In the matter of:	)	Docket No. 18-IRP-01
	)	
Integrated Resource Plans (Publicly Owned Utilities)	)	Notice of Business Meeting
	)	RE: Adoption of *Publicly Owned*
	)	*Utility Integrated Resource Plan*
_____	)	*Submission and Review Guidelines*

Notice to Consider Adoption
Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines, Second Edition
Publication No. CEC 200-2018-004-SD
Docket No. 18-IRP-01

The California Energy Commission will consider adoption of the revised *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines* at its regularly-scheduled business meeting on:

Wednesday, August 1, 2018
10:00 A.M.
CALIFORNIA ENERGY COMMISSION
1516 Ninth Street
First Floor, Art Rosenfeld Hearing Room
Sacramento, California
(Wheelchair Accessible)

Remote Access Available by Computer or Phone via WebEx™
(Instructions below)

More information about the business meeting, including the full agenda and instructions for participation will be made available on the Energy Commission's website at http://www.energy.ca.gov/business_meetings/.

The *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines* (Guidelines) are prepared to support the California Energy Commission's review of publicly owned utility (POU) integrated resource plans (IRP). The Guidelines provide instructions and guidance to POUs for submitting IRPs to the Energy Commission. The purpose of the Guidelines is to govern the submission of information, data, and reports needed to support the Energy Commission's review of POU IRPs.

Senate Bill 350 (de León, Chapter 547, Statutes of 2015) requires the Energy Commission to produce guidelines for and to review IRPs from POUs. Those POUs with an average load greater than 700 Gigawatt-hours (in the 2013-16 period) are required to adopt IRPs by January 1, 2019, submit them to the Energy Commission, and update them at least once every five years thereafter. Based on historical data, 16 POUs are expected to be required to file IRPs.

The Guidelines were first adopted last year at the August 7, 2017, business meeting. These Guidelines are being amended to include requirements from Senate Bill 338 (Skinner, Chapter 389, Statutes of 2017). SB 338 requires the governing board of local POUs to consider the role of existing renewable generation, grid operational efficiencies, energy storage, energy efficiency, and distributed energy resources in meeting energy and reliability needs of each utility during the hours of net-peak demand.

The Energy Commission made proposed revisions to the Guidelines to incorporate the requirements of SB 338, and held a public webinar in May 2018 to gain stakeholder input. Feedback received through the webinar and written comments were used to revise the Guidelines.

Public Comment

Oral comments. Staff will accept oral comments during the business meeting. Comments may be limited to three minutes per speaker. Any comments may become part of the public record in this proceeding.

Written comments. Written comments should be submitted to the Dockets Unit by **5:00 p.m. on July 27, 2018**. Written comments will be also accepted at the business meeting, however, the Energy Commission may not have time to review them before the conclusion of the meeting.

The Energy Commission is using an electronic commenting system to accept comments. Please follow the instructions below to provide written comments.

1. Go to the Energy Commission's website: http://www.energy.ca.gov/e-filing/.
2. Click "Comment on a Proceeding" in the Additional Information box.
3. Type "18-IRP-01" into the Select a Proceeding field.
4. Click "Continue" to Add a Comment. Commenters are required to input their full name, email address, and comment title.
5. Comment title should be "Jane Doe or Company Name Comment Publicly Owned Utility Integrated Resource Plan Guidelines."
6. Type comments into the "Comment Text" field or upload a document with comments. Comments should be in a downloadable, searchable format such as Microsoft® Word (.doc or .docx) or Adobe® Acrobat® (.pdf).
7. Enter the CAPTCHA that is used to prevent spamming on the website. Then click on "Agree and Submit your Comments."

Written comments may also be submitted by emailing them (include docket number 18-IRP-01 and Integrated Resource Plans-publicly owned utilities in the subject line to the Docket Unit at docket@energy.ca.gov.

If you prefer, you may send a paper copy of your comments to:

California Energy Commission
Docket Unit, MS-4
Re: Docket No. 18-IRP-01
1516 Ninth Street
Sacramento, CA 95814-5512

Please note that your written and oral comments, attachments, and associated contact information (for example, your address, phone, email, etc.) become part of the viewable public record. This information may become available via Google, Yahoo, and other search engines.

Public Adviser and Other Commission Contacts

The Energy Commission's Public Adviser's Office provides the public assistance in participating in Energy Commission proceedings. If you want information on how to participate in this forum, please contact the Public Adviser, Alana Mathews, at PublicAdviser@energy.ca.gov or (916) 654-4489, or toll free at (800) 822-6228.

If you have a disability and require assistance to participate, please contact Poneh Jones at poneh.jones@energy.ca.gov or (916) 654-4425 at least five days in advance.

Media inquiries should be sent to the Media and Public Communications Office at mediaoffice@energy.ca.gov or (916) 654-4989.

If you have questions on the subject matter of this meeting, please contact Paul Deaver at paul.deaver@energy.ca.gov or (916) 651-0313.

Availability of Documents

The *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines* will be available online at https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=18-IRP-01.

Date: July 23, 2018

Original signed by

_____
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Lead Commissioner

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California Energy Commission

COMMISSION GUIDELINES

Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines

Second Edition

California Energy Commission

Edmund G. Brown Jr., Governor

July 2018 | CEC-200-2018-004

California Energy Commission

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DISCLAIMER

These guidelines were formally adopted by the Energy Commission on August 9, 2017, pursuant to Senate Bill 350: Clean Energy and Pollution Reduction Act (de León, chapter 547, Statutes of 2015). Public Utilities Code Section 9622, subdivision (c) gives the Energy Commission authority to adopt guidelines to govern the submission of information and data and reports needed to support the Energy Commission's review of the publicly owned utilities' Integrated Resource Plans. The requirements in these guidelines are based on Senate Bill 350 and Public Utilities Code Sections 9621 and 9622.

ACKNOWLEDGEMENTS

The *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines* were prepared with contributions from the following staff members:

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ABSTRACT

The *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines* specify the requirements for submitting information, data, and reports needed to support the California Energy Commission's review of integrated resource plans submitted by the specified publicly owned electric utilities in accordance with Senate Bill 350 (De León, Chapter 547, Statutes of 2015).

Keywords: Integrated resource plan, publicly owned utility, SB 350

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CHAPTER 1: Introduction

The California Energy Commission developed these guidelines to implement and administer portions of Public Utilities Code (PUC) Section 9622, relating to publicly owned utility (POU) integrated resource plans (IRPs) as codified by the Clean Energy and Pollution Reduction Act of 2015 (SB 350).[1] IRPs are electricity system planning documents that describe how utilities plan to meet their energy and capacity resource needs, policy goals, physical and operational constraints, and other utility priorities (such as reducing rate impacts on customers' bills). PUC Section 9621 applies to local publicly owned electric utilities with an average electrical demand exceeding 700 gigawatt-hours, as determined on a three-year average commencing January 1, 2013 (hereinafter "Filing POUs" as well as "POUs"). The guidelines specify the requirements for submission of POU IRPs and information and data needed to support the Energy Commission's review of IRPs. They also specify the Energy Commission's process for reviewing IRPs and recommending corrections for deficiencies.

Under PUC Section 9622(c), the Energy Commission's development and adoption of guidelines are exempt from the Administrative Procedure Act (Government Code Section 11340, et. al.), but ~~it~~the Energy Commission is required to follow a specified public process, including 30 days public notice and opportunity for public comment before adoption of the guidelines.

What's New in These Guidelines?

Below are substantive changes in this edition of *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines* compared to the August 2017 edition. The changes in the second edition include adding the requirements of Senate Bill 338 (Skinner, Chapter 389, Statutes of 2017). Senate Bill 338 requires POUs to consider existing renewable generation, grid operational efficiencies, energy storage, and distributed energy resources, including energy efficiency, to meet their energy needs during peak demand hours. These changes will become effective when adopted by the California Energy Commission. Changes include the following:

- POUs are required to include an assessment of how multi-hour energy storage addresses peak hour capacity needs (Section F.4: Energy Storage).
- POUs are required to include a discussion on how existing preferred resources and grid operational efficiencies are meeting reliability needs during the peak hours (Section G.3: Addressing Net Demand in Peak Hours).
- Definition of "net-peak demand" is added to Appendix A.

[1] Senate Bill 350~~,~~ (De León, Chapter 547, Statutes of 2015) as amended by Senate Bill 1393 (De León, Chapter 677, Statutes of 2016), and Senate Bill 338 (Skinner, Chapter 389, Statutes of 2017.)

- Clarified that POUs are to submit IRPs at least once every five years from the date their governing board adopts their IRP.
- Clarified the use of the term Excess Balance in relation to RPS procurement.
- Nonsubstantive typographical and formatting changes throughout the guidelines document.
- Nonsubstantive changes to the four standardized reporting tables and associated instructions in Appendix B.

Background

On October 7, 2015, Governor Edmund G. Brown Jr. signed SB 350 into law. Among other things, SB 350 increases the Renewables Portfolio Standard (RPS) procurement target from 33 percent to 50 percent of retail sales by 2030 and requires the doubling of energy efficiency savings in retail end uses by 2030.

SB 350 requires specified POUs to adopt IRPs consistent with PUC Section 9621. Many utilities already develop long-term planning documents intended to inform utility owners, ratepayers, investors, and governing board members of the planning strategy for achieving high-level policy goals.

PUC Section 9622 requires the Energy Commission to review POU IRPs to determine whether each is consistent with PUC Section 9621. PUC Section 9622 also requires the Energy Commission to provide recommendations to correct deficiencies within the IRP if the IRP is inconsistent with the requirements of PUC Section 9621. PUC Section 9622 authorizes the Energy Commission to adopt guidelines to govern the submission of information, data, and reports needed to support Energy Commission review of POU IRPs.

SB 350 also directs the Energy Commission to establish energy efficiency targets that achieve a statewide cumulative doubling of energy efficiency savings in electricity and natural gas end uses by 2030, to the extent doing so is cost-effective and feasible and does not adversely impact public health and safety. In establishing these targets, SB 350 requires the Energy Commission to conduct a public process that engages with stakeholders. This public process will be carried out separately through the *Integrated Energy Policy Report* (*IEPR*) process.

SB 350 added PUC Section 9621(b)(1) requiring that POU IRPs be developed to achieve greenhouse gas (GHG) emissions reduction targets established by the California Air Resources Board (CARB), in coordination with the California Public Utilities Commission (CPUC) and the Energy Commission, for the electricity sector and each local publicly owned electric utility that reflect the electricity sector's percentage in achieving the economy-wide GHG emissions reductions of 40 percent from 1990 levels by 2030.

CHAPTER 2:
Integrated Resource Plan Filing Contents

POU IRPs must be consistent with the requirements of PUC Section 9621. The IRP Ffiling[2] submitted to the Energy Commission must include the POU-adopted IRP, the four standardized tables and other "Ssupporting Iinformation" needed to support the Energy Commission's review of IRPs for consistency with PUC Section 9621.

A. Planning Horizon

PUC Section 9621 requires each POU to adopt an IRP that ensures the utility achieves specific goals and targets by 2030, including meeting the electricity sector and utility-specific greenhouse gas emissions reduction targets established by the California Air Resources Board (CARB) that reflect the electricity sector's percentage in achieving economy-wide greenhouse gas emissions reductions of 40 percent below 1990 levels, and ensuring procurement of at least 50 percent of eligible renewable resources. Each IRP Ffiling must include data and Ssupporting Iinformation sufficient to demonstrate the utility is meeting these goals and targets. The minimum planning horizon that achieves this objective begins no later than January 1 of the year that the POU's governing board adopts the plan and ends no earlier than December 31, 2030. Although not required, POUs are encouraged to undertake and present analysis in IRP Ffilings that addresses the post-2030 period.

B. Scenarios and Sensitivity Analysis

IRP Ffilings and IRP Ffiling updates[3] must meet the requirements of PUC Section 9621. POUs are encouraged to also evaluate other scenarios and sensitivity analyses to consider the feasibility and cost-effectiveness (and rate impacts) of alternative resource options. Although not required, POUs are encouraged to submit analyses of alternatives, as they may provide information beneficial to ratepayers, other utilities, and policy makers.

C. Standardized Tables

POUs must submit the following four standardized tables to the Energy Commission as part of the IRP Ffiling. The Energy Commission encourages POUs to submit data for multiple scenarios, though POUs are required to submit data only for the required scenario that is consistent with PUC Section 9621. Annual data must be reported in the standardized tables through the planning horizon.

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2 For clarity, an *IRP Ffiling* is a POU adopted IRP accompanied by the four standardized tables and other Ssupporting Iinformation while an *IRP* is just the integrated resource plan adopted by the POU.

3 An *IRP Ffiling update* is any IRP Ffiling submitted to the Energy Commission after the initial IRP Ffiling is submitted by January 1, 2019.

- Capacity Resource Accounting Table (CRAT): Annual peak capacity demand in each year and the contribution of each energy resource (capacity) in the POU's 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 POU resource plan to meet the RPS requirements.
- GHG Emissions Accounting Table (GEAT): Annual GHG emissions associated with each resource in the POU's portfolio to demonstrate compliance with the GHG emissions reduction targets established by CARB.

