

Agenda Report

December 10, 2018

TO: Honorable Mayor and City Council

THROUGH: Municipal Services Committee (November 27, 2018)

FROM: Water and Power Department

**SUBJECT: ADOPT AND APPROVE PASADENA WATER AND POWER 2018
POWER INTEGRATED RESOURCE PLAN, RENEWABLE PORTFOLIO
STANDARD PROCUREMENT PLAN AND RENEWABLE PORTFOLIO
STANDARD ENFORCEMENT PROGRAM**

RECOMMENDATION:

It is recommended that the City Council:

1. Find that the proposed actions are categorically exempt from the California Environmental Quality Act ("CEQA") pursuant to CEQA Guidelines sections 15262 and 15271;
2. Approve and adopt the 2018 Power Integrated Resource Plan ("IRP") (Attachment 1); and
3. Approve and adopt the revised Renewable Portfolio Standard ("RPS") Procurement Plan (Attachment 2) and RPS Enforcement Program (Attachment 3) as amended to be consistent with the recommended 2018 Power IRP.

ENVIRONMENTAL ADVISORY COMMISSION RECOMMENDATION:

The Environmental Advisory Commission recommended that the City Council approve the staff recommendations at its November 13, 2018 meeting.

MUNICIPAL SERVICES COMMITTEE RECOMMENDATION:

The Municipal Services Committee recommended that the City Council approve these recommendations at its November 27, 2018 meeting, with one member abstaining, provided that Council consideration was deferred by one week to allow additional time for Councilmembers to review and consider the IRP report and supporting documents.

EXECUTIVE SUMMARY:

The Pasadena Water and Power (“PWP”) 2018 Power IRP is Pasadena’s long-term power resource plan, with the objective of finding a portfolio of power supply resources that provide a sustainable balance of system reliability, environmental stewardship, and competitive and stable rates. This Power IRP also complies with the requirements of Senate Bill 350 (“SB 350”), which mandates the development of an IRP by January 1, 2019. Historically, PWP has updated its Power IRP every 3 to 5 years to continually optimize its portfolio of power resources, reflective of current laws, regulations, market conditions and community’s preferences.

PWP consistently encourages and values public participation in developing IRPs with a process that includes input from multiple sources, including a Stakeholder Technical Advisory Group (“STAG”), online survey, community meetings, and other forums. The IRP and community outreach efforts were aggressively advertised in print, social media, and was predominately featured on PWP’s website.

Unlike past IPRs, the 2018 Power IRP is mandated by state law. SB350 requires California utilities such as PWP to develop an IRP that meets specific compliance requirements, including, but not limited to, greenhouse gas (“GHG”) emissions reduction targets and compliance with the SB 350 RPS. The 2018 Power IRP must be adopted by the City Council before January 1, 2019 and submitted to the California Energy Commission (“CEC”) by April 30, 2019. PWP plans to submit all of the filing requirements to the CEC, as soon as possible, after City Council adoption. SB 350 further mandates that a process be established for updating the Power IRP at least once every five years. The 2018 Power IRP also includes analysis of portfolios (combination of resources) and scenarios (set of constraints) designed to comply with SB 100, which becomes law in January 2019.

The recommendations of the 2018 Power IRP include:

- No new long-term commitments for fossil fueled resources for energy needs;
 - A key determination was that the natural-gas fueled Intermountain Power Plant (“IPP”) Renewal Project is not cost effective and does not comply with the SB 100 of a carbon-free resource mix by 2045. The IPP Renewal Project contract duration would be 2027 to 2077.
 - On October 29, 2018, the City Council ratified City Manager’s decision for PWP to terminate IPP Renewal Power Sales Contract with the Intermountain Power Agency (“IPA”).
- Achieve a 60% RPS by 2030, using a combination of long- and short-term procurement contracts consistent with SB 350 and SB 100;
- Maintain existing local gas-fired generation to meet peak demands and ensure local reliability through the planning period;
- Achieve at least a 75% GHG reduction from 1990 levels by 2030; and,

- PWP will develop an update to this Power IRP or a new Power IRP within five years, of the adoption of the 2018 Power IRP

Over the 21 year study period from 2019 to 2039, implementation of the recommended power resource portfolio is estimated to result in a 2.7% average rate increase compared to current electric rates. This is a cumulative rate impact, over the study period (a one-time rate increase of 2.7% would allow us to cover the cost for the preferred scenario). Rates are expected to increase further due to increased costs to maintain customer and distribution system infrastructure, regional transmission costs, and inflation. These adjustments were not incorporated in this analysis.

