



PASADENA WATER AND POWER

MEMORANDUM

July 13, 2021

To: Environmental Advisory Commission

From: Gurcharan S. Bawa 
General Manager

Subject: 2021 Update to the Power Integrated Resources Plan (“IRP”)

This item is for information only.

Background

For decades, Pasadena Water and Power (“PWP”) has developed Power IRPs with three fundamental goals in mind:

1. Maintain a reliable power supply portfolio to meet PWP’s customers’ needs;
2. Meet or exceed sustainability goals and mandates; and,
3. Minimize electric rate impacts and volatility.

On December 10, 2018, the City Council adopted the 2018 Power Integrated Resource Plan (“2018 IRP”). It included specific objectives and strategies such as incorporating cost-effective energy efficiency and solar programs, renewable resource procurement, and other options for meeting Green House Gas (“GHG”) reduction targets and Renewable Portfolio Standard (“RPS”) mandates.

PWP has now commenced work on the 2021 Power Integrated Resource Plan Update (“IRP Update”) to reassess projected costs and preferred resources to meet the goals and objectives of the 2018 IRP with updated information and assumptions. This IRP Update is not mandated by the California Energy Commission (“CEC”) and is for Pasadena’s information only.

The purpose of the IRP Update is to prepare a new forecast of PWP’s long term optimized portfolio of energy supply resources, including energy efficiency and demand response, in order to meet PWP’s load (electricity consumption) requirements through 2050.

PWP plans to conduct a more complete stakeholder-driven IRP process commencing in 2022, which will be completed by the end of 2023 to meet the statutory five-year review requirement in Senate Bill 350.

Progress Since the 2018 IRP

PWP has made good progress implementing the recommendations in the 2018 IRP, including procurement of additional renewable resources, opting out of the IPP gas

repowering project, local power plant repair projects to enhance power supply and local grid reliability, and meeting energy efficiency goals. The combined result was a 56% reduction in GHG emissions versus 1990 levels in 2020.

2021 IRP Update Process and Best Practices

The IRP Update will meet policy objectives and strategies set forth in the adopted 2018 IRP using updated assumptions about key cost drivers and constraints as well as compliance with new regulatory guidance from the CEC and requirements associated with operating as part of the CAISO.

The planning horizon will be extended by 10 years to 2050 and modeling updates will incorporate changes in costs, technologies and regulations since 2018, including continuing reductions in solar/storage costs, new capacity planning requirements driven by California's shift away from fossil fuels and toward renewables and storage, and expectations regarding a shift in the transportation fleet away from fossil fuels. Forecasts of the City's future energy portfolio to 2050 will be formed by this new information from sources within the industry. Other than timing of renewable resource procurement and the specific mix of recommended resources and storage, no significant changes in direction from the 2018 IRP are expected.

Energy Efficiency and Demand Response

The IRP Update will incorporate the latest ten-year energy efficiency goals adopted by the City Council on May 11, 2021. In addition, future demand-response programs that may reduce the amount of physical resource capacity needed to meet PWP's net peak electric demand will be included in the "supply stack" of possible resource options.

Building and Vehicle Electrification

The delivery of electricity to retail consumers in the City will increase as buildings replace natural-gas heating and processes with electric alternatives and the transportation sector converts from fossil fuels to electric vehicles ("EVs"). PWP will review and update the forecasts of additional retail electric demand as a result of electrification EV charging in the City, and incorporate the updated load forecast into the resource planning model.

Battery/Storage Forecast

Since 2018, both installed and near-term expected amounts of energy storage in California have increased as utilities integrate new solar plants combined with on-site storage to manage the intermittency of the solar output. Storage prices are expected to continue to fall over the planning horizon, and the 2021 Update will incorporate the most recent data available from industry sources on expected costs and performance of utility scale storage. Novel storage technologies are on the horizon, and in some cases planned for construction in California, and the next full-scale IRP will incorporate the best available information on these emerging technologies.

Tentative Schedule for IRP Update

The IRP Update will be completed by late 2021, as summarized below:

Meeting	Date	Details
MSC/EAC	7/13/21	Provide update & scope for the 2021 IRP Update
EAC	9/14/21	Share Initial Draft report to EAC
MSC	10/12/21	Draft report with comments from EAC to MSC
MSC	11/16/21	Final report to MSC
City Council	12/7/21	Final Report 2021 IRP Update