D. Supporting Information

Supporting Iinformation for an IRP Ffiling refers to (1) analyses, studies, data, and work papers, or other material that the POU used or relied upon (including inputs and assumptions) in creating the IRP (such as, but not limited to, market conditions current at the time of the analyses, energy infrastructure, state policies and laws, and needs of the Filing POU) but are not included in the IRP itself; and (2) additional information required by these guidelines. Supporting Iinformation supplements the data submitted in the standardized tables and must be submitted to the Energy Commission as part of the IRP Ffiling. Supporting Iinformation can be developed specifically for the IRP Ffiling or can be an existing document submitted or incorporated by reference as described in Chapter 3.

The Energy Commission recommends that, as appropriate, Ssupporting Iinformation be updated within the 24 months before adoption of IRPs. POUs should indicate where prior information remains relevant and retains value to avoid duplication of effort in filing updated IRPs.

E. Demand Forecast

Complying with PUC Section 9621 will require Filing POUs to use or develop a demand forecast. The Energy Commission recommends using the *California Energy Demand Forecast* developed annually as part of the *IEPR*.

1. Reporting Requirements

The Filing POUs must report annual forecasted peak demand (megawatt [MW]) in the CRAT and annual forecasted retail sales, other loads, and net energy for load in the EBT. The demand forecast is a necessary input for determining the resource procurement needs of each POU. The method used for developing the POU's demand forecast is needed by the Energy Commission to support the review of the IRP.

2. Demand Forecast Methodology and Assumptions

The IRP Filing must describe the demand forecasting methodology and assumptions used. If the POU uses a demand forecast developed by Energy Commission or another

public source, the IRP Ffiling must include that forecast as part of Ssupporting Iinformation.

If the POU develops the demand forecast, the IRP Ffiling must identify and explain any underlying assumptions. For example, economic and demographic assumptions can include future estimates of unemployment, population growth, number of households, housing starts, global oil prices and global growth, gross state product, electric rates, and tax policies. To the extent economic conditions and demographic assumptions are used in Ffiling POU demand forecasts and are primary drivers of demand growth, these must be provided to the Energy Commission as Ssupporting Iinformation.

The Energy Commission encourages the Filing POUs to include other demand forecast scenarios in their IRP Ffiling, such as forecasts based on different outlooks for economic and demographic assumptions, for example, a high-growth case and a low-growth case.

3. Demand Forecast – Other Regions

If the POU uses system modeling as part of the IRP development, the IRP Ffiling must include the demand forecast assumptions for regions outside the POU jurisdiction.

F. Resource Procurement Plan

The IRP Ffiling must report the mix of resources used by the POU in the IRP. This information must be reported on the CRAT, EBT, and GEAT, and RPS procurement must be reported on the RPT. In addition, to the extent the information is not included in the IRP, all inputs, assumptions, and methodologies must be provided as Ssupporting Iinformation.

1. Diversified Procurement Portfolio

The IRP Ffiling must address procurement for a diversified procurement portfolio consisting of both short-term and long-term electricity, electricity-related, and demand response products. This requirement can be met by providing the standardized tables and other filing requirements included in the guidelines, as discussed in the following sections.

2. RPS Planning Requirements

PUC Section 9621 requires POUs to adopt an IRP that ensures the POU procures at least 50 percent eligible renewable energy resources by 2030, consistent with PUC Article 16 (commencing with Section 399.11).

POUs must report the following data in the EBT and RPT and submit relevant Ssupporting Iinformation as part of the IRP Filing. Doing so will allow the Energy Commission to assess whether the procurement of renewable resources sufficient to meet the RPS planning requirements is included in the IRP.

a. Forecasted RPS Procurement Targets

POUs must define the minimum procurement needed to meet the procurement requirements for each compliance period pursuant to PUC Section 399.30(c)-(2). These numeric targets define the minimum procurement the Filing POU will need to meet the procurement target for each compliance period. There are four compliance periods covering 2017 through 2030. Calculation of the forecasted procurement target for each compliance period is based on annual retail sales (as reported in the EBT) and the POU's established RPS annual targets. The forecasted procurement targets for each compliance period may also be adjusted to reflect specific RPS provisions, such as voluntary green pricing programs or qualifying hydroelectric generation.

b. Renewable Procurement

POUs must provide a forecast of current procurement the POU assumes available to meet the RPS planning requirement. This forecast may include:

- Historical carryover from pre-2011 procurement.
- Excess procurement from previous compliance periods.
- Utility-owned and contracted resources (as identified in the EBT).
- Undelivered RPS energy: This is bundled RPS-eligible energy that the utility procured, for which the ~~renewable energy credits (~~RECS~~)~~ were then stripped off and the energy sold as *null power* (renewable energy with no RECS attached) to the California Independent System Operator (California ISO) or another utility through a wholesale transaction or bilateral contract.

POUs must provide a forecast of additional procurement in each compliance period. This forecast may include:

- Utility-owned resources or contracts for energy (as identified in the EBT).
- Purchase of unbundled RECs.

The POU must identify any exemptions or optional compliance measures relied upon that affect the POU's forecasted procurement requirements.

c. RPS Procurement Plan

PUC Section 399.30(a)(2) requires that Filing POUs incorporate their RPS procurement plan into the IRP Ff~~f~~iling. The substance of the POU RPS procurement plan and the frequency for updates are at the sole discretion of the POU.

The POU must include its current~~,~~ adopted RPS procurement plan as S~~s~~upporting I~~i~~nformation in its IRP Ff~~f~~iling.

d. Recommended Information

The Energy Commission encourages Filing POUs to provide additional information that would be useful for the Energy Commission's review of the IRP, including a description of:

- The POU's plan to meet the portfolio balance requirement and long-term contracting requirements.
- Any identified issues that have the potential to prevent the POU from procuring sufficient renewable resources.

3. Energy Efficiency and Demand Response Resources

PUC Section 9621 requires IRPs to address procurement for energy efficiency and demand response resources pursuant to PUC Section 9615. In addition, and to the extent that POUs rely on energy efficiency and demand response programs, IRP Ffilings must include the impacts of these programs. The IRP Ffilings may refer to, or rely on, filings to the Energy Commission under PUC Section 9505(b), or studies commissioned to estimate future potential savings. Where these filings or studies do not provide savings estimates through 2030, the method by which the estimates are extrapolated to 2030 should be explained in the IRP Ffiling.

a. Recommendations for Energy Efficiency and Demand Response Analysis

SB 350 requires the Energy Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas ~~final~~ end uses of retail customers by January 1, 2030. These statewide targets must be based on a doubling of the mid-case estimate of additional achievable energy efficiency (AAEE) savings, as contained in the *California Energy Demand Updated Forecast, 2015-2025*, extended to 2030.

The Energy Commission encourages POUs to include in the IRP Ffiling programs and measures that will contribute toward the SB 350 goal of doubling statewide energy efficiency savings. In addition, the Energy Commission encourages POUs to identify the relationship between (a) AAEE savings assumed in the IRP Ffiling, (b) the target established by the POU under PUC Section 9505, and (c) estimates of market, economic, and technically achievable energy efficiency savings from the study or studies POUs used to establish their targets under PUC Section 9505. Discussion of POU demand response programs would also be beneficial.

The Energy Commission also encourages POUs to include in the IRP Ffiling the expected quantitative impacts of planned price-sensitive demand response measures that are proposed or being considered for future implementation (for example, time-of-use rates).

b. Calculating and Reporting Energy Efficiency Impacts

To the extent POUs include energy efficiency in their IRP Ffilings, the POU must report, using the standardized tables, the quantitative effects of energy efficiency programs on energy demand and peak capacity needs, including "committed energy efficiency" and AAEE, as well as demand response and interruptible load programs assumed in each scenario. For the standardized tables:

1. *Committed energy efficiency* includes utility and public agency programs, building codes and appliance standards, and legislation and ordinances having final authorization, firm funding, and a design that can be readily translated into characteristics capable of being evaluated and used to estimate future impacts. The effects of committed energy efficiency may be included, as a separate line item, in the reported retail sales to end-use customers discussed in Section A.1.
2. *AAEE* includes energy efficiency savings not yet considered committed but deemed likely to occur, including impacts from future updates of building codes and appliance standards and utility efficiency programs expected to be implemented. The effects of AAEE on peak demand must be reported in the CRAT. Annual energy savings attributed to AAEE must be reported in the EBT.

c. Calculating and Reporting Demand Response Impacts

To the extent POUs include demand response in their IRP Ffilings, the POU must report the effect of demand response programs on the standardized tables and in Ssupporting Iinformation. The IRP Ffiling must include, as applicable, the effect of demand response and interruptible load programs in the CRAT as a line item for the peak capacity value (in total) of event-triggered demand response programs.

4. Energy Storage

PUC Section 9621 requires IRPs to address procurement for energy storage requirements pursuant to PUC Chapter 7.7 (commencing with PUC Section 2835).

a. Recommendations for Energy Storage Analysis

The Energy Commission provides the following recommendations for addressing procurement for energy storage in IRP Filings. To the extent possible, describe:

1. The possible role that storage can play to address overgeneration concerns and meet evening ramps while reducing the need for generation from specific gas-fired generation or market sources. POUs may consider including a narrative assessment of the suitability of multi-hour storage as a resource to address reliability (including peak--hour capacity needs) and/or financial impacts associated with overgeneration and/or meet evening ramping needs.
2. Any quantitative analyses undertaken by the POU or referenced in the IRP Ffiling that evaluates the cost-effectiveness of multi-hour storage compared to other resources that meet evening ramping needs.

5. Transportation Electrification

PUC Section 9621 requires IRPs to address procurement for transportation electrification.

a. Recommendations for Transportation Electrification Analysis

The transportation sector accounts for nearly 40 percent of statewide GHG emissions. Transportation electrification is an important strategy for meeting the state's long-term

GHG emission reduction goals. In addressing procurement for transportation electrification, POUs are encouraged to include the following information, to the extent possible, in the IRP Ffiling:

1. Charging profiles (for example, monthly, daily, or hourly load profiles) assumed for light-duty plug-in electric vehicle (LD PEV) forecasted through 2030 and assumed tariff(s) designed to influence that profile.
2. Current amount, type (for example, Level 1, Level 2, direct current [DC] fast charge), and location (for example, single-family dwelling, multifamily dwelling, workplace, public) of charging infrastructure in the POU service territory, and any investment plans to expand charging infrastructure.
3. Other transportation electrification , including, but not limited to, medium- and heavy-duty vehicle electrification, public transit, rail, port, maritime, other goods movement electrification, and off-road sectors, and the associated GHG emissions impacts.
4. How investments are prioritized to promote electrification in the different transportation sectors and complement non-utility initiatives.
5. Utility costs associated with serving transportation electrification (for example, distribution line and service extension upgrades, distribution system impacts, and mitigative or protective measures for the distribution system).
6. How transportation electrification investments and planning or modeling scenarios are aligned with federal, statewide, and/or local air pollution reduction and zero-emission-vehicle initiatives, or a combination thereof. These may include mandates, goals, and policies, (for example, Executive Orders B-16-2012 and B-32-15 and the subsequent *2016 Zero- Emission Vehicle Action Plan,*[4] *2016 Mobile Source Strategy,*[5] *California Sustainable Freight Plan,*[6] *and California Vehicle-Grid Integration Roadmap,*[7] regional transportation plans and sustainable communities strategy, or air quality improvement plans that support the 2016 State Strategy for the State Implementation Plan for Federal Ozone and PM2.5 Standards.[8]).
7. Plans to coordinate with adjacent or similarly situated utilities to meet broader community or regional infrastructure needs and ensure harmonious inter-territory operations of electric transportation technologies.
8. Current or planned programs to promote transportation electrification in disadvantaged communities.

4 See https://www.gov.ca.gov/wp-content/uploads/2017/09/2016_ZEV_Action_Plan.pdf.

5 See https://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.htm.

6 See http://www.casustainablefreight.org/.

7 See https://www.caiso.com/Documents/Vehicle-GridIntegrationRoadmap.pdf.

8 See https://www.arb.ca.gov/planning/sip/2016sip/2016sip.htm.

9. Customer education and outreach efforts being implemented to inform customers about programs, tariffs, and other opportunities to advance transportation electrification. These may include efforts to coordinate with facilities that host a large number of mobile emissions sources (for example, parking facilities, ports, airports, or distribution centers).
10. Coordination of transportation electrification investments and incentives with other distributed energy resource programs or planning.
11. Timeline and plan for collecting and sharing the data and information described in this section, if a Filing POU is unable to provide at this time.

The Energy Commission encourages continued dialogue on how it can partner with and support POU efforts to incorporate transportation electrification analysis in IRPs.

b. Calculating and Reporting Transportation Electrification Impacts

To the extent POUs include transportation electrification in their IRP Ffilings, the following must be reported on the standardized tables and in Ssupporting Iinformation, as applicable.

1. Accounting of increased electrical load from transportation electrification through 2030, as reported on the CRAT and EBT.
2. Accounting of net GHG emissions impact of transportation electrification based on increased electrical load and decreased transportation emissions through 2030.

The Energy Commission staff, in coordination with CARB staff, is developing a calculator that may be helpful to POUs in calculating the transportation sector GHG emissions reductions and electrical load associated with LD PEV deployment. POUs may use the calculator tool or explain the accounting, if different input assumptions or methodologies are used. The calculator will be posted to the Energy Commission website.

