

DOCKETED

Docket Number:	16-OIR-01
Project Title:	General Rulemaking Proceeding for Developing Regulations, Guidelines and Policies for Implementing SB 350 and AB 802
TN #:	211069
Document Title:	Minimum Integrated Resource Plan Requirements for Local Publicly-Owned Electric Utilities Pursuant to SB350
Description:	N/A
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Organization:	Pasadena Water & Power
Submitter Role:	Public Agency
Submission Date:	4/14/2016 2:12:47 PM
Docketed Date:	4/14/2016



PASADENA WATER AND POWER

MINIMUM INTEGRATED RESOURCE PLAN REQUIREMENTS
FOR LOCAL PUBLICLY-OWNED ELECTRIC UTILITIES
PURSUANT TO SB350:
The Clean Energy and Pollution Reduction Act of 2015

The local publicly-owned electric utility should address how the IRP satisfies the following requirements, with links or references to the relevant IRP section(s). This checklist may be incorporated as an attachment to the IRP.

IRP CHECKLIST:

GENERAL

- The Integrated Resource Plan (“IRP”) is adopted by the governing board of the local publicly-owned electric utility on or before January 1, 2019.
[See SB 350 SEC. 35. re: Section 9621(b) of the Public Utilities Code]
- The governing board of the utility has established a process for updating the IRP at least once every five years.
[See SB 350 SEC. 35. re: Section 9621(b) of the Public Utilities Code]
- The IRP meets the following goals:
 - Enables the utility to fulfill its obligation to serve its customers at just and reasonable rates.
 - Minimizes impacts on ratepayers' bills.
 - Ensures system and local reliability.
 - Strengthens the diversity, sustainability, and resilience of the bulk transmission and distribution systems, and local communities.
 - Enhances distribution systems and demand-side energy management.
 - Minimizes localized air pollutants and other greenhouse gas emissions, with early priority on disadvantaged communities identified pursuant to Section 39711 of the Health and Safety Code¹.
[See SB 350 SEC. 35. re: Section 9621(b)(3) and Section 454.52.(a)(1)(c) – (h) of the Public Utilities Code]
- The utility has satisfied the notice and public disclosure requirements with respect to any IRP or IRP update it considers.

¹ 39711. (a) The California Environmental Protection Agency shall identify disadvantaged communities for investment opportunities related to this chapter. These communities shall be identified based on geographic, socioeconomic, public health, and environmental hazard criteria, and may include, but are not limited to, either of the following:

(1) Areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation.

(2) Areas with concentrations of people that are of low income, high unemployment, low levels of homeownership, high rent burden, sensitive populations, or low levels of educational attainment.

1. Improvement in energy efficiency of travel.
2. Reduction of health and environmental impacts from air pollution.
3. Reduction of greenhouse gas emissions related to electricity and natural gas production and use.
4. Increased use of alternative fuels.
5. Creating high-quality jobs or other economic benefits, including in disadvantaged communities identified pursuant to Section 39711 of the Health and Safety Code.

[See SB 350 SEC. 31. re: Section 740.8(b) of the Public Utilities Code]

RELIABILITY

- The IRP is a prudent plan for procurement of resources sufficient to provide reliable electric service to utility customers, including:
 - Planning reserve margin,
 - Peak demand, and
 - Operating reserves.

[See SB 350 SEC. 34. re: Section 9620(a) of the Public Utilities Code]

- The IRP meets (at a minimum) the most recent minimum planning reserve and reliability criteria approved by the Board of Trustees of the WSCC/WECC or a successor to the corporation.

[See SB 350 SEC. 34. re: Section 9620(b) of the Public Utilities Code]

- The IRP addresses the applicable resource adequacy requirements.

[See SB 350 SEC. 35. re: Section 9621(c)(1)(E) of the Public Utilities Code]

GREENHOUSE GAS EMISSIONS

- The IRP meets the greenhouse gas emissions reduction targets established by the State Air Resources Board, in coordination with the CPUC and the CEC, for the electricity sector and the utility that reflect the electricity sector's percentage in achieving the economy-wide greenhouse gas emissions reductions of 40 percent from 1990 levels by 2030.

[See SB 350 SEC. 35. re: Section 9621(b)(1) of the Public Utilities Code]

- The governing board of the utility may authorize procurement of resource types that will reduce overall greenhouse gas emissions from the electricity sector, ensure procurement of at least 50 percent eligible renewable energy resources by 2030 consistent with the Public Utilities Code, and meet other goals, but due to the nature of the technology or fuel source may not compete favorably in price against other resources over the time period of the integrated resource plan.

