the different initiatives that will be undertaken in the coming years will greatly influence the electric supply costs in the coming decades. Staff will ensure that resource and funding needs in future years are communicated through the annual budget process with appropriation of funds subject to Council approval.

STAKEHOLDER ENGAGEMENT

Staff presented the 2023 IRP report and associated documents to the UAC at its October 11, 2023 meeting. The UAC questioned the volume of new solar generation that is included in the Recommended Plan, and asked staff about what other resources were evaluated in the portfolio modeling effort. Staff indicated that they included a wide range of resources in the modeling work (e.g., geothermal, out-of-state wind, offshore wind, and small modular nuclear reactors), and that the model is very sensitive to the cost assumptions used, and selected additional solar on that basis. Staff also reiterated that when the City initiates new resource procurement efforts, staff will thoroughly evaluate all types of resources, and that its ultimate recommendation would be based on market conditions and the City's resource needs at the time of procurement.

The UAC also asked whether adding more solar to the portfolio would exacerbate the City's hourly and seasonal imbalance between its load and its resources, and expressed interest in staff investigating a portfolio with hourly matching of resources and load. Staff noted that its existing portfolio includes a large amount of flexible generation resources (i.e., large hydro) which could be used to match the City's resource supplies with its load, but that the current practice is to instead optimize these resources based on market prices, because this generates the most financial value for the City and also yields the greatest environmental benefits for the grid as a whole. Staff also indicated that they are in the process of analyzing the costs and risks associated with pursuing a portfolio with 24x7 matching of supply resources and load. The UAC ultimately voted (5-1) to recommended approval of the IRP report at this meeting.

Staff also presented the 2023 IRP report and associated documents to the Finance Committee at their November 7, 2023 meeting. The Committee expressed interest in the significant amount of additional load from data centers and building and transportation electrification that is projected to come online in the coming years, and the impacts that this new load will have on the City's

supply procurement needs, retail rates, and General Fund. The Committee also commented on general renewable energy market trends and the prospect that technological innovation and market adoption rates may drive market prices down more than the IRP modeling assumed.

The Committee also expressed interest in the idea that if the City were to utilize its hydroelectric resources to more closely match the City's resource supplies with its load on an hourly basis, this would result in the City receiving significantly less revenue from these resources while also increasing total greenhouse gas emissions across the state. Finally, the Committee recommended that staff emphasize in the final report to the City Council that the primary purpose of the IRP report is to satisfy state regulatory requirements and demonstrate that Palo Alto is on track to meet and exceed the state's long-term climate objectives, and it does not reflect how far the City actually intends to go in order to meet its more aggressive S/CAP goals. Staff and the Committee also noted that all future resource decisions will be accompanied by additional analysis and review by the UAC, Finance Committee, and City Council. The Finance Committee voted unanimously (3-0) to recommend approval of the IRP report at this meeting.

ENVIRONMENTAL REVIEW

The Council's review and approval of the 2023 IRP report does not meet the definition of a project under Public Resources Code 21065 and therefore California Environmental Quality Act (CEQA) review is not required.

ATTACHMENTS

Attachment A: Resolution Approving the 2023 Integrated Resource Plan

Attachment B: Integrated Resource Plan Objective and Strategies

APPROVED BY:

Dean Batchelor, Director of Utilities

Staff: James Stack, PhD, Sr. Resource Planner

* NOT YET APPROVED *

Resolution No. _____

Resolution of the Council of the City of Palo Alto Approving the 2023
Electric Integrated Resource Plan (IRP)

R E C I T A L S

A. Senate Bill 350 was adopted in 2015, establishing a requirement that all publicly owned utilities (POUs) with an average load greater than 700 GWh (in the 2013-16 period) must adopt Integrated Resource Plans (IRP) by January 1, 2019, submit them to the California Energy Commission (CEC), and update them at least once every five years thereafter (Public Utilities Code Sec. 9621(b)).

B. Based on historical data, the City of Palo Alto is one of the California POUs that are required to file an IRP.

C. The CEC is required to review POU IRPs for consistency with Public Utilities Code 9621 and recommend corrections to deficiencies in the plans, according to the Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines (POU IRP Guidelines) most recently adopted by the CEC in August 2018.

D. The POU IRP Guidelines require POUs to submit certain supporting information along with the IRP, including a set of four standardized tables and a Renewable Portfolio Standard (RPS) Procurement Plan.

E. The City of Palo Alto approved the 2018 Electric IRP and related documents on December 3, 2018 (Resolution 9802) and staff submitted them to the CEC on April 30, 2019.

F. The City of Palo Alto first adopted an RPS Procurement Plan on December 12, 2011 (Resolution 9215) and last updated it on December 7, 2020 (Resolution 9929).

The Council of the City of Palo Alto does hereby RESOLVE as follows:

SECTION 1. The Council hereby approves the 2023 Electric Integrated Resource Plan (Attachment B).

SECTION 2. The Council hereby approves the four standardized tables that accompany the 2023 IRP (Appendix C to Attachment B).

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* NOT YET APPROVED *

SECTION 3. The Council finds that the adoption of this resolution approving the 2023 IRP and related documents is not a project subject to California Environmental Quality Act (CEQA) review because adoption of this resolution is an administrative government activity that will not result in any direct or indirect physical change to the environment as a result (CEQA Guidelines section 15378(b)(5)).

INTRODUCED AND PASSED:

AYES:

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

City Clerk

Mayor

APPROVED AS TO FORM:

APPROVED:

Assistant City Attorney

City Manager

Director of Utilities

Director of Administrative Services

Integrated Resource Plan (IRP) Objective and Strategies

IRP Objective

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

IRP 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 IRP 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 achieving other Council-adopted sustainability, rate, and financial objectives.
5. **Partner with External Agencies to Implement Optimization Opportunities:** Actively engage and partner with external agencies to maximize resource value and optimize operations.
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.
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.