G. System and Local Reliability

PUC Section 9621 requires Filing POUs to adopt an IRP to ensure that each POU meets the goal of ensuring system and local reliability. PUC Section 9621 also requires IRPs to address procurement for the resource adequacy requirements established pursuant to PUC Section 9620.[9]

1. Reliability Criteria

In the CRAT, the Filing POU must include projections of annual peak capacity needs and the contribution of both demand and supply-side resources. Demand--side resources include AAEE, demand response, and interruptible load programs. Supply-side resources include generation, electricity storage resources (both utility-owned and under long-

9 PUC Section 9620 requires each local publicly owned electric utility serving end-use customers to prudently plan for and procure adequate resources to meet its planning reserve margin and peak demand and operating reserves, sufficient to provide reliable electric service to its customers.

term contract), and short-term and spot market purchases. The IRP Ffiling must report the planning reserve margin and how it was determined.

Substantial amounts of either customer-side-of-the-meter (or behind-the-meter) and central-station solar generation capacity are being developed throughout the state to meet the RPS. The IRP Ffiling must demonstrate how each POU is planning to meet all applicable reliability standards that are implicated by the need for increased grid flexibility.

To the extent possible, the Energy Commission recommends that Filing POUs provide an estimate of potential overgeneration and curtailment of renewables under their operational control. In addition, the Energy Commission recommends the IRP Ffiling contain details of demand and supply conditions (representative daily load profiles and "supply-resource stacks") for periods when overgeneration occurs.

2. Local Reliability Area

The IRP Ffiling must identify any local transmission constrained areas in the POU service territory, where loads can be reliably served only if there is sufficient local dispatchable generation capacity that provides operating reserves and associated energy under high-load conditions. POUs in the ~~California Independent System Operator (~~California ISO~~)~~ balancing authority area footprint that meet the local reliability needs must provide in the IRP Ffiling estimates of the requirements and the resources that may be used to meet the POUs' needs. These needs may include utility-owned generation, long-term contracts for generation and storage, and short-term resource adequacy planned contracts for capacity with resources under local resource adequacy contracts.

POUs in other California balancing authority areas must include in the IRP Ffiling existing or emerging local capacity needs arising from transmission constraints and how they are expected to be met. Although not required, POUs are encouraged to discuss or refer to transmission solutions for emerging local capacity shortfalls or to reduce local capacity needs.

3. Addressing Net Demand in Peak Hours

PUC Section 9621 requires the governing board of a local POU to consider how existing renewable generation, grid operational efficiencies, energy storage, and distributed generation resources, including energy efficiency, will meet energy and reliability needs during the hours of net-peak demand (net of demand met by variable renewable energy resources).

The IRP Filing must include a narrative describing how existing renewable resources, grid operational efficiencies, multi-hour energy storage, and distributed energy resources, including energy efficiency, were considered for meeting energy and reliability needs during the net-peak hours.

H. Greenhouse Gas Emissions

PUC Section 9621 requires POUs to adopt an IRP to ensure the utility meets, by 2030, the GHG emissions reduction target established by CARB. POUs must report in the GEAT estimated emissions intensities (in metric tons of carbon dioxide equivalent [CO_2e] per/megawatt hour [mt CO_2e/MWh] for each supply resource reported in the EBT. The IRP Ffiling must include Ssupporting Iinformation (such as a narrative discussion) to support assumptions on net emissions impacts from existing and planned programs expected to reduce net GHG emissions.

I. Retail Rates

PUC Section 9621 requires POUs to adopt an IRP to ensure the POU achieves the goals of fulfilling its obligation to serve its customers at just and reasonable rates and minimizing impacts on ratepayer bills. To align the statutory references in Section 454.52 to the applicable authority governing POU ratemaking, the IRP Ffiling must include, as Ssupporting Iinformation, a report or study on rate impacts under the IRP scenario, if that report or study was considered by the local governing authority as part of its IRP planning. Filing POUs are also encouraged to identify elements of the IRP or its scenarios that result in large ratepayer impacts.

J. Transmission and Distribution Systems

PUC Section 9621 requires POUs to adopt an IRP to ensure that the POU achieves the goal of strengthening the diversity, sustainability, and resilience of the bulk transmission and distribution systems, and local communities.

1. Bulk Transmission System

The IRP Ffiling must include a discussion of any bulk transmission system reliability concerns~~,~~ and measures to mitigate them over the planning horizon, including, as applicable:

a. Upgrades to transmission systems needed to integrate central station renewable resources.

b. Transmission systems upgrades for strengthening and improving the reliability of the bulk transmission system, including proposed on-line dates for the upgrades.

2. Distribution System

The IRP Ffiling must include a discussion of any distribution system reliability concerns and measures to mitigate them over the planning horizon, including the following, as applicable:

a. Upgrades or enhancements to the distribution system, including those intended to reliably integrate distributed generation.

b. Upgrades to communications and information technology intended to integrate demand-side energy management.

K. Localized Air Pollutants and Disadvantaged Communities

PUC Section 9621 requires the POUs to adopt IRPs to ensure the POU achieves the goal of minimizing localized air pollutants and other GHG emissions, with early priority on disadvantaged communities identified pursuant to Section 39711 of the Health and Safety Code (HSC). HSC Section 39711 requires the California Environmental Protection Agency (CalEPA) to identify disadvantaged communities based on geographic, socioeconomic, public health, and environmental hazard criteria. CalEPA ~~currently~~ identifies disadvantaged communities using the California Communities Environmental Health Screening Tool, available on its website.[10]

1. Reporting Requirements

IRP Ff~~f~~ilings must include a discussion of current programs and policies in place to address local air pollution, new and existing emissions reductions programs focused on disadvantaged communities, and efforts to identify disadvantaged communities in the POU service territory, if applicable. Reporting on any existing programs may include quantitative estimates of progress toward minimizing localized air pollutants, with identification of specific benefits and impacts to disadvantaged communities.

2. Other Recommended Topics

The Energy Commission encourages POUs~~' IRP~~ to report how programs assist and prioritize disadvantaged communities in their IRPs. For example, the Energy Commission recommends POUs report any POU program or measure designed to encourage the deployment of distributed energy resources in disadvantaged communities, including any programs for which income-related eligibility requirements have been or will be established.

The Energy Commission also encourages POUs to report plans and progress results in implementing the relevant recommendations included the Energy Commission's 2016 report *Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities* (Barriers Study).[11] The Barriers Study includes 12 recommendations aimed at increasing low-income customers' access to energy efficiency and renewable energy and the enabled benefits. Specific recommendations affecting POUs include the following:

10 https://www.calepa.ca.gov/files/2017/04/SB-535-Designation-Final.pdf.

11 Scavo, Jordan, Suzanne Korosec, Esteban Guerrero, Bill Pennington, and Pamela Doughman. 2016. Low-Income Barriers Study, Part A: Overcoming Barriers to Energy Efficiency and Renewables for Low-income customers and Small Business Contracting Opportunities in Disadvantaged Communities. California Energy Commission. Publication Number: CEC-300-2016-009-CMF.

- The governing boards of POUs might consider developing community solar offerings for low-income customers within their territories.
- The governing boards of POUs might consider developing or expanding pilot programs that provide solar for low-income customers and disadvantaged communities.

POUs are also encouraged to report plans and progress/results in implementing the relevant recommendations included in CARB's *Low-Income Barriers Study, Part B: Overcoming Barriers to Clean Transportation Access for Low-Income Residents.*[12] This study includes four principal recommendations and several specific action items to address the barriers faced by low-income residents to increase access to zero-emission and near-zero-emissions transportation options.

To support implementation of the Barriers Study recommendations and other goals included in SB 350, the Energy Commission encourages POUs to include the following additional information related to low-income customers and disadvantaged communities in their IRP Ff~~f~~ilings:

- Indicators used by the POU for tracking impacts and benefits of its programs on low-income customers and/or disadvantaged communities, and associated benchmarks toward achieving local, federal, and state policy goals.
- Specific strategies for maximizing the contribution of energy efficiency savings in disadvantaged communities.
- Transportation electrification investments, the effectiveness of these investments toward improving air quality in disadvantaged communities, and means of coordinating with local municipal authorities and air quality management or pollution control districts.
- Labor, workforce, and training programs designed to provide benefits to low-income customers, including those that live in disadvantaged communities.
- Financing mechanisms offered by the POU to improve access and participation of low-income customers in clean energy programs.
- Efforts by the POU to increase contracting opportunities for small businesses in low-income and disadvantaged communities.
- Any specific strategies used to maximize education and participation in clean energy and transportation programs for low-income customers and/or disadvantaged communities, including engagement with local community-based organizations for outreach activities.

12 The final guidance document~~Draft Guidance Document~~ is available at: https://www.arb.ca.gov/msprog/transoptions/transoptions.htm.

CHAPTER 3:
Integrated Resource Plan Filing and Review Procedures

On or before January 1, 2019, the governing board of a Filing POU is required to adopt an IRP and a process for updating the plan at least every five years from the date the POU board adopts its IRP. The Filing POU is solely responsible for its planning processes and procurement decisions, including development of an optimum resource mix that meets the requirements of PUC Section 9621.

The following rules govern the submission of IRP Ffilings to the Energy Commission and Energy Commission review of IRPs pursuant to PUC Section 9622.

A. Integrated Resource Plan Submission

POU IRPs, Ssupporting Iinformation, and the four standardized tables must be submitted to the Energy Commission to review IRPs for consistency with PUC Section 9621 according to the

1. Schedule

The initial IRP adopted by the POU on or before January 1, 2019, must be submitted by the POU or authorized representative to the Energy Commission by April 30, 2019. The complete IRP Ffiling must include the IRP, Ssupporting Iinformation, and the four standardized tables.

Updated IRP Ffilings must be submitted based on the date of POU governing board adoption as follows:

- An IRP adopted in the months of June through December must be submitted to the Energy Commission by April 30 the following year.
- An IRP adopted in January or February must be submitted to the Energy Commission by April 30 the same year.
- An IRP adopted in March, April, or May must be submitted to the Energy Commission within 90 calendar days after POU governing board adoption.

2. Requesting Time Extensions

POUs that require additional time to submit the IRP Ffiling may request an extension of deadlines by submitting a written request to the Executive Director, as described in California Code of Regulations (CCR), Title 20, Article 2, and Section 1342(c)(1).

3. Electronic Filing

Filing POUs must submit IRP Ffilings and updates using the Energy Commission's electronic filing and docket process in current use at the following link.

https://efiling.energy.ca.gov/

4. Providing Supporting Information

Supporting Information described in Chapter 2 must be either submitted directly to the Energy Commission through the electronic filing and docket process or included by reference. Referenced material that is not publicly available must be provided to Energy Commission staff upon request. References can point to an Energy Commission or other government agency proceeding where the material resides.

5. Requesting Confidentiality

POUs may request confidential designation for parts of an IRP Ffiling, according to the instructions in Appendix C. Yellow fill or yellow highlighting should be used to indicate all information and cells within the IRP, standardized tables, and Ssupporting Iinformation for which the Filing POU is requesting confidentiality.

6. Preparation and Submission of IRP Filing

Filing POUs may choose to have a representative entity, such as an association or contractor, prepare and submit the IRP Ffilings on their behalf. Such filings may be for the entire IRP or for select elements. The POU governing board must adopt the IRP or any mandatory elements to be submitted by the entity before it is filed with the Energy Commission. Information in the IRP Ffiling must be filed in a manner that allows staff to do a utility-specific review.

B. Review of IRP Filing

PUC Section 9622 requires the Energy Commission to review POU IRPs for consistency with the requirements of PUC Section 9621. The Energy Commission will use a two-step process.

1. Step 1: Check for Completeness

Within 30 calendar days of receiving a POU IRP Ffiling, Energy Commission staff will review the IRP Ffiling to ensure it includes the IRP, the four standardized tables, and required Ssupporting Iinformation.

A POU will be notified by Energy Commission staff if the IRP Ffiling is incomplete with a request for more information as described in Section (B)(3) of Chapter 3.

2. Step 2: Review for Consistency Wwith IRP Requirements

Within 120 calendar days of receiving a POU IRP Ffiling, Energy Commission staff will review the IRP Ffiling to determine whether the IRP is consistent with the requirements of PUC Section 9621.

The Energy Commission will post each IRP Ff~~f~~iling on its website and accept public comment for 30 calendar days following electronic filing. Public comments related to the consistency of the IRPs pursuant to PUC Section 9621 may be considered by the Energy Commission in reviewing the IRP for consistency with the requirements of PUC Section 9621.

3. Request for Information

At any time during its review, Energy Commission staff may request additional information from POUs as needed to support the Commission's review of the IRPs. The Energy Commission requests that POUs submit the additional information through the electronic filing system as described in Section (A)(3) of Chapter 3 within 30 calendar days.

4. Determination of Consistency W~~w~~ith PUC Section 9621

a. Staff Determination of Consistency

Within 120 days of receiving an IRP Ff~~f~~iling, or within 30 days of receiving any additional information requested, the Executive Director shall file an Executive Director's determination, finding the IRP consistent or inconsistent with the requirements of PUC Section 9621. If the Executive Director's determination finds an IRP inconsistent with the requirements of Section 9621, it shall include recommendations to correct any deficiencies.