As a result of these recommendations, Pasadena will need to adopt the recommended new RPS Procurement Plan and RPS Enforcement Program that are consistent with the recommended strategy. These documents comply with SB 100 and replace the documents that were approved by City Council on January 29, 2018.

BACKGROUND:

PWP has prepared a Power IRP or similar document to guide long-term power resource procurement strategies every three to five years since the early 1990's. Most recently, Power IRPs were developed in 2009, 2012, and 2015.

The 2018 Power IRP conforms to prescriptive requirements of the CEC, as outlined in the October 4, 2018 Publicly Owned Utilities ("POUs") IRP Submissions and Review Guidelines - Revised Second Edition (collectively referred to as the "Power IRP Guidelines"). These Power IRP Guidelines have been updated several times during the Power IRP planning and development process.

COMPLIANCE REQUIREMENTS

SB 350, which was signed into law on October 7, 2015, imposed a number of new requirements for the Power IRP content and process. However, clarification on how to develop the IRP were not provided until 2017. Some of the key requirements include:

- Requires governing boards of utilities with load greater than 700 GWh, such as PWP, adopt an IRP by January 1, 2019;
- Requires an IRP update every five years;
- Requires that utilities achieve a RPS of 50% by 2030 and GHG emissions reductions of at least 40% by 2030;
- Requires that the IRP address a number of specific issues, including energy efficiency and demand response, energy storage options, transportation electrification options, diversifying portfolio options, ensuring resource adequacy, system and local reliability options, while minimizing local air pollutants and other GHG emissions with a priority on disadvantaged communities; and,

- Recommendation to discuss impacts on the transmission and distribution system and methods to enhance distribution and demand side management, all while serving customers with just and reasonable rates.

As mentioned earlier, to implement SB 350, the CEC approved the Power IRP Guidelines on October 4, 2018. This sets the guidelines for how entities can comply with the IRP requirements.

The initial intent of the 2018 Power IRP was to comply with the SB 350 requirements. However, SB 100 was signed into law on September 10, 2018. SB 100 accelerates the RPS requirements to 60% by 2030 and codifies a statewide policy goal to achieve a 100% zero carbon electricity supply for California by 2045. The 2018 Power IRP evaluated a number of SB 100 compliant portfolios and scenarios, and with the passage of SB 100, staff is recommending a portfolio that achieves compliance with the SB 100 RPS requirement (the 2045 zero carbon portfolio objective is beyond the 20-year planning horizon of the 2018 Power IRP).