[See SB 350 SEC. 35. re: Section 9621(c)(2)(B) of the Public Utilities Code]

PLANNING AND PROCUREMENT PROCESS

- ❑ The IRP includes a process and criteria for the rank ordering and selection of least-cost and best-fit eligible renewable energy resources to comply with the California Renewables Portfolio Standard Program obligations on a total cost and best-fit basis, taking into account:

[See SB 350 SEC. 24 re: Section 399.30(d)(1) and SEC. 19. re: Section 399.13(a)(4)(A) of the Public Utilities Code]

- ❑ Estimates of indirect costs associated with needed transmission investments.
- ❑ The cost impact of procuring the eligible renewable energy resources on the local publicly-owned electric utility 's electricity portfolio.
- ❑ The viability of the project to construct and reliably operate the eligible renewable energy resource, including the developer's experience, the feasibility of the technology used to generate electricity, and the risk that the facility will not be built, or that construction will be delayed, with the result that electricity will not be supplied as required by the contract.
- ❑ Workforce recruitment, training, and retention efforts, including the employment growth associated with the construction and operation of eligible renewable energy resources and goals for recruitment and training of women, minorities, and disabled veterans.
- ❑ Estimates of the utility expenses resulting from integrating and operating eligible renewable energy resources, including, but not limited to, any additional wholesale energy and capacity costs associated with integrating each eligible renewable resource.
 - ❑ The utility may rely on a methodology approved by the CEC and/or CPUC, or its own governing body, for determining the integration costs.
- ❑ Consideration of any statewide greenhouse gas emissions limit established pursuant to the California Global Warming Solutions Act of 2006 (Division 25.5 (commencing with Section 38500) of the Health and Safety Code).
- ❑ Consideration of capacity and system reliability of the eligible renewable energy resource to ensure grid reliability.
 - ❑ Electricity products may be differentiated by their impacts on the operation of the grid in supplying electricity, as well as meeting the requirements of the Public Utilities Code.

[See SB 350 SEC. 21. re: Section 399.16(a) of the Public Utilities Code]

- ❑ The governing board of utility may authorize “all source” procurement that includes various resource types, including demand-side resources, supply side resources, and resources that may be either demand-side resources or supply side resources, to ensure that the utility procures the optimum resource mix that meets the greenhouse gas emission reduction targets established by the State Air Resources Board, ensures procurement of at least 50 percent eligible

renewable energy resources by 2030, and meets other goals.

[See SB 350 SEC. 35. re: Section 9621(c)(2)(A) of the Public Utilities Code]

- The governing board of the utility shall adopt procurement requirements consistent with the following:
 - The utility may accumulate (beginning January 1, 2011) excess procurement in one compliance period to be applied to any subsequent compliance period.
 - For electricity products in Portfolio Content Category 1, contracts of any duration may count as excess procurement.
 - Electricity products meeting the Portfolio Content Category 2 or 3 requirements shall not be counted as excess procurement.
 - Contracts of any duration for electricity products meeting the Portfolio Content Category 2 or 3 requirements that are credited towards a compliance period shall not be deducted from a retail seller's procurement for purposes of calculating excess procurement.

[See SB 350 SEC. 19. re: Section 399.13(a) (4)(B) of the Public Utilities Code]
 - The utility may enter into a combination of long- and short-term contracts for electricity and associated renewable energy credits.

[See SB 350 SEC. 19. re: Section 399.13(b) of the Public Utilities Code]
 - Beginning January 1, 2021, at least 65 percent of the procurement of the utility that counts toward the renewables portfolio standard requirement of each compliance period shall be from its contracts of 10 years or more in duration or in its ownership or ownership agreements for eligible renewable energy resources.

[See SB 350 SEC. 19. re: Section 399.13(b) of the Public Utilities Code]
- The IRP addresses procurement of a diversified procurement portfolio consisting of both short-term and long-term electricity, electricity- related, and demand response products.

[See SB 350 SEC. 35. re: Section 9621(c)(1)(D) of the Public Utilities Code]

RENEWABLES

- To fulfill unmet long-term generation resource needs, the utility has adopted and implemented a renewable energy resources procurement plan that requires the utility to procure a minimum quantity of electricity products from eligible renewable energy resources, including renewable energy credits, as a specified percentage of total kWh sold to the utility's retail end-use customers, each compliance period, to achieve the targets in Table 1 below.