The POU or any interested person may respond to or comment on the Executive Director's determination within 45 calendar days of issuance. The Executive Director's determination may be modified in response to POU or public comment received before adoption by the Energy Commission.

b. Energy Commission Consideration and Adoption of Executive Director's Determination

Within 120 days of filing of the Executive Director's determination, Energy Commission shall adopt an Energy Commission determination finding an IRP consistent or inconsistent with the requirements of PUC Section 9621. If the Energy Commission determines an IRP inconsistent with the requirements of Section 9621, it shall include recommendations to correct any deficiencies. The Energy Commission may adopt the Executive Director's determination as the determination of the Energy Commission, or may propose modifications to the Executive Director's determination, including any recommendations.

5. Process for Updating an Integrated Resource Plan

On or before January 1, 2019, POUs are required to adopt a process for updating the IRP at least once every five years. This process must include a schedule for adopting updated IRPs. Updated IRPs must meet all the requirements of PUC Section 9621. Updated IRP Ff~~f~~ilings must meet the requirements of these guidelines. The updated IRP

Ffiling can refer to previous IRP Ffilings if the information is still relevant and was relied on in the updated IRP.

CHAPTER 4:
General Provisions

A. Effective Date

Unless specified otherwise by the Energy Commission, the guidelines shall take effect upon adoption by the Energy Commission at a publicly noticed business meeting.

B. Substantive Changes to the Guidelines

The Energy Commission may make substantive changes to the POU IRP Guidelines pursuant to PUC Section 9622(c). Substantive changes will be considered at an Energy Commission business meeting with no less than 10 days public notice. Public Utilities Code Section 9622 requires the Energy Commission to provide at least 10 -days notice of any substantive changes to these guidelines. However, the Energy Commission will endeavor to seek stakeholder input with respect to any substantive changes to these guidelines at least 30 days before adoption.

C. Deadlines and Submission Dates

Submissions will meet the specified deadlines in the guidelines if they are submitted electronically using the electronic filing system and time stamped by the online system or email at or by 11:59 p.m. Pacific Time on the due date. Submissions that are not properly submitted using the online system will not be deemed submitted on time. If the due date falls on a weekend or state holiday, the due date becomes the next business day.

D. Use and Disclosure of Information and Records

The Energy Commission or its authorized agents may use any information or records submitted to the Energy Commission or obtained as part of any request for information under the POU IRP Guidelines to determine compliance with PUC Section 9621. The information and records include, but are not limited to, IRPs and any documentation submitted in support of said IRPs; documents submitted responding to request for information; any other documentation submitted upon request of the Energy Commission; publicly available information and documents; information submitted to other state, federal, or local agencies; and any other documents provided to or obtained by the Energy Commission.

Information and records submitted under the POU IRP Guidelines will be disclosed to other governmental entities and policing authorities for civil and criminal investigations and enforcement. This information and record may also be disclosed to the public under the California Public Records Act (Government Code Section 6250, et seq.).

If, as part of any IRP Ffiling, required report, or request for information, the Energy Commission requires the POU to provide copies of records that the POU believes contain proprietary information entitled to protection under the California Public Records Act or other law, the POU may request that such records be designated confidential under the Energy Commission's regulations for confidential designation, Title 20, California Code of Regulations, Section 2505. See Appendix C: Confidentiality for more information.

ACRONYMS

Acronym	Term
AAEE	Additional achievable energy efficiency
Barriers Study	Low-Income Barriers Study, Part A: *Overcoming Barriers to Energy Efficiency and Renewables for Low-Income Customers and Small Business Contracting Opportunities in Disadvantaged Communities*
CARB	California Air Resources Board
CalEPA	California Environmental Protection Agency
California ISO	California Independent System Operator
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRAT	Capacity Resource Accounting Table
EBT	Energy Balance Table
GEAT	GHG Emissions Accounting Table
GHG	Greenhouse gas
HSC	Health and Safety Code
IEPR	*Integrated Energy Policy Report*
IRP	Integrated resource plan
LD PEV	Light-duty plug-in electric vehicle
mt	Metric ton
MW	Megawatt
MWh	Megawatt-hour
POU	Publicly owned utility
PRC	Public Resources Code
PUC	Public Utilities Code
RPS	Renewables Portfolio Standard
RPT	RPS Procurement Table
SB 350	Senate Bill 350 (De León, Chapter 547, Statutes of 2015)

APPENDIX A: Definitions

Additional achievable energy efficiency (AAEE): Energy efficiency savings not yet considered committed but deemed likely to occur, including impacts from future updates of building codes and appliance standards and utility efficiency programs expected to be implemented.

Assumption: A statement made about the future for a given load forecast, or demand-side or supply-side energy resource, that should be used for procurement and transmission modeling.

Bundled renewable energy credit: An electricity product that, when procured by the POU claiming the electricity product to satisfy its RPS procurement requirements, includes both the electricity and the associated renewable energy credits from an eligible renewable energy resource. For example, if the POU claiming an electricity product owns the associated eligible renewable energy resource, then all electricity products, including those associated with electricity consumed onsite, may be considered bundled electricity products.

Committed energy efficiency: Energy efficiency savings estimated to occur from utility and public agency programs, codes, standards, legislation, and ordinances having final authorization, firm funding, and a design that can be readily translated into evaluable characteristics.

Demand forecast: A forecast of electricity demand served by the electric grid, measured by both peak demand and energy consumption. Some factors that determine load forecast include economics, demographics, behind-the-meter resources, and retail rates.

Excess Balance: Any amount of RPS-eligible RECs that a utility holds at the end of a compliance period that may be used to meet their compliance obligation in the next compliance period. Excess Balance can include excess procurement, historic carryover, or purchased RECs that have not been retired.

Filing POU: A local publicly owned electric utility with an annual electrical demand exceeding 700 gigawatt-hours, as determined on a three-year average commencing January 1, 2013.

Integrated resource plan (IRP): A plan adopted by the governing board of a POU pursuant to PUC Section 9621.

IRP Ffiling: An IRP adopted by the Filing POU's governing board that is electronically submitted to the Energy Commission, along with the standardized tables and Ssupporting Iinformation, by the Filing POU or authorized representative.

~~**Managed Forecast:** A demand forecast that has been adjusted to account for additional achievable energy efficiency.~~

Net-peak demand: The highest hourly electricity demand in the utility area, when excluding demand met by variable renewable generation resources directly connected to a California Balancing authority. Net-peak demand is calculated by taking the highest hourly demand (peak demand) and subtracting the electricity produced by variable renewable resources meeting that demand.

Noncoincident p~~P~~eak d~~D~~emand: the noncoincident peak is the ~~sum of actual peaks for the POU planning areas~~largest amount of power a POU must generate or procure in any hour of the year. Compare this to coincident peak demand which is the amount of power the POU must generate or procure in the hour in which system wide demand is greatest. Noncoincident peak demand is referred to as peak demand throughout these guidelines.

Plug-in electric vehicle (EV): A vehicle that uses one or more electric motors for propulsion. Electric vehicles include but are not limited to, battery-electric and plug-in hybrid vehicles.

Renewable energy credit (REC): A certificate of proof, as defined in PUC Section 399.12 (h), associated with the generation of electricity from an eligible renewable energy resource. RECs are certificates that represent the environmental attributes or 'greenness' of renewable electricity production.

Renewable Portfolio Standard (RPS): A Renewables Portfolio Standard is a regulation that requires a minimum procurement of energy from renewable resources, such as wind, solar, biomass, and geothermal.

Retail sales: Electricity consumption after accounting for behind-the-meter onsite generation including storage charge and discharge. It indicates the net energy delivered through the meter to the end-use customer, and thus excludes any generation or procurement in satisfaction of wholesale commitments (e.g., firm and spot market sales).

Scenario: A set of assumptions about future conditions used in power system modeling performed to support generation or transmission planning.

Sensitivity: A technique that determines how scenario analysis changes when an assumption is varied with all other scenario assumptions unchanged.

Standardized tables: The four tables that are required with the IRP F~~f~~iling submitted to the Energy Commission. These tables include information and data necessary to help staff determine if the IRP is consistent with PUC Section 9621. The four standardized tables are Capacity Resource Accounting Table (CRAT), Energy Balance Table (EBT), Renewable Procurement Table (RPT), and ~~the~~ Greenhouse Gas Emissions Accounting Table (GEAT).

Supporting Iinformation: Analyses, studies, data, and work papers, or other material (on which inputs, assumptions, or conclusions are based) that the POU used or relied upon in creating the IRP (such as, but not limited to, market conditions current at the time of the analyses, energy infrastructure, state policies and laws, and needs of the Filing POU) but are not included in the IRP itself; and additional information required by these guidelines. Supporting Iinformation may also include the inputs and assumptions that are based on the analyses, studies, data, work papers, and other material.

Unbundled renewable energy credit: A renewable energy credit from an eligible renewable energy resource that is not procured as part of the same contract or ownership agreement with the underlying energy from that eligible renewable energy resource; this includes RECs that were originally procured as a bundled product but were subsequently resold separately from the underlying energy.

APPENDIX B:
Standardized Tables

Introduction

The Capacity Resource Accounting Table (CRAT) is used by the Filing POU to report the IRP scenario capacity in megawatts (MW) to meet expected peak loads. It also provides the types of resources and, where known, the particular resource, such as a solar generation plant. The Energy Balance Table (EBT) is similar to the CRAT table but shows the Filing POU's forecast of total energy demand in gigawatt-hours. Both tables must report all years in the planning horizon (2019 through 2030).

The following sections will outline instructions for completing the four standardized tables that will be required for the SB 350-compliant planning scenario submitted to the Energy Commission under these guidelines. For that scenario and each additional scenario, assign a name or identification number. The IRP F~~f~~iling must include a description of the assumptions incorporated into each planning scenario.

Capacity Resource Accounting Table

The Filing POU must use the CRAT to demonstrate annual peak capacity needs and how the POU expects to meet them. (Historical values are requested for 2017 and 2018.) Supply resources include utility-owned, contracted-for generation and storage resources. These may be existing or planned (specific, identifiable, and known) resources or "generic," indicated by planning efforts and analysis, but not identified by name or location. They also include short-term contracted-for resources with unidentified generators or other counterparties to the transaction, whose procurement is anticipated to occur only shortly before they are needed (spot and short-term market purchases).

The table also distinguishes between RPS-eligible and non-RPS-eligible resources. This is done to facilitate and expedite completion of the RPS procurement table (RPT) with minimal effort.

Future resources yet to be identified are listed under "Generic Additions" with fuel source "to be determined" (TBD) selected. Use the most appropriate name or description for generic additions. If there is a strong likelihood that a future or planned resource type is known, then provide the best description of this capacity type and the intended fuel use.

Filing POUs must only report resource capacity that can be relied upon to perform. For contractual resources, show how much energy is expected to be available to meet annual peak loads (net qualifying capacity [NQC] or peak dependable capacity).

Line 1: Forecast Total Peak Hour 1-in-2 Demand

All Filing POUs are required to forecast their total demand during their noncoincident peak[13] hour for each year in the forecast period. This number, in MW, includes all power needed to serve end-use loads, along with the power needed to deliver supplies to these loads. The annual peak hour estimates may include allowances for transmission losses, distribution line losses, and unaccounted for energy.

Line 1 may include any anticipated pumping and recharging loads during the peak hour. Reductions due to customer-owned generation that reduces the procurement obligations of POUs must be reflected in the values.

The estimated impact of committed energy efficiency savings and price-sensitive demand response programs and measures must be embedded in the value in line 1, if they impact peak demand.

Line 1 should not have firm sales obligations embedded. Firm sales obligations are listed as a separate line item (line 9).

Lines 2 and 2a: Customer-Side Solar: Nameplate Capacity and Peak Hour Output

List the nameplate capacity and peak hour output of behind-the-meter solar in lines 2 and 2a, respectively. These numbers will not be used in calculations[14] but will indicate the amount of customer-side solar assumed by the utility to be deployed over the planning horizon and the related impact on peak capacity needs.

Line 3: Peak Load Reduction due to Thermal Energy Storage

Expected peak load reduction due to thermal energy storage (for example, chilling devices, ice bear storage, and so forth.[15]) deployed or incentivized by the utility, if any. This value, if non-zero, will already be reflected in line 1 and will not enter into calculations in the table. Any entries are required only to the extent that the POU is relying on this thermal energy storage to meet the requirements of PUC Section 9621 or the impacts of thermal storage on reliability require quantification. Thermal storage entries in line 3 are designed to provide the POU an opportunity to report expected peak capacity savings from investment in such resources. Line 3 should not include any resources whose capacity value is reported as a line item elsewhere in the table.

Line 4: Light-Duty PEV Consumption in Peak H~~h~~our

Report estimated electricity consumption by LD PEVs during the peak hour. This indicates the impact of LD PEV deployment on annual peak capacity needs and does not enter into any calculations in the table.

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13 From this point on, (noncoincident) peak will be referred to as "peak."

14 Row headings in the standardized reporting tables that are contained in brackets indicate that the values provided do not enter into formulas or calculations.