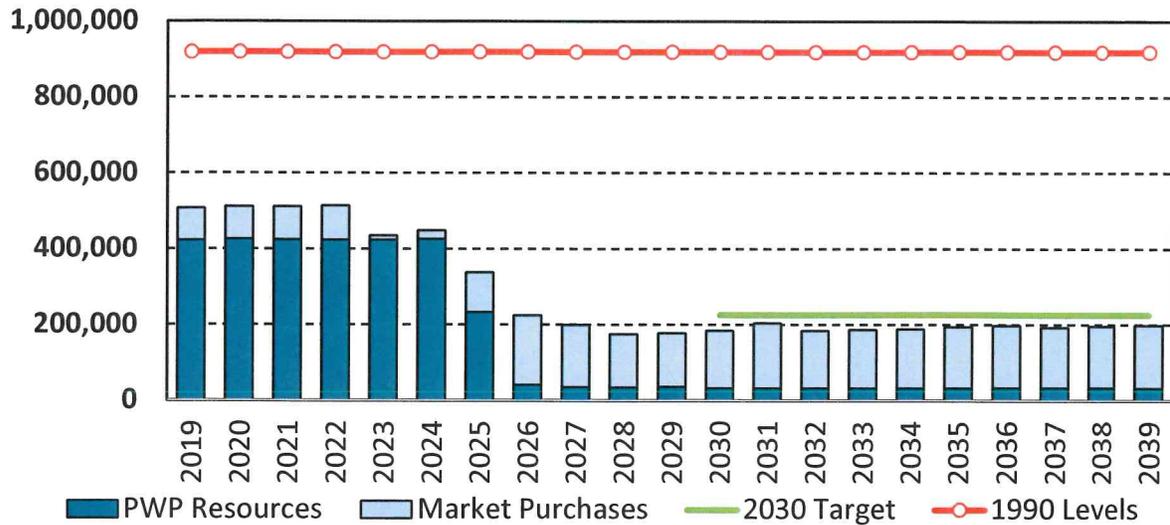
In order to comply with the CEC regulations, full copies of the Attachment 1, 2 and 3 will be available on the City Website in draft form, prior to City Council approval. In addition, a link to the documents will be provided to the CEC in advance of posting the City Council Agenda.

GREENHOUSE GAS EMISSIONS

As shown in Figure 1, the recommended portfolio results in combined GHG emissions from PWP's resources plus market resources needed to fill energy gap that are substantially below historic levels and that meet or exceed the minimum GHG reduction planning targets established by the California Air Resources Board ("CARB"). In July 2018, CARB issued direction on the GHG emissions planning targets for utilities, including POUs such as PWP¹. Although the overall emissions reduction target for California is a 40% reduction from 1990 levels by 2030, CARB took a more aggressive approach and recommended a more significant reduction for the utility sector. Through various workshops and stakeholder meetings, PWP's GHG reduction planning target was set at a minimum of 75% reduction from 1990 levels, or 226,000 metric tons ("MT").

¹ California Air Resources Board (CARB), "Staff Report: Senate Bill 350 Integrated Resource Planning Electricity Sector Greenhouse Gas Planning Targets", July 2018, page 18.

Figure 1: Recommended Portfolio Annual GHG Emissions (MT/year)



PWP's 2018 IRP PROCESS

To prepare the 2018 Power IRP, PWP retained Northwest Economic Research, LLC who partnered with the nationally recognized consulting firm of Pace Global, to advise staff and perform analysis and modeling. The proposed 2018 Power IRP, like past efforts, had a very robust community outreach effort. The 2018 Power IRP was advertised heavily and incorporated input from the community through the STAG and community meetings. The public involvement process included a series of public meetings, a customer/stakeholder survey, website and social media postings, as well as comments from individuals and groups.

COMMUNITY OUTREACH

PWP's Customer Relations Division worked closely with the Power Resources Planning Division, to develop a community outreach approach that would reach the majority of the community. Advertisements on the 2018 Power IRP and a link to the IRP survey were distributed through local newspapers, PWP's website, social media, City Council liaisons, KPAS, the Laemmle theatre, and other venues. PWP also updated its website regularly to highlight the 2018 Power IRP activities.

PWP conducted nine Community and STAG meetings on the 2018 Power IRP, as listed in Attachment 4, and presented informational materials at two Municipal Services Committee meeting, and two Environmental Advisory Commission meeting. Many of the documents (presentations, memos, etc.) from these meetings were posted on the Power IRP website at www.PWPweb.com/IRP.

STAG

The STAG was convened to solicit input from a well-informed and diverse group of representative community members. The STAG includes representatives from key

customer groups, environmental groups, educational institutions, City of Pasadena, and others to review the 2018 Power IRP work and advise PWP.