[See SB 350 SEC. 24. re: Section 399.30(a)(1) of the Public Utilities Code]
- Beginning January 1, 2019, the renewable energy resources procurement plan of the utility is incorporated as part of the broader IRP.

[See SB 350 SEC. 24. re: Section 399.30(a)(2) of the Public Utilities Code]

- The IRP ensures procurement of at least 50 percent eligible renewable energy resources by 2030.
 - [See SB 350 SEC. 35. re: Section 9621(b)(2) of the Public Utilities Code]*
 - This eligible renewable electricity may be generated anywhere in the interconnected grid that includes many states, and areas of both Canada and Mexico. *[See SB 350 SEC. 17. re: Section 399.11(e)(1) of the Public Utilities Code]*
 - Generating resources located outside of California that are able to supply renewable electricity to California end-use customers are treated identically to generating resources located within the state, without discrimination. *[See SB 350 SEC. 17. re: Section 399.11(e)(2) of the Public Utilities Code]*
 - A facility engaged in the combustion of municipal solid waste is not considered an eligible renewable energy resource. *[See SB 350 SEC. 18. re: Section 399.12(e)(2)(a) of the Public Utilities Code]*

- The IRP reflects procurement targets adopted by the governing board for the utility that require the utility to procure a minimum quantity of eligible renewable energy resources for each compliance periods as follows:

TABLE 1

[See SB 350 SEC. 24. re: Section 399.30, SEC. 19. re: Section 399.13(b), and SEC. 20. re: 399.15(b) of the Public Utilities Code]

	Period 2: 1/1/ 2014 to 12/31/2016 inclusive	Period 3: 1/1/2017 to 12/31/2020 inclusive.	Period 4: 1/1/2021 to 12/31/2024 inclusive	Period 6: 1/1/2025 to 12/31/2027 inclusive	Period 6: 1/1/2028 to 12/31/2030 inclusive
Quantity* (% of retail sales)	25%	33%	40%	45%	50%
PCC 1 (% of requirement)	≥65%	≥75%	≥75%	≥75%	≥75%
PCC3 (% of requirement)	≤15%	≤10%	≤10%	≤10%	≤10%
Long-Term (PPA ≥10 yrs) (% of requirement)	N/A	N/A	≥65%	≥65%	≥65%

* The quantities of eligible renewable energy resources to be procured for each compliance period is to reflect **reasonable progress** in each of the intervening years sufficient to ensure the achievement of the target procurement by the end of the compliance period. *[See SB 350 SEC. 24. re: Section 399.30(c)(2) of the Public Utilities Code]*

- The utility is obligated to procure no less than the quantities associated with all intervening years by the end of each compliance period. *[See SB 350 SEC. 20. re: Section 399.15(b)(2)(C) of the Public Utilities Code]*
- The utility is not required to demonstrate a specific quantity of procurement for any individual intervening year. *[See SB 350 SEC. 20. re: Section 399.15(b)(2)(C) of the Public Utilities Code]*

- For Compliance Period 4, the utility may adjust its renewable energy procurement targets to ensure that the procurement of additional electricity from eligible renewable energy resources, in combination with the procurement of

electricity from unavoidable long-term contracts and ownership agreements, does not exceed the total retail sales of the utility during that compliance period.

[See SB 350 SEC. 24. re: Section 399.30(m)(2) of the Public Utilities Code]

- The utility has limited its procurement of eligible renewable energy resources for Compliance Period 4 to no less than an average of 33 percent of its retail sales. *[See SB 350 SEC. 24. re: Section 399.30(m)(2) of the Public Utilities Code]*
- "Unavoidable long-term contracts and ownership agreements" means commitments for electricity from a coal-fired power plant, located outside the state, originally entered into by the utility before June 1, 2010, that is not subsequently modified to result in an extension of the duration of the agreement or result in an increase in total quantities of energy delivered during any compliance period. *[See SB 350 SEC. 24. re: Section 399.30(m)(1)(A) of the Public Utilities Code]*
- The utility has demonstrated in the renewable energy resources procurement plan approved by its governing board that any cancellation or divestment of the commitment would result in significant economic harm to its retail customers that cannot be substantially mitigated through resale, transfer to another entity, early closure of the facility, or other feasible measures. *[See SB 350 SEC. 24. re: Section 399.30(m)(1)(B) of the Public Utilities Code]*
- The CEC will approve any reductions in procurement targets proposed by a local publicly-owned electric utility if it determines that the requirements of this subdivision are satisfied. *[See SB 350 SEC. 24. re: Section 399.30(m)(3) of the Public Utilities Code]*