15 For more an example of thermal storage, see http://www.calmac.com/how-energy-storage-works.

Line 5: Additional Achievable Energy Efficiency Savings on Peak

Report estimates of feasible and cost-effective achievable energy efficiency savings on the peak, from future programs that were assumed in the IRP scenario to be developed but are not yet implemented or funded.

Committed energy efficiency savings must be embedded in the value in line 1.

Line 6: Demand Response/Interruptible Programs on Peak

Enter the MW impact on the peak hour of dispatchable, event-triggered demand response and interruptible load programs.

The estimated impact of price-sensitive demand response programs and measures must be embedded in the value in line 1.

Line 7: ~~Managed~~ Peak Demand (Accounting for Demand Response and AAEE)

Line 7 is the peak demand after accounting for the impacts of AAEE, demand response, and interruptible programs. The estimated impact of price sensitive demand response programs and measures on the peak must be embedded in the value in line 1.

The numbers entered in lines 5 and 6 will automatically be subtracted from the Forecasted Total Peak Hour 1-in-2 d~~D~~emand to produce the ~~Managed Peak~~ d~~D~~emand in line 7.

Line 8: Planning Reserve Margin

Line 8 should indicate the planning reserve margin (in MW) used for resource planning for each year. If a planning reserve margin used is other than a constant percentage, the basis for the value used (for example, "LOLE," "LOLP," or "largest contingency") must be provided in a note to the table or elsewhere in the IRP F~~f~~iling.

Line 9: Firm Sales Obligations

On line 9, list total firm wholesale electricity supply (in MW) that the POU has contracted to deliver to other parties during the peak hour, both within and outside the POU's balancing area. Include line losses, station load, and any reserves for the sales obligations that are required.

Line 10: Total Peak Procurement Requirement

Line 10 is the sum of lines 7, 8, and 9.

Lines 11a – 11g: Existing and Planned Utility-Owned Generation and Storage (Not RPS-Eligible)

In this section, the POU must report the amount of capacity from each existing or planned utility-owned or –controlled generation source or multi-hour energy storage device that is considered firm and reliable for meeting loads forecasted to occur in the

annual peak hour.[16] This amount would be measureable at the busbar[17]. For variable energy resources without flexible dispatch, such as solar and wind, dependable capacity estimates must reflect the expected availability of energy from the resources at the time of the annual peak and the variable nature of this supply. Capacity values must not be adjusted for expected forced outage rates.

Insert additional rows if needed.

Lines 11h – 11n: Existing and Planned Long-Term Contracts (Non-RPS-Eligible)

In this section, the POU must report the amount of firm capacity available during the peak hour from each existing bilateral contract and power purchase agreement that is more than three months. Each bilateral contract must be named and listed on a separate line beginning on line 11h.

Insert additional rows, if needed.

If a contract does not provide firm capacity during the peak hour but provides energy during the year (and is thus entered in the Energy Balance Table), enter the resource supply name and enter zero for the capacity amounts under the years covered by the contract. Contracts that provide less than 1 MW may be aggregated.

Line 11: Total Peak Dependable Capacity of Existing and Planned Supply Resources (Non-RPS-Eligible)

Line 11 will be automatically calculated as the sum of lines 11a–11n.

Lines 12a – 12n: Existing and Planned Utility-Owned RPS-Eligible Resources

List each utility-owned or -controlled RPS-eligible generating resource and associated dependable peak capacity values starting on line 12a. For variable energy resources that are nondispatchable, such as solar and wind, dependable capacity estimates must reflect the "planned for" availability of energy from these resources at the time of the annual peak.[18]

For dual-fuel power plants that can burn natural gas or biomethane (or biogas), list the same plant in both sections for fossil fuel and renewable resources, with the associated capacity and energy allocated to the two fuel types.

Insert additional rows, if needed.

16 Planned resources are those resources that the POU has committed to construct or purchase but have yet to come on-line or under utility control.

17 A busbar is a metallic strip or bar, typically housed inside switchgear, panel boards, and busway enclosures for local high current power distribution. They are also used to connect high voltage equipment at electrical switchyards, and low voltage equipment in battery banks.

18 This may differ from "expected" availability in a statistical sense. A 100-MW wind facility may have an average (mean) output of 30 MW in month/hour pair in which the utility's peak is assumed to occur, and a median output of 23 MW, but the utility may assume a third value for capacity planning purposes.

Lines 12o – 12tr: Existing and Planned Long-Term Contract (RPS-Eligible Resources)

Use lines 12o – 12tr to enter the peak dependable capacity associated with contracts for RPS-eligible renewable energy. Contracts with duration of more than three consecutive months may be entered on separate lines. Contracts that provide less than 1 MW of capacity may be aggregated by fuel type. Contracts that are less than three months in duration need not be reported in the CRAT. (Any shortfalls in capacity, for example, failing to procure enough capacity to meet the Total Peak Procurement Requirement, will be assumed to be met with such contracts.) After the lines 12o – 12tr are filled in, lines 11 and 12 will automatically be calculated.

Insert additional rows, if needed.

Line 12: Total Peak Dependable Capacity of Existing and Planned RPS-Eligible Resources

Line 12 will be automatically calculated as the sum of lines 12a – 12tn.

Line 13: Total Peak Dependable Capacity of Existing and Planned Supply Resources

Line 13 will be automatically calculated as the sum of lines 11 and 12.

Lines 14a – 14n: Non-RPS-Eligible Generic Additions

List each generic non-RPS-eligible resource and the related peak dependable capacity value starting on line 14a. Generic additions are nonspecific resources (utility-owned and/or contracted) that have yet to be procured but will be needed to meet future requirements.

Insert additional rows, if needed.

Line 14: Total Peak Dependable Capacity of Generic Supply Resources (Non-RPS-Eligible)

Line 14 will be automatically calculated as the sum of lines 14a – 14n.

Lines 15a - 15n: RPS-Eligible Generic Additions

Enter each generic RPS-eligible resource and its peak dependable capacity value. Generic additions are nonspecific resources (utility-owned and/or contracted) that have yet to be procured but will be needed to meet future requirements.

Insert additional rows if needed.

Line 15: Total Peak Dependable Capacity of Generic RPS-Eligible Resources

Line 15 will be automatically calculated as the sum of lines 15a – 15n.

Line 16: Total Peak Dependable Capacity of Generic Supply Resources

Line 16 will be automatically calculated as the sum of lines 14 and 15.

Line 17: Total Peak Procurement Requirement

Line 17 will be copied from line 10.

Line 18: Total Peak Dependable Capacity of Existing and Planned Supply Resources

Line 18 will be copied from line 13.

Line 19: Current Capacity Surplus (Shortfall)

Line 19 will be calculated as the difference between lines 18 and 17.

Line 20: Total Peak Dependable Capacity of Generic Supply Resources

Line 20 will be copied from line 16.

Line 21: Planned Capacity Surplus/Shortfall

Line 21 is the sum of lines 19 and 20. Any shortfall in planned capacity (a negative value on line 21) will be assumed to be addressed with short-term contracted resources (less than three months in duration).

Energy Balance Table

In the EBT, POUs are required to provide estimates of annual retail sales and net energy for load (in MWh) through 2030. (Historical values are requested for 2017 and 2018.) The EBT provides a detailed estimate of the POU's annual energy needs through 2030, accounting for the impacts of AAEE and customer generation. The EBT also contains estimates of annual energy from supply resources, including utility-owned generation and multi-hour storage resources, bilateral contracts, and spot market/short-term purchases.

Data submitted in the EBT must correspond with matching data in the CRAT. If a capacity-only resource is listed in the CRAT, this same resource must appear in the EBT with zero values for expected annual energy supply.

Line 1: Retail Sales to End-Use Customers

Enter projected annual retail sales, as defined in Title 20, Section 3201. This may include metered city loads and reflect the impact of committed energy efficiency measures and programs (but not AAEE).

Line 2: Other Loads

Enter loads for which there is not an associated RPS obligation, including pumping loads, multi-hour storage loads (incremental net energy for load needed due to multi-hour storage losses, including energy needed for pumped hydro storage), and other utility loads, for example, unmetered city loads, but excluding firm sales obligations.

If multi-hour storage loads are significant, they must be entered as a separate line item or items.

Line 3: ~~Unmanaged~~ Net Energy for Load

This entry must reflect the sum of lines 1 and 2 plus transmission and distribution losses, unaccounted-for energy, and energy needed to serve station loads of utility-controlled resources.

If distributed generation injected on to the distribution system does not affect retail sales estimates but does affect estimated net energy for load requirements, and the amount of this energy is an assumption used in or output of modeling for the IRP, it must be added as a line item in the Net Energy for Load Calculations section of the EBT.

Line 4: ~~Managed~~ Retail Sales (Accounting for AAEE Impacts)

This entry must reflect the estimated impact of AAEE on retail sales. The value entered here will be automatically copied to the RPT.

Line 5: ~~Managed~~ Net Energy for Load (Accounting for AAEE Impacts)

This entry must reflect the estimated impact of AAEE on the utility's annual net energy for load requirements.

Line 6: Firm Sales Obligations

Enter the net energy for load associated with firm (wholesale) sales obligations under long-term contracts (including generation to cover lines losses and station load). This must not include projected generation for sales into short-term and spot markets.

Line 7: Total Net Energy for Load

This will be automatically calculated as the sum of lines 5 and 6.

Line 8: Customer-Side Solar Generation

Enter estimated annual customer-side solar generation, both consumed on site and injected onto the distribution system.

Line 9: Light-Duty PEV Electricity Consumption/Procurement Requirement

Enter estimated annual LD PEV electricity consumption or the incremental net energy for load associated with this consumption. Indicate which one it is by modifying the line header.

Line 10: Other Transportation Electricity Consumption/Procurement Requirement

Enter the (incremental) consumption or increase in net energy for load associated with any other major transportation electrification program(s) developed, provided support by or otherwise encouraged by the utility. Indicate which is provided by modifying the line header. Any entries are required only to the extent that the POU is relying on this transportation electrification to meet the requirements of PUC Section 9621 or the impact of this electrification to reliability requires quantification. Details regarding the program(s) may be provided elsewhere in the IRP Filing. This entry will provide

quantitative information on the demand-side impact of major programs that increase net energy for load requirements while reducing GHG emissions.

Line 11: Other Electrification/Fuel Substitution; Consumption/Procurement Requirement

Enter the (incremental) consumption or increase in net energy for load associated with any other major electrification (fuel substitution) program(s) developed, provided support by, or otherwise encouraged by the utility. Indicate which is provided by modifying the line header. Any entries are required only to the extent that the POU is relying on this electrification/fuel substitution or consumption/procurement to meet the requirements of PUC Section 9621 or the impact of this electrification/fuel substitution to reliability requires quantification. Details regarding the program(s) may be provided elsewhere in the IRP Ffiling. The purpose of this entry is to provide quantitative information on the demand-side impact of major programs that increase net energy for load requirements while reducing GHG emissions.

Lines 12a – 12g: Existing and Planned Utility-Owned Generation Resources (Non- RPS-Eligible)

Enter the projected annual energy from each existing and planned utility-owned or –controlled generation resource in the utility portfolio.

Insert additional rows, if needed.

Values entered here must not include generation to meet firm wholesale obligations or sales into short-term and spot markets. If the utility has firm sales obligations under long-term contracts and elects to include the energy generated for these contracts, insert a note in the table to explain which generation resources and how much energy those resources are generating to meet the firm wholesale obligations.

Lines 12h – 12n: Existing and Planned Long-Term Contracts (Non-RPS-Eligible)

Enter the projected annual energy from each existing and planned long-term contract in the utility portfolio.

Insert additional rows, if needed.

Line 12: Total Energy From Existing and Planned Supply Resources (Non-RPS-Eligible)

This is automatically calculated as the sum of lines 12a – 12n.

Lines 13a – 13n~~h~~: Existing and Planned Utility-Owned RPS-Eligible Generation Resources

Enter the projected annual energy from each existing and planned utility-owned or –controlled RPS-eligible generation resource.

Insert additional rows, if needed.

Lines 13oi – 13tn: Long-Term Contracts (RPS-Eligible)

Use lines 13oi – 13tn to list power (yearly MWh) obtained from individual renewable energy contracts. ~~Contracts longer than three consecutive months may be named and listed on separate lines beginning with line 14i.~~

Renewable contracts that provide less than 1 MWh of supply may be aggregated by fuel type. State the fuel type first (for example, geothermal, solar, wind), then the contract name. Also include here any amounts of existing and expected renewable distributed generation (DG) supply that is surplus to customer consumption during the year (in MWh). Do not include DG output that is produced and consumed on the customer's side of the meter. Include only amounts of DG injections that would otherwise be supplied by the POU.

Insert additional rows, if they are needed, to list more supply resources.

Line 13: Total Energy From Existing and Planned Supply Resources (RPS-Eligible)

This is automatically calculated as the sum of lines 13a – 13tn.

Line 13z: Undelivered RPS Energy

Enter the projected amount of RPS-eligible energy that the utility does not use to meet load requirements. This means RPS energy generated or purchased by the utility and then sold as null power into a wholesale market or under a bilateral contract. (Energy and emissions associated with firming and shaping contracts[19] must not be included anywhere in the EBT and GEAT tables).