The STAG members served in an advisory capacity to the PWP Power IRP Team, which consisted of the Power IRP Consultant and PWP Power Resources staff. The STAG provided input on scenario and assumption development as well as concerns from the community. The 2018 Power IRP was developed by including the STAG considerations and a majority of STAG members are supportive of the final recommendations, such as the goal to reduce GHG emissions by at least 75% compared to 1990 levels by 2030, the RPS goal of 60% RPS by 2030 and the recommendation to terminate the IPP Renewal Power Sales Contract. The STAG members supported including the higher Social Cost of Carbon (“SCC”), which includes both the actual cost of emissions credits plus assumed costs for environmental and health effects, for planning purposes. Some members proposed that the SCC be included in the cost of energy bids. After considering regulations governing energy markets and prevailing industry practices, PWP determined it is not advisable to include SCC in energy bids at this time.

The IRP is an evolving planning document to help guide long-term procurement decisions. The IRP will not directly impact daily operations and at this time PWP will continue to incorporate the market cost of GHG emissions in daily operation decisions as opposed to using the SCC. However, the SCC does impact long term procurement decisions and policies—specifically, encouraging PWP to make long term energy procurement decisions that are carbon free.

CUSTOMER SURVEY

PWP conducted a survey which was available on-line and also distributed via hard-copies at the Power IRP community meetings to provide customers and other stakeholders another means of providing input to the Power IRP process. The survey was posted online on May 31, 2018 and removed on August 30, 2018. During this time period, PWP received 296 electronic survey responses.

While the survey process was not scientifically or statistically validated, the responses provide the following insights:

- Responders indicate a willingness to pay an additional 5-10% in their overall bill to achieve greater sustainability and reliability;
- A majority ranked electric reliability and affordable electric rates as top priorities, with minimizing adverse environmental impacts very close behind;
- Over one-third of respondents favor keeping the RPS at 50% by 2030; and,
- About one-third of respondents favor increasing the RPS to at least 75% by 2030

Additional details are provided as part of Attachment 1, the 2018 Power IRP Report.

SCENARIOS

As part of the CEC compliance requirement, the CEC only requires one scenario to be developed—a scenario which complies with SB 350 (the “Base Case” scenario). As summarized in Table I, PWP prepared eight scenarios that were jointly developed by the STAG and PWP Staff. Scenario number 4 was found to be the most preferred and is recommended in this report. Attachment 5 provides more details on each scenario.

Table I – Scenarios Analyzed in the IRP

#	Scenario	Details and Constraints
1	Base Case (“BC”)	<ul style="list-style-type: none"> • Meet SB 350 requirements. Specifically, 50% RPS by 2030 • 280 MW import limitation • All data inputs to the model are in 2017\$
2	Social Cost of Carbon (“SCC”)	<ul style="list-style-type: none"> • Includes all of the constraints from the Base Case Scenario (Scenario #1), with the following additions: • Dispatch penalty on the incremental IPP, Magnolia Power Plant and Glenarm units, priced at the higher of the California Public Utilities Commission (“CPUC”) or Siemens forecast, which increase the fuel price for these units, making them run less (overall), for planning purposes only • Higher carbon price forecast
3	BC+SB 100	<ul style="list-style-type: none"> • Includes some of the constraints from the Base Case (Scenario #1), specifically the 280 MW import limitations and all data inputs to the model are in 2017\$, with the following additions: • Meet SB 100 requirements. Specifically, 60% RPS by 2030
4	SCC+SB 100 (Most preferred and Recommended)	<ul style="list-style-type: none"> • Includes all of the same constraints as the Social Cost of Carbon Scenario (Scenario #2), with the following additions: • Meet SB 100 requirements. Specifically, 60% RPS by 2030
5	SCC+SB 100+ Leave IPP in Utah	<ul style="list-style-type: none"> • Includes all of the same constraints as the SCC+SB 100 Scenario (Scenario #4), with the following additions: • Sell IPP in 2019 and replace with a geothermal resource (which may not be an option with the rules at the state and federal regulatory agencies)
6	Diversification (SCC+SB100)	<ul style="list-style-type: none"> • Includes all of the same constraints as the SCC+SB 100 Scenario (Scenario #4), with the following additions • Force in renewable resources that vary in term, resource type and location (PWP provided details on resources)
7	Diversification +Biogas	<ul style="list-style-type: none"> • Includes all of the same constraints as the Diversification Scenario (Scenario #6), with the following additions: • Force biogas for Magnolia and Glenarm units, to 100% biogas by 2038 (sufficient supply may not be available)
8	Diversification+ Biogas+Leave IPP in Utah	<ul style="list-style-type: none"> • Includes all of the same constraints as the Diversification + Biogas Scenario (Scenario #7), with the following additions: • Sell IPP in 2019 and replace with a geothermal resource