- In calculating its procurement requirements, the utility may exclude from its total retail sales the kWh generated by an eligible renewable energy resource that is credited to a participating customer pursuant to a voluntary green pricing or shared renewable generation program. Any exclusion is limited to electricity products that do not meet the criteria of Portfolio Content Category 2 or 3. *[See SB 350 SEC. 24. re: Section 399.30(c) (4) of the Public Utilities Code]*

- Any renewable energy credits associated with electricity credited to a participating customer:
 - Are not used for the utility's compliance with SB 350 procurement requirements;
 - Are to be retired on behalf of the participating customer; and
 - Will not be further sold, transferred, or otherwise monetized for any purpose. *[See SB 350 SEC. 24. re: Section 399.30(c) (4) of the Public Utilities Code]*

- To the extent possible for generation that is excluded from retail sales because it is credited to a participating customer pursuant to a voluntary green pricing or shared renewable generation program, the utility will seek to procure those eligible renewable energy resources that are located in reasonable proximity to program participants. *[See SB 350 SEC. 24. re: Section 399.30(c) (4) of the Public Utilities Code]*

- The IRP includes an appropriate minimum margin of procurement above the minimum procurement level necessary to comply with the renewables portfolio standard to mitigate the risk that renewable projects planned or under contract are delayed or canceled.
[See SB 350 SEC. 19. re: Section 399.13(a)(4)(D) of the Public Utilities Code]

- The IRP includes an assessment of annual or multiyear portfolio supplies and demand to determine the optimal mix of eligible renewable energy resources with deliverability characteristics that may include peaking, dispatchable, baseload, firm, and as-available capacity.
[See SB 350 SEC. 19. re: Section 399.13(a)(5)(A) of the Public Utilities Code]

- The governing board of the utility may adopt the following measures:
 - Conditions that allow for delaying timely compliance with the RPS if:
[See SB 350 SEC. 24 re: Section 399.30(d)(2)(A) and SEC. 20. re: Section 399.15(b) of the Public Utilities Code]
 - There is inadequate transmission capacity to allow for sufficient electricity to be delivered from proposed eligible renewable energy resource projects using the current operational protocols of the Independent System Operator, considering:
 - Whether the utility has undertaken, in a timely fashion, reasonable measures under its control and consistent with its obligation under local, state, and federal laws and regulations, to develop and construct new transmission line or upgrades to existing lines intended to transmit electricity generated by eligible renewable energy resources, with the reasonableness determination to consider the utility's expectations for full-cost recovery for the transmission lines and upgrades.
 - Whether the retail seller has taken all reasonable operational measures to maximize cost-effective deliveries of electricity from eligible renewable energy resources in advance of transmission availability.
 - Permitting, interconnection, or other circumstances have delayed procurement of eligible renewable energy resource projects.
 - There is an insufficient supply of eligible renewable energy resources available to the utility.
 - The utility has prudently managed portfolio risks, including relying on a sufficient number of viable projects.
 - The utility sought to develop one of the following:
 - its own eligible renewable energy resources,
 - transmission to interconnect to eligible renewable energy resources, or
 - energy storage used to integrate eligible renewable energy resources.
 - The utility procured an appropriate minimum margin of procurement above the minimum procurement level necessary to comply with

the renewables portfolio standard to compensate for foreseeable delays or insufficient supply.

- The utility has taken reasonable measures, under the control of the utility, to procure cost-effective distributed generation and allowable unbundled renewable energy credits.
- There has been unanticipated curtailment of eligible renewable energy resources, for which replacement did not result in an increase in greenhouse gas emissions.
- There has been an unanticipated increase in retail sales due to transportation electrification, considering:
 - Whether transportation electrification significantly exceeded forecasts in that retail seller's service territory based on the best and most recently available information filed with the State Air Resources Board, the CEC, or other state agency.
 - Whether the retail seller has taken reasonable measures to procure sufficient resources to account for unanticipated increases in retail sales due to transportation electrification.

[See SB 350 SEC. 24. re: Section 399.30(d)(2)(B), and SEC. 399.15(b) of the Public Utilities Code]

- Cost limitations for procurement expenditures for all eligible renewable energy resources used to comply with the renewable portfolio standard.
 - This limitation is set at a level that prevents disproportionate rate impacts.

[See SB 350 SEC. 24. re: Section 399.30(d) (2), and SEC. 399.15(c) of the Public Utilities Code]

- The utility retains discretion over both of the following:
 - The mix of eligible renewable energy resources procured by the utility,
 - Those additional generation resources procured by the utility for purposes of ensuring resource adequacy and reliability.
 - The reasonable costs incurred by the utility for eligible renewable energy resources owned by the utility.