Undelivered RPS energy is a share of the energy reported in lines 13a-13tn; it is not in addition to it. For example, if all the energy from three of the resources in 13a-13tn is projected to be sold, 13z will be the sum of those three values.

As undelivered RPS energy is included in the total energy from supply resources (line 19), total energy will exceed total net energy for load (lines 7, 23) by this amount. An adjustment is made to reconcile this difference in the Energy Balance Summary (see lines 19-23).

Line 14: Total Energy From Existing and Planned Supply Resources

This is automatically calculated as the sum of lines 12 and 13.

Lines 15a – 15n: Non-RPS-Eligible Generic Additions

Enter the projected annual energy from each generic non-RPS-Eligible generation resource. Generic additions are nonspecific resources (utility-owned and/or contracted) that have yet to be procured but will be needed to meet future requirements.

[19] For information on firming and shaping contracts please see http://www.energy.ca.gov/portfolio/.

Insert additional rows if needed.

Line 15: Total Energy From Non-RPS-Eligible Generic Additions

This is automatically calculated as the sum of lines 15a – 15n, plus additional rows, if necessary.

Lines 16a – 16n: RPS-Eligible Generic Additions

Enter the projected annual energy from each generic RPS-eligible generation resource. Generic additions are nonspecific resources (utility-owned and/or contracted) that have yet to be procured but will be needed to meet future requirements.

Insert additional rows, if needed.

Line 16: Total Energy From RPS-Eeligible Generic Additions

This is automatically calculated as the sum of lines 16a – 16n, plus additional rows, if neecessary.

Line 17: Total Energy From Generic Additions

This is automatically calculated as the sum of lines 15 and 16.

Line 17z: Total Energy From RPS-Eeligible Short-term Contracts

Enter the total power (yearly MWh) projected from any short-term renewable energy contracts (in aggregate).

Line 18: Short-Term and Spot Market Purchases

Enter projected annual energy from short-term and spot market purchases. This is a gross, not net value; projected short-term and spot market sales must not be included (netted out). Utility portfolio GHG emissions include those from purchased energy; emissions from energy sold are attributable to the buyer of that energy.

Projected purchases of RPS-eligible energy must not be included here, but entered on line 17z.

Line 19: Total Energy From Supply Resources

This is automatically calculated as the sum of lines 14, 17, and 17z.

Line 19a: Undelivered RPS Energy

This line is copied from line 13z.

Line 20: Short-Term and Spot Market Purchases

This is automatically copied from line 18.

Line 21: Total Delivered Energy

This is automatically calculated as the sum of lines 19 and 20 less line 19a.

Line 22: Total Net Energy for Load

This line is automatically copied from line 7.

Line 23: Energy Surplus/Shortfall

This is automatically calculated as line 21 less line 22.

Greenhouse Gas Emissions Accounting Table

The GHG Emissions Accounting Table (GEAT) will show the POU's projected annual GHG emissions in million metric tons of carbon dioxide equivalent (Mmt CO_2e) attributed to each generation resource in the POU's portfolio. In this table, emission intensities expressed in units of metric tons of carbon dioxide equivalent per megawatt-hour (mt CO_2e/MWh) are assigned to each generator in a POU's portfolio. This value is then multiplied by values reported in the EBT to arrive at annual GHG emissions for each resource and total amount of GHG emissions for the utility's portfolio.

A POU may develop emissions intensities and use them for their utility-owned generation. All energy procured that cannot be tracked back to a specific generation source will be assigned an emission intensity of 0.428 Mt CO_2e/MWh, consistent with the value used by CARB for unspecified power imported from out of state. The utility may also develop and use emissions intensities for generic gas-fired generation additions to its portfolio. These values must be consistent with the performance and fuel consumption of new resources designed to be economical for the dispatch profile of the resource.

The table distinguishes between supply resources that provide RPS-eligible energy and those that do not. This has been done to facilitate the joint completion of the EBT, RPT, and GEAT.

Line 1a – 1g: Existing and Planned Utility-Owned Generation (Non-RPS-Eligible)

Enter the emissions intensity for each utility-owned (not RPS-eligible) resource starting on line 1a. The emissions from the resource in each year can be estimated by multiplying the corresponding value in the EBT by the emissions intensity if the resource is not used to meet a firm sales obligation. If a share of the output from the resource is used to meet a firm sales obligation, the values will have to be calculated, with the share of output being deducted from the total. (A note in the table may indicate which resources in the utility's portfolio have contributed to meeting firm sales obligations.)

Insert additional lines as needed.

Resources with an emissions intensity of zero or with zero output may be omitted.

Line 1h – 1n: Existing and Planned Long-Term Contracts (Non-RPS-Eligible)

If the contract specifies the generation resource provides energy, enter the emissions intensity for the resource in the appropriate cell, starting on line 1h. If the contract does not specify a resource or resources, use 0.428 mt CO_2e/MWh. For contracts that provide energy from a defined portfolio of generation resources, estimate an emission intensity based on expected amounts from each resource.

As done for lines 1a–1g, multiply the corresponding energy values in the EBT by the emissions intensity, making any adjustments that are necessary if energy delivered under the contract is used to meet firm sales obligations.

Insert additional lines as needed.

Line 1: Total GHG Emissions of Existing and Planned Supply Resources (Non-RPS-Eligible)

This is automatically calculated as the sum of lines 1a – 1n.

Lines 2a – 2ng: Existing and Planned Utility-Owned Generation (RPS-Eligible) and

Lines 2oh – 2tn: Existing and Planned Long-Term Contracts (RPS-Eligible)

Only resources with non-zero emissions intensity may be listed in this section. For resources that have non-zero emissions intensity, enter the emissions intensity for each of those resources. Insert additional lines as needed.

Line 2: Total GHG Emissions of Existing and Planned Supply Resources (RPS-Eligible)

This is automatically calculated as the sum of lines 2a – 2tn.

Line 3: Total GHG Emissions Ffrom Existing and Planned Supply Resources

This is automatically calculated as the sum of lines 1 and 2.

Lines 4a – 4n: Non-RPS-Eligible Generic Additions

For each generic non-RPS-Eligible resource, enter the emissions intensity, starting on line 4a. The utility may develop and use emissions intensities for generic gas-fired generation additions to its portfolio. These values must be consistent with the expected performance and fuel consumption of new resources designed to be economical for the dispatch profile of the resource.

Insert additional lines as necessary.

Line 4: Total GHG Emissions Ffrom Generic Non-RPS-Eligible Additions

This is automatically calculated as the sum of lines 4a – 4n.

Lines 5a – 5n: Total GHG Emissions Ffrom Generic RPS-Eligible Additions

Enter an emissions intensity and emissions values for any generic RPS-eligible resource that has a non-zero emissions value.

Line 5: Total GHG Emissions Ff~~f~~rom Generic RPS-Eligible Additions

This is automatically calculated as the sum of lines 5a – 5n.

Line 6: Total GHG Emissions Ff~~f~~rom Generic Supply Resources

This is automatically calculated as the sum of lines 4 and 5.

Line 7: GHG Emissions Ff~~f~~rom Short-Term Purchases

An emissions intensity of 0.428 mt CO_2~~-~~e/MWh is used for spot market purchases. Short-term and spot market purchases are defined as contracts less than three months in duration.

Line 8: Total GHG Emissions to Meet Net Energy for Load

This is automatically calculated as the sum of lines 3, 6, and 7.

Emissions Adjustments

Line 8a: Undelivered RPS-Eligible Energy (in MWh)

This is automatically copied from line 13z~~2a~~ in the EBT~~RPT~~.

Line 8b: Firm Sales Obligation (in MWh)

This is automatically copied from line 6 in the EBT.

Line 8c: Total Energy for Emissions Adjustment (in MWh)

This is automatically calculated as the sum of lines 8a and 8b.

Line 8d: Emissions Intensity of Resource Portfolio (Including Spot Market Purchases)

Enter the volume~~-~~-weighted average emissions intensity of gas and short-term and spot market purchases in the utility portfolio. This will be used to calculate the portfolio emissions adjustment.

Line 8e: Emissions Adjustment

This is automatically calculated as the product of 8c and 8d.

Line 8f: Adjusted Portfolio Emissions

This line is automatically calculated as line 8 less line 8e. This line represents the utility's portfolio emissions after adjusting for ~~non-~~undelivered RPS-eligible energy (line 19a in EBT).

GHG Emissions Impact of Transportation Electrification

Lines 9 -12 call for estimates of the GHG emissions impact of transportation electrification. This is being done to gain a better understanding of the impacts of transportation electrification on GHG emissions from the electricity sector. Any entries are required only to the extent that the POU is relying on this transportation

electrification to meet the requirements of PUC Section 9621 or the impacts of electrification to reliability require quantification.

Line 9: GHG Emissions Reduction due to Gasoline Vehicle Displacement by LD PEVs

Estimate of annual reductions in GHG emissions in the transportation sector due to the displacement of gasoline-powered vehicles by LD PEVs.

Line 10: GHG Emissions Increase due to LD PEV Electricity Loads

Estimate of GHG emissions increase due to (incremental) electricity loads associated with LD PEV deployment.

Line 11: GHG Emissions Reduction due to Fuel Displacement – Other Transportation Electrification

Estimate of (gross) GHG emissions reductions in the transportation sector due to "other vehicle electrification." Any entries are required only to the extent that the POU is relying on this transportation electrification to meet the requirements of PUC Section 9621 or the impacts of electrification to reliability require quantification. The POU must indicate (in notes in the table, a spreadsheet, or elsewhere in the IRP Filing) how the entered values were derived. Although not required, the Energy Commission encourages the Filing POU to explain how major projects and utility programs and measures contributed to the total reduction.

Line 12: GHG Emissions Increase due to Increased Electricity Loads – Other Transportation Electrification

Estimate of GHG emissions increase due to (incremental) electricity loads associated with "other transportation electrification." Any entries are required only to the extent that the POU is relying on this transportation electrification to meet the requirements of PUC Section 9621 or the impacts of electrification to reliability require quantification. The POU must indicate (in notes in the table, a spreadsheet, or elsewhere in the IRP Ff~~f~~iling) how the entered values were derived.

RPS Procurement Table

The RPS Procurement Table (RPT) is the standardized reporting table that identifies the renewable energy and ~~renewable energy certificates (~~REC~~)~~ procurement and retirement in each RPS compliance period through the planning horizon. The retail sales may be adjusted due to hydroelectric procurement or green power programs as allowed under PUC Section 399.11 *et. seq.* RECs can be reported in this table and can be used toward satisfying requirements of the RPS. The table also provides for optional use of RECs in the form of historic carryover and excess procurement.

Begin completing the RPT by first indicating the name of the scenario being reported in cell B7.

Line 1: ~~(Managed)~~ Annual Retail Sales (Accounting for AAEE Impacts)

Line 1 will be automatically filled with the annual estimates of ~~managed~~ retail sales (accounting for AAEE impacts) provided in the EBT.

Line 2: Green Pricing Program Exclusion

Enter the projected annual retail sales associated with green pricing programs that may be deducted from the retail sales value (in line 1) used to calculate the RPS procurement obligation.

Line 3: Soft Target (Percentages)

Line 3 is the annual soft target for each compliance period, for the RPS.

Line 4: Required Procurement for Compliance Period

Line 4 is the required procurement of renewable energy (or required retirement of RECs) over the compliance period based on lines 1 through 3. Should a POU's procurement requirement for the compliance period be affected by other factors (such as hydroelectric generation in the POU portfolio, as described in Section 399.30 of the Public Utilities Code) or involve optional compliance measures, lines 2 through 4 may be edited or augmented to reflect how the procurement requirement is derived.

Line 5: Excess Balance~~/Historic Carryover~~ at Beginning/End of Compliance Period

If used for planning, enter the sum of the Excess Balance ~~excess balance and historic carryover~~ of Category 0, 1, ~~and~~ 2, and historic carryover RECs at the beginning of the third compliance period (2017–2020). Subsequent values on line 5 are automatically filled in based on this value and those on line 8.

Line 6: RPS-Eligible Energy Procured

The projected annual procurement of RPS-eligible energy (the sum of lines 13, 16, and 17z from the EBT) will automatically be entered here.

Line 6A: Amount of Energy Applied to Procurement Obligation

Enter the amount of energy that will be applied to the procurement obligation during the year/compliance period. If the value differs from the corresponding entry in line 6, it will result in a change in the Excess Balance~~carryover~~ at the end of the compliance period.

Line 7: Net Purchases of Category 0, 1, and 2 RECs

Enter the projected annual net purchases of Category 0, 1, and 2 RECs.

Line 7a: ~~Carryover~~ Excess Balance and REC Purchases Applied to Procurement Obligation

Enter the projected number of Category 0, 1, and 2 RECs that will be applied to the procurement obligation during the year.

Line 8: Net Change in Balance/Carryover (RECs and RPS-Eligible Energy)

Line 8 is automatically calculated as sum of lines 6 and 7 less lines 6A and 7A.

Line 9: Excess Balance~~/Historic Carryover~~ at Beginning/End of Compliance Period

If used for planning, enter the sum of the ~~excess balance~~Excess Balance ~~and historic carryover~~ of Category 3 RECs at the beginning of the third compliance period (2017 – 2020).Subsequent values on line 9 are automatically filled in based on this value and entries on line 12.