CONCLUSIONS

Based on the 2018 Power IRP analysis, summarized in Attachment 5, staff recommends the City Council adopt an energy portfolio plan that will enable PWP to achieve an impressive 60% RPS by 2030 and at least a 75% reduction in GHG emissions by 2030 as compared to 1990 levels, well ahead of the state-wide target to achieve 40% GHG reduction by 2030. This is achieved in the most economically efficient manner by including a SCC in the planning analysis for determining future resource choices and their utilization to meet electric energy needs. The recommended portfolio strategy (labeled "SCC + SB 100" in the Power IRP Report) meets or exceeds all of PWP's current legal, regulatory, reliability and environmental requirements, provides flexibility to respond to changing conditions and is the second lowest cost portfolio that complies with SB 100. This recommended portfolio is less than 1% higher than the lowest cost option, which complies with SB 100. As a leader in sustainable resource planning, PWP is one of a handful of utilities that has chosen to only consider portfolios and scenarios that meet SB100 in the 2018 IRP process.

Please note that all of the attachments are in draft form and the final CEC submittal may have non-material edits, due to formatting or other constraints. In addition, the workbooks discussed in Attachment 1: 2018 Power IRP, are not included in the supplemental data to this Agenda Report and will be provided separately to the CEC.

CITY COUNCIL POLICY CONSIDERATION:

The 2018 Power IRP will support the City Council's strategic goals for a sustainable economy and to sustain natural environmental resources for the use of future generations, and at the same time, contribute to the reduction of GHG emissions and impacts on climate change.

ENVIRONMENTAL ANALYSIS:

On March 11, 2009, March 5, 2012, and June 22, 2018 the City Council found that the adoption of the 2009, 2012 and 2015 Power 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.

Like the 2009, 2012 and 2015 documents, the 2018 Power IRP is a guidance document, which does not commit the City to undertake any particular project. Furthermore, it does not serve as a legally binding plan with which subsequent activities must be consistent or adhere.

The 2018 Power IRP is drafted, with environmental factors under consideration. One of the primary goals of the 2018 Power IRP is to reduce the environmental impact of the

City's overall energy portfolio, particularly with regard to GHG emissions. Further, any specific construction project undertaken pursuant to the 2018 Power IRP will be subject to full CEQA review at the appropriate time.

FISCAL IMPACT:

Approval and adoption of the 2018 Power IRP will have no immediate fiscal impact because PWP is not planning to procure long term power contract in near future. The 2018 Power IRP recommendations will, however, establish the policy guidance and framework to evaluate power supply resource and program choices that will result in higher future electric energy costs than the lowest-cost solutions that would meet minimum compliance standards.

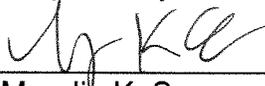
Over the study period, implementation of the recommended power resource portfolio may result in an estimated 2.7% system average rate increase, compared to current rates, while holding all other costs constant. Rates are expected to increase further due to increased costs to maintain customer and distribution system infrastructure, regional transmission costs, and inflation. For an average residential customer, consuming 500KWh per month, this would translate into a \$2.52 per month increase on the electric bill. This increase does not include the impact of inflation or increased costs associated with electric distribution, transmission, and customer service functions.

Respectfully submitted,



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Prepared by:



Mandip K. Samra
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Approved by:



STEVE MERMELL
City Manager

Attachments

- Attachment 1: 2018 Power IRP
- Attachment 2: RPS Renewable Procurement Plan
- Attachment 3: RPS Enforcement Program
- Attachment 4: 2018 Power IRP Community Outreach Efforts
- Attachment 5: 2018 Power IRP Scenario Comparison