[See SB 350 SEC. 24. re: Section 399.30(n) of the Public Utilities Code]

- The governing board of the utility has adopted a program for the enforcement of the renewable portfolio standard.
 - The program was or will be adopted at a publicly noticed meeting offering all interested parties an opportunity to comment.
 - Not less than 30 days' notice shall be given to the public of any meeting held for purposes of adopting the program.
 - Not less than 10 days' notice shall be given to the public before any meeting is held to make a substantive change to the program.

[See SB 350 SEC. 24. re: Section 399.30(e) of the Public Utilities Code]

- The utility has annually posted notice, in accordance with the Brown Act [Chapter 9 (commencing with Section 54950) of Part 1 of Division 2 of Title 5 of the Government Code], when its governing body has deliberated in public on its

renewable energy resources procurement plan.

[See SB 350 SEC. 24. re: Section 399.30(f) (1) of the Public Utilities Code]

- Contemporaneous with the posting of the notice of a public meeting to consider the renewable energy resources procurement plan, the utility notified the Energy Commission of the date, time, and location of the meeting in order to enable the Energy Commission to post the information on its Internet Web site.
 - This requirement was satisfied if the local publicly owned electric utility provided the uniform resource locator (URL) that links to this information.

[See SB 350 SEC. 24. re: Section 399.30(f) (2) of the Public Utilities Code]

- Upon distribution to its governing body of information related to its renewable energy resources procurement status and future plans, for its consideration at a noticed public meeting, the utility shall make that information available to the public and provided the Energy Commission with an electronic copy of the documents for posting on the Energy Commission's Internet Web site.
 - This requirement was satisfied if the local publicly owned electric utility provided the uniform resource locator (URL) that links to the documents or information regarding other manners of access to the documents.

[See SB 350 SEC. 35. re: Section 9621(c)(1)(a) of the Public Utilities Code]

ENERGY EFFICIENCY AND DEMAND RESPONSE

- The IRP addresses procurement of energy efficiency and demand response resources pursuant to Section 9615 of the Public Utilities Code.

[See SB 350 SEC. 35. re: Section 9621, and SEC. 24. re: Section 399.30(f) (1) of the Public Utilities Code; Section 9615 of the Public Utilities Code]

- The IRP identifies all potentially achievable cost-effective electricity efficiency savings and establishes annual targets for procurement of energy efficiency savings and demand reduction/response for the next 10-year period consistent with the annual targets established by the CEC.
 - The utility's determination of potentially achievable cost-effective electricity efficiency savings is made without regard to previous minimum investments undertaken pursuant to Section 385 of the Public Utilities Code.
 - The utility treats investments made to achieve energy efficiency savings and demand reduction targets as procurement investments.

[See SB 350 SEC. 33. re: Section 9505(b) of the Public Utilities Code]

ENERGY STORAGE

- The IRP addresses procurement of energy storage pursuant to Chapter 7.7 (commencing with Section 2835) of Part 2 of Division 1 of the Public Utilities Code.

[See SB 350 SEC. 35. re: Section 9621(c)(1)(b) of the Public Utilities Code]

- The IRP prudently plans for procurement of energy storage systems that are adequate to meet the following requirements:
 - On or before March 1, 2012, the governing board of the utility initiated a process to determine appropriate targets, if any, for the utility to procure viable and cost-effective energy storage systems to be achieved by December 31, 2016, and December 31, 2020.
 - As part of this proceeding, the governing board may have considered a variety of possible policies to encourage the cost-effective deployment of energy storage systems, including refinement of existing procurement methods to properly value energy storage systems.
 - The governing board adopted the procurement targets, if determined to be appropriate, by October 1, 2014.
 - The governing board will reevaluate the determinations made pursuant to this provision not less than once every three years.
 - An energy storage system may be used to meet the resource adequacy requirements established by a utility (pursuant to Section 9620 of the Public Utilities Code) if it meets applicable standards.
 - All procurement of energy storage systems by the utility shall be cost effective.
[See SB 350 SEC. 34. re: Section 9620(c), and Section 2836 of the Public Utilities Code]

TRANSPORTATION ELECTRIFICATION

- The IRP addresses how the utility will procure and/or facilitate increased investments in transportation electrification.
[See SB 350 SEC. 3. re: 44258.5 (b) of the Health and Safety Code, and SEC. 35. re: Section 9621(c)(1)(C) of the Public Utilities Code]