Line 10: Net Purchases of Category 3 RECs.

Enter the projected net purchases of Category 3 RECs during the year.

Line 11: ~~Carryover~~ Excess Balance and REC Purchases Applied to Procurement Obligation

Enter the projected number of Category 3 RECs (~~carryover excess balance~~Excess Balance and purchases) that will be applied to the procurement obligation during the year. If the value differs from the corresponding entry in line 10, it will result in a change in the ~~carryover excess balance~~Excess Balance (line 9) at the end of the compliance period, and the net change in ~~excess balance~~Excess Balance~~/carryover~~ (line 12).

Line 12: Net Change in REC Balance~~/Carryover~~

This line measures the difference between the amount of RECs purchased and applied, for each year in each compliance period. This line is automatically calculated as line 10 less line 11.

Line 13: Total Generation Plus RECs (All Categories) Applied to Procurement Requirement (for Each Period)

This line is automatically calculated as the sum of lines 6A, 7A, and 11 for each compliance period. This line contains the estimated RECs and RPS-eligible energy that is applied to the procurement obligation in each compliance period.

Line 14: Over/Underprocurement for Compliance Period

Line 14 contains the estimated over/underprocurement of renewable energy (retirement of RECs) during the compliance period. It is automatically entered as the difference between lines 13~~4~~ and 4.

APPENDIX C: Confidentiality

How to Request Confidentiality

The Energy Commission's Executive Director has the responsibility for determining what information submitted with an application for confidentiality will be deemed confidential. Parties who seek such a designation for data must submit a separate written request that identifies the specific information to be kept confidential, why the information should be protected from release, the length of time such protection is sought, and whether the information can be released in aggregated form.

Certain categories of data provided to the Energy Commission, when submitted with a request for confidentiality, will be automatically designated as confidential and do not require an application. The types of data that are eligible and the process for obtaining this confidential designation are specified in California Code of Regulations (CCR), Title 20, Section 2505(a)(5). The Energy Commission has its own regulations distinct from those governing the California Public Utilities Commission (CPUC). The CPUC's determinations on confidentiality are not applicable to data submitted to the Energy Commission.

Parties should be aware that some confidential data may be disclosed after aggregation according to CCR, Title 20, 2507(d) or (e). Both historical and forecast energy sales data may be disclosed if reported at the following levels:

- For each POU, data may be aggregated at the statewide level by major customer sector.
- For the sum of all POUs, data may be aggregated at the service area, planning area, or statewide levels by major customer sector.
- For the total sales of the sum of all electric retailers, data may be aggregated at the county level by major generator, utility, and ESP groups as these groups are defined by the U.S. Census Bureau in their North American Industry Classification System.

Data that are not included in these categories, but that the filer believes are entitled to confidential treatment, should be submitted when due along with an application for confidential designation. The Executive Director will review the information and make a determination about its confidential status. Please carefully read and follow the instructions.

Repeated Applications for Confidentiality

Information submitted to the Energy Commission can be deemed confidential without the need for a new application under CCR, Title 20, Sections 2505(a)(1)(G) and 2505(a)(4)

if you file a certification under penalty of perjury that the new information is substantially similar to the previously granted confidentiality.

In this case, your current application will serve as your certification, and the designation of confidentiality will be under the same terms as the prior designation. The information will remain confidential under the same terms as the prior designation for the same or comparable period identified by the applicant in the application.

What a New or Repeated Confidentiality Application Must Have

Applications for confidentiality and the confidential documents must be uploaded directly to Dockets Unit through the e-filing system. Paper copies or CDs do not need to be submitted. Links to the e-filing system are provided on each proceeding Web page (http://www.energy.ca.gov/sb350/IRPs/index.html) under the link "Submit e-filing." The docket for this proceeding is 18-IRP-01~~17-IEPR-07~~, project title: Integrated Resource Planning. Registration is necessary the first time documents are uploaded. Once registration is complete, submit a confidential filing by clicking on "Quick Actions" from the dashboard and select "submit confidential e-filing" from the dropdown tab. The application needs to be uploaded first followed by the confidential materials. The application will then be acted upon by the Executive Director in consultation with the Chief Counsel of the Energy Commission.

A signed "penalty of perjury certification" must be included in the application. Suggested standard language is as follows:

> I certify under penalty of perjury that the information contained in this application for confidential designation is true, correct, and complete to the best of my knowledge. I also certify that I am authorized to make the application and certification on behalf of (insert the name of your utility here).

For electronic filings containing a signature, including for submissions into electronic data bases requiring a signature as attestation of information, the signature may be in electronic form and represented as a scanned signature graphic, or "Original Signed By," "/S/," or similar notation followed by a typewritten name.

A complete application for confidentiality contains the following information:

- Identification of the information being submitted, including docket number, title, date, and size (for example, pages, sheets, megabytes).
- Description of the data or information for which confidentiality is being requested (for example, particular electricity supply contract categories for particular years).
- On Excel forms submitted with prospectively confidential data, identification of specific cells using yellow fills that are consistent with the confidentiality application.

- A clear description of the period for which confidentiality is being sought for each information category (for example, until December 31, 2017).
- An appropriate justification for each confidential data category request, including applicable provisions of the California Public Records Act (Government Code Section 6250 et seq.) and/or other laws.
- A statement attesting that a) the specific records to be withheld from public disclosure are exempt under provisions of the Government Code, or b) the public interest in nondisclosure of these particular facts clearly outweighs the public interest in disclosure.

What Happens If a New or Repeated Application Is Incomplete

Applications that have been docketed will be reviewed by Energy Commission staff within 30 calendar days of receipt for clarity, completeness, content, and context. If the application is incomplete or ambiguous in one or more respects, or if the data are incomplete or questionable, staff will contact the filer to resolve these uncertainties or obtain needed information.

Applications deemed incomplete may not be docketed by Energy Commission staff and may result in delay in processing until the deficiency can be corrected. The filer will be notified by the Office of the Chief Counsel about deficient attributes in the application. The applicant has 14 calendar days to correct defects in the application and return an amended application to the Energy Commission.

After 14 days, all information associated with a still–incomplete application for confidentiality will be deemed publicly disclosable and will be docketed accordingly.

Determinations and Additional Information for New Applications

The Executive Director signs confidentiality determination letters in response to new applications for confidentiality. The applicant has 14 calendar days to appeal this decision.

An applicant can request confidentiality at any time, but once information is publicly released, confidentiality cannot be granted. The Energy Commission strongly encourages filers to provide data and any confidentiality requests concurrently.

More specific questions about confidentiality may be directed to ~~Michelle Chester at (916) 654-4701 or to~~ Jared Babula at Jared.Babula@energy.ca.gov or (916) 654-3843.

APPENDIX D:
Data and Assumptions

The following tools have been developed to aid in planning decisions and will be made available for optional use by POUs during their planning processes. Additional tools may be developed by Energy Commission staff. Tools and other aids will be posted on the following Web page.

http://www.energy.ca.gov/sb350/IRPs/

1. Light-Duty Plug-in Electric Vehicle Calculator

Staff is developing a spreadsheet based-tool to assist the Filing POUs in developing estimates of the net GHG emissions reductions associated with LD PEV deployment. POU-provided estimates of the number and composition of LD PEVs deployed each year over the planning period and the emissions intensity (mt CO_2e/MWh) of incremental electricity generation are used to produce estimates of GHG emissions reductions on the transportation side and emissions increases from the electricity sector. The tool incorporates jointly-developed (by Energy Commission and CARB staff) assumptions regarding gasoline-powered and LD PEV characteristics and operation to ensure that utility estimates of net emissions savings are reasonable and consistent.

2. Climate Change Adaptation – Cal-Adapt

The Cal-Adapt tool is an interactive Web-based climate adaptation planning tool used to identify potential climate change impacts. Using data compiled on an ongoing basis from California's scientific and research community, it allows users to see possible effects on temperature change, snowpack, precipitation, fire risk, and sea level rise downscaled to California's geography. The Cal-Adapt tool includes visualization tools and climate data to enable exploration of local risks related to climate change. The Cal-Adapt tool makes climate science readily accessible to those who need to understand local impacts of, and plan for, climate change.

The Energy Commission is rolling out Cal-Adapt 2.0 (publicly available at beta.cal-adapt.org), which offers substantial enhancements to the original version. Enhancements include improved fidelity regarding projected temperature extremes as well as spatial distribution of precipitation, an applications programming interface that supports third-party development of custom tools that leverage data on Cal-Adapt, alignment with the current scenarios and global climate models used by the International Panel on Climate Change, and the capability to visualize and analyze several preloaded shape files (for example, census tracts tagged with CalEnviroScreen scores, watersheds, and counties) or a user-specified shape file.

3. Carbon Allowance Price Projections

Energy Commission staff developed annual GHG allowance price projection scenarios consistent with the scenarios used in the *California Energy Demand Forecasts*. The methodology used to develop the preliminary *2017 IEPR* GHG price projections is based on CARB's August 2, 2016, Proposed Amendments to the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation. The methodology is described in the footnotes on the GHG Price Calculations tab of this spreadsheet.

The spreadsheet is here:
http://docketpublic.energy.ca.gov/PublicDocuments/17-IEPR-03/TN216271_20170227T161611_Preliminary_GHG_Price_Projections__Energy_Assessment_Division.xlsx

Standardized Reporting Tables
for Publicly Owned Utility IRP Filing
California Energy Commission
Energy Assessment Division

POUs must submit the following four Standardized Tables to the Energy Commission as part of the IRP Filing. The Energy Commission encourages POUs to submit data for multiple scenarios, though POUs are only required to submit data for one scenario that meets the requirements of PUC Section 9621. Annual data must be reported in the Standardized Tables through the planning horizon.

Instructions for filling out the tables are in Appendix B Standardized Reporting Tables

Description of Worksheet Tabs

Admin Info: A listing of contact information of the tables' preparer with information for any back-up personnel.

CRAT: Capacity Resource Accounting Table (CRAT): Annual peak capacity demand in each year and the contribution of each energy resource (capacity) in the POU's portfolio to meet that demand.

EBT: Energy Balance Table (EBT): Annual total energy demand and annual estimates for energy supply from various resources.

GEAT: GHG Emissions Accounting Table (GEAT): Annual GHG emissions associated with each resource in the POU's portfolio to demonstrate compliance with the GHG emissions reduction targets established by CARB.

RPT: Resource Procurement Table (RPT): A detailed summary of a POU resource plan to meet the RPS requirements.

State of California
California Energy Commission

Standardized Reporting Tables for Public Owned Utility IRP Filing

Administrative Information

Form CEC 113 (May 2017)

Name of Publicly Owned Utility ("POU")	POU Name on Admin Tab
Name of Resource Planning Coordinator	
Name of Scenario	

Persons who prepared Tables	**CRAT**	**Energy Balance Table**	**Emissions Table**	**RPS Table**	**Application for Confidentiality**
Name:					
Title:					
E-mail:					
Telephone:					
Address:					
Address 2:					
City:					
State:	CA	CA	CA	CA	CA
Zip:					
Date Completed:					
Date Updated:					

Back-up / Additional Contact Persons for Questions about these Tables (Optional):

Name:					
Title:					
E-mail:					
Telephone:					
Address:					
Address 2:					
City:					
State:					
Zip:					

State of California
California Energy Commission
Standardized Reporting Tables for Public Owned Utility IRP Filing
Capacity Resource Accounting Table
Form CEC 109 (May 2017)

Scenario Name:

Yellow fill relates to an application for confidentiality.
Data input by User are in dark green font.

Units = MW

PEAK LOAD CALCULATIONS

		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1	Forecast Total Peak-Hour 1-in-2 Demand														
2	[Customer-side solar: nameplate capacity]														
2a	[Customer-side solar: peak hour output]														
3	[Peak load reduction due to thermal energy storage]														
4	[Light Duty PEV consumption in peak hour]														
5	Additional Achievable Energy Efficiency Savings on Peak														
6	Demand Response / Interruptible Programs on Peak														
7	**Peak Demand (accounting for demand response and AAEE) (1-5-6)**			0	0	0	0	0	0	0	0	0	0	0	0
8	Planning Reserve Margin														
9	Firm Sales Obligations														
10	**Total Peak Procurement Requirement (7+8+9)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EXISTING AND PLANNED CAPACITY SUPPLY RESOURCES

Utility-Owned Generation and Storage (not RPS-eligible):
For fuel type, choose from list or enter value

	[list resource by name]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
11a																
11b																
11c																
11d																
11e																
11f																
11g																

Long-Term Contracts (not RPS-eligible):

	[list contracts by name]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
11h																
11i																
11j																
11k																
11l																
11m																
11n																
11	**Total peak dependable capacity of existing and planned supply resources (not RPS-eligible) (sum of 11a…11n)**		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Utility-Owned RPS-eligible Resources:

	[list resource by plant or unit]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
12a																
12b																
12c																
12d																
12e																
12f																
12g																
12h																
12i																
12j																
12k																
12l																
12m																
12n																

Long-Term Contracts (RPS-eligible):

	[list contracts by name]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
12o																
12p																
12q																
12r																
12s																
12t																
12	**Total peak dependable capacity of existing and planned RPS-eligible resources (sum of 12a…12t)**		0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	**Total peak dependable capacity of existing and planned supply resources (11+12)**		0	0	0	0	0	0	0	0	0	0	0	0	0	0

GENERIC ADDITIONS

NON-RPS ELIGIBLE RESOURCES:

	[list resource by name or description]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
14a																
14b																
14c																
14d																
14e																
14f																
14g																
14h																
14i																
14j																
14k																
14l																
14m																
14n																
14	**Total peak dependable capacity of generic supply resources (not RPS-eligible)**		0	0	0	0	0	0	0	0	0	0	0	0	0	0

RPS-ELIGIBLE RESOURCES:

	[list resource by name or description]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
15a																
15b																
15c																
15d																
15e																
15f																
15g																
15h																
15i																
15j																
15k																
15l																
15m																
15n																
15	**Total peak dependable capacity of generic RPS-eligible resources**				0	0	0	0	0	0	0	0	0	0	0	0
16	**Total peak dependable capacity of generic supply resources (14+15)**				0	0	0	0	0	0	0	0	0	0	0	0

CAPACITY BALANCE SUMMARY

		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
17	**Total peak procurement requirement (from line 10)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	**Total peak dependable capacity of existing and planned supply resources (from line 13)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	**Current capacity surplus (shortfall) (18-17)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	**Total peak dependable capacity of generic supply resources (from line 16)**			0	0	0	0	0	0	0	0	0	0	0	0
21	**Planned capacity surplus/shortfall (shortfalls assumed to be met with short-term capacity purchases) (19+20)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0

State of California
California Energy Commission
Standardized Reporting Tables for Public Owned Utility IRP Filing

Energy Balance Table
Form CEC 110 (May 2017)

Scenario Name:

Units = MWh

Yellow fill relates to an application for confidentiality.

Historical Data

	NET ENERGY FOR LOAD CALCULATIONS	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
1	Retail sales to end-use customers														
2	Other loads														
3	Net energy for load														
4	Retail sales to end-use customers (accounting for AAEE impacts)														
5	Net energy for load (accounting for AAEE impacts)														
6	Firm Sales Obligations														
7	**Total net energy for load (accounting for AAEE impacts) (5+6)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8	[Customer-side solar generation]														
9	[Light Duty PEV electricity consumption/procurement requirement]														
10	[Other transportation electricity consumption/procurement requirement]														
11	[Other electrification/fuel substitution; consumption/procurement requirement]														

EXISTING AND PLANNED GENERATION RESOURCES

Utility-Owned Generation Resources (not RPS-eligible):

	[list resource by name]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
12a		0														
12b		0														
12c		0														
12d		0														
12e		0														
12f		0														
12g		0														

Long-Term Contracts (not RPS-eligible):

	[list contracts by name]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
12h		0														
12i		0														
12j		0														
12k		0														
12l		0														
12m		0														
12n		0														
12	**Total energy from existing and planned supply resources (not RPS-eligible) (sum of 12a…12n)**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Utility-Owned RPS-eligible Generation Resources:

	[list resource by plant or unit]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
13a		0														
13b		0														
13c		0														
13d		0														
13e		0														
13f		0														
13g		0														
13h		0														
13i		0														
13j		0														
13k		0														
13l		0														
13m		0														
13n		0														

Long-Term Contracts (RPS-eligible):

	[list contracts by name]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
13o		0														
13p		0														
13q		0														
13r		0														
13s		0														
13t		0														
13	**Total energy from RPS-eligible resources (sum of 13a…13t, and 13z)**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
13z	**Undelivered RPS energy**															
14	**Total energy from existing and planned supply resources (12+13)**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

GENERIC ADDITIONS

NON-RPS ELIGIBLE RESOURCES:

	[list resource by name or description]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
15a		0														
15b		0														
15c		0														
15d		0														
15e		0														
15f		0														
15g		0														
15h		0														
15i		0														
15j		0														
15k		0														
15l		0														
15m		0														
15n		0														
15	**Total energy from generic supply resources (not RPS-eligible)**				**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

RPS-ELIGIBLE RESOURCES:

	[list resource by name or description]	Fuel type	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
16a		0														
16b		0														
16c		0														
16d		0														
16e		0														
16f		0														
16g		0														
16h		0														
16i		0														
16j		0														
16k		0														
16l		0														
16m		0														
16n		0														
16	**Total energy from generic RPS-eligible resources**				**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
17	**Total energy from generic supply resources (15+16)**				**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
17z	**Total energy from RPS-eligible short-term contracts**															

ENERGY FROM SHORT-TERM PURCHASES

		2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
18	**Short term and spot market purchases:**														

ENERGY BALANCE SUMMARY

		2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
19	**Total energy from supply resources (14+17+17z)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
19a	**Undelivered RPS energy (from 13z)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
20	**Short term and spot market purchases (from 18)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
21	**Total delivered energy (19-19a+20)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
22	**Total net energy for load (from 7)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
23	**Surplus/Shortfall (21-22)**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

State of California
California Energy Commission
Standardized Reporting Tables for Public Owned Utility IRP Filing

GHG Emissions Accounting Table

Form CEC 111 (May 2017)

Scenario Name:

Yellow fill relates to an application for confidentiality.

Emissions Intensity Units = mt CO2e/MWh
Yearly Emissions Total Units = Mmt CO2e

GHG EMISSIONS FROM EXISTING AND PLANNED SUPPLY RESOURCES

Utility-Owned Generation (not RPS-eligible):

	[list resource by name]	Emissions Intensity	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1a																
1b																
1c																
1d																
1e																
1f																
1g																

Long-Term Contracts (not RPS-eligible):

	[list contracts by name]	Emissions Intensity	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1h																
1i																
1j																
1k																
1l																
1m																
1n																
1	**Total GHG emissions of existing and planned supply resources (not RPS-eligible) (sum of 1a…1n)**		0	0	0	0	0	0	0	0	0	0	0	0	0	0

Utility-Owned RPS-eligible Generation Resources:

	[list resource by plant or unit]	Emissions Intensity	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2a																
2b																
2c																
2d																
2e																
2f																
2g																
2h																
2i																
2j																
2k																
2l																
2m																
2n																

Long-Term Contracts (RPS-eligible):

	[list contracts by name]	Emissions Intensity	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2o																
2p																
sq																
2r																
2s																
2t																
2	**Total GHG emissions from RPS-eligible resources (sum of 2a…2t)**		0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	**Total GHG emissions from existing and planned supply resources (1+2)**		0	0	0	0	0	0	0	0	0	0	0	0	0	0

EMISSIONS FROM GENERIC ADDITIONS

NON-RPS ELIGIBLE RESOURCES:

	[list resource by name or description]	Emissions Intensity	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
4a																
4b																
4c																
4d																
4e																
4f																
4g																
4h																
4i																
4j																
4k																
4l																
4m																
4n																
4	**Total GHG emissions from generic supply resources (not RPS-eligible)**		0	0	0	0	0	0	0	0	0	0	0	0	0	0

RPS-ELIGIBLE RESOURCES:

	[list resource by name or description]	Emissions Intensity	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
5a																
5b																
5c																
5d																
5e																
5f																
5g																
5h																
5i																
5j																
5k																
5l																
5m																
5n																
5	**Total GHG emissions from generic RPS-eligible resources**		0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	**Total GHG emissions from generic supply resources (4+5)**		0	0	0	0	0	0	0	0	0	0	0	0	0	0

GHG EMISSIONS OF SHORT TERM PURCHASES

		Emissions Intensity	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
7	**Short term and spot market purchases:**	0.428	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TOTAL GHG EMISSIONS

		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
8	**Total GHG emissions to meet net energy for load (3+6+7)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EMISSIONS ADJUSTMENTS

8a	**Undelivered RPS energy (MWh from EBT)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8b	**Firm Sales Obligations (MWh from EBT)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8c	**Total energy for emissions adjustment (8a+8b)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8d	**Emissions intensity (portfolio gas/short-term and spot market purchases)**														
8e	**Emissions adjustment (8Cx8D)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PORTFOLIO GHG EMISSIONS

8f	**Adjusted Portfolio emissions (8-8e)**	0	0	0	0	0	0	0	0	0	0	0	0	0	0

GHG EMISSIONS IMPACT OF TRANSPORTATION ELECTRIFICATION

		2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
9	**GHG emissions reduction due to gasoline vehicle displacement by LD PEVs**														
10	**GHG emissions increase due to LD PEV electricity loads**														
11	**GHG emissions reduction due to fuel displacement - other transportation electrification**														
12	**GHG emissions increase due to increased electricity loads - other transportation electrification**														

State of California
California Energy Commission
Standardized Reporting Tables for Public Owned Utility IRP Filing
RPS Procurement Table
Form CEC 112 (May 2017)

Scenario Name:

		Beginning Start of 2017	Units = MWh														
			Compliance Period 3					Compliance Period 4					Compliance Period 5				Compliance Period 6		
	RPS ENERGY REQUIREMENT CALCULATIONS		**2017**	**2018**	**2019**	**2020**		**2021**	**2022**	**2023**	**2024**		**2025**	**2026**	**2027**		**2028**	**2029**	**2030**
1	Annual Retail sales to end-use customers (accounting for AAEE impacts) (From EBT)		0	0	0	0		0	0	0	0		0	0	0		0	0	0
2	Green pricing program Exclusion, (may include other exclusions like self generation exclusion)																		
3	Soft target (%)		27.00%	29.00%	31.00%	33.00%		34.75%	36.50%	38.25%	40.00%		41.67%	43.33%	45.00%		46.67%	48.33%	50.00%
4	Required procurement for compliance period		0					0					0				0		
	Category 0, 1 and 2 Resources (bundled with RECs)																		
5	Excess balance at beginning/end of compliance period						0					0				0			0
6	RPS-eligible energy procured (copied from EBT)		0	0	0	0		0	0	0	0		0	0	0		0	0	0
6A	Amount of energy applied to procurement obligation																		
7	Net purchases of Category 0, 1 and 2 RECs																		
7A	Carryover and REC purchases applied to procurement obligation																		
8	Net change in balance/carryover (RECs and RPS-eligible energy) (6+7-6A-7A)		0	0	0	0		0	0	0	0		0	0	0		0	0	0
	Category 3 Resources (unbundled RECs)																		
9	Excess balance at beginning/end of compliance period						0					0				0			0
10	Net purchases of Category 3 RECs																		
11	Excess balance and REC purchases applied to procurement obligation																		
12	Net change in REC balance		0	0	0	0		0	0	0	0		0	0	0		0	0	0
13	Total generation plus RECs (all Categories) applied to procurement requirement (6A + 7A + 11)		0					0					0				0		
14	Over/under procurement for compliance period (13 - 4)		0					0					0				0		

RESOLUTION NO: 18-0801-9

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION – RE: ADOPTING AMENDED IINTEGRATED
RESOURCE PLAN GUIDELINES

WHEREAS, Public Utilities Code Sections 9621 and 9622 require specified local publicly owned electric utilities to adopt integrated resource plans at least once every five years and submit them to the California Energy Commission; and

WHEREAS, Public Utilities Code Section 9622 requires that the California Energy Commission review the local publicly owned electric utilities' integrated resource plans for consistency with the requirements of Section 9621, and to provide recommendations to correct deficiencies; and

WHEREAS, Public Utilities Code Section 9622 authorizes the California Energy Commission to develop guidelines to govern the submission of information and data and reports needed to support the Commission's review of local publicly owned electric utilities' integrated resource plans; and

WHEREAS, on August 9, 2017, after receiving and considering public comment, the California Energy Commission adopted the Publicly *Owned Utility Integrated Resource Plan Submission and Review Guidelines*; and

WHEREAS, in the Spring of 2018, the California Energy Commission staff proposed changes to the adopted *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines*; and

WHEREAS, the California Energy Commission staff conducted a webinar on May 8, 2018 to discuss the staff proposed changes to the adopted *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines* and to receive public comment, and subsequently received additional written public comment on the staff proposed changes to the *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines*; and

WHEREAS, California Energy Commission has considered the application of the California Environmental Quality Act (CEQA) to the adoption of staff proposed changes to the *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines* and concluded that their adoption is not a "project" under CEQA, but in the event that adoption were determined to be a project, that it would nonetheless be exempt from CEQA requirements pursuant to the "common sense" exemption (CEQA Guidelines, § 15061, section (b)(3)); and

WHEREAS, the California Energy Commission accepts and approves the staff proposed changes to the *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines* along with any additional changes identified at its August 1, 2018 Business Meeting; and

WHEREAS, judicial review of this Resolution is governed by Public Resources Code, section 25901;

THEREFORE BE IT RESOLVED, the California Energy Commission hereby adopts the staff proposed changes to the *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines* and directs California Energy Commission staff incorporate the changes into the *Publicly Owned Utility Integrated Resource Plan Submission and Review Guidelines*, incorporating any additional changes identified at the August 1, 2018 Business Meeting along with any non-substantive changes such as typographical corrections, to make the document available to the public, and to administer the receipt and review of integrated resource plans as specified in the guidelines.

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted at a meeting of the California Energy Commission held on August 1, 2018.

AYE:
NAY:
ABSENT:
ABSTAIN:

Cody Goldthrite
Secretariat