Integrated Resource Planning (R.20-05-003)
2020 IRP Filings

Filing Requirements' Questions and Answers

This document is a reference guide for LSEs required to file Plans in the IRP process. It provides clarifying instructions on how to fulfill the LSE Plan requirements detailed in Decision (D.) 18-02-018, D.19-11-016, and D.20-03-028. The questions included in this document reflect some of the questions IRP staff has received from various LSEs through emails, during the webinar on Filing Requirements' Templates (January 16, 2020), and multiple office hours held by staff. Staff has documented and shared the questions and answers to ensure all LSE Plans are developed in a consistent and comprehensive manner.

This will serve as a living document. IRP staff will continue to update this document until the September 1 filing deadline with added guidance for LSEs as new questions arise. All updates will be posted to the IRP Filing Materials webpage.

Note: Questions marked with an asterisk (*) are the new/updated ones comparing to the previous version of this document posted in June 15, 2020.

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List of Questions

Narrative Template and General Guidance

1- What are the differences between Standard Plan vs. Alternative Plan? Could smaller LSEs still file an alternative plan (LSEs smaller than a certain size)?

2- What is expected, in general from LSE plans filed in 2020, with context from the 2017-18 IRP cycle?

3- Can an LSE submit an IRP which includes a Conforming Portfolio using a lower GHG target than the GHG target assigned by Energy Division?

4- Why were the reliability assessments (local, system, and/or flex reliability) excluded from the LSE Plan filing requirements?

5- Can LSEs use updated baseline generation fleet information in their Conforming Portfolios that includes recently procured resources or other updated baseline information?

6- Will LSEs be allowed to update the adopted 2019 IEPR forecast or ESP RA load forecasts to reflect recent CCA load departure or ESP load growth that is not reflected in those forecasts?

7- Does Energy Division still anticipate the CEC to adopt the 2019 IEPR at the January 22 CEC business meeting as noted in the December 26 Narrative Template or will it likely be adopted at the subsequent February 20 meeting?

8- Will LSEs be allowed to use the draft IEPR forecast in their IRPs or are they required to use the final adopted IEPR forecast?

9- What assumptions for departing load should be used by all LSEs to allocate costs and resources? Should all LSEs apply existing PCIA rules?

10- D.18-02-018 requires that for long-term contracting, outreach is described. Can this be included within the template?

11- Does the requirement to identify customers in disadvantaged communities include only residential customers or both residential and non-residential customers? If non-residential customers are included, are there any differences to the requirements for such customers? If so, how do the requirements differ?

12- Does the requirement to identify "total disadvantaged population number" refer to a count of customer accounts or total residential population in a community or something else?

13- How are the planning standards incorporated in the filing requirements' templates?

14- What is the cut-off date to apply when categorizing each resource's Contract Status?

15- Why is the 2020 load forecast for each ESP held static through 2030, when this is not the case for CCAs and IOUs? If an ESP's load is held flat between 2020 and 2030, does this mean that the ESP's supply is held flat between 2020 and 2030 as well?

16- Is there a separate template (or specific instructions) for the Conforming Portfolio/Preferred Portfolio? Is the Conforming Portfolio/Preferred Portfolio included in (or derived from) the Resource Data Template?

17- In the Narrative Template, under "Required Portfolios," each LSE should account for the costs and benefits of any resources subject to the CAM in its Conforming Portfolio. An ESP has no control over the costs or benefits of resources subject to CAM. How is an ESP to address this issue?

18- For each section of the narrative template (e.g. both Study Design and Study Results) can LSEs provide information on all portfolios (conforming and non-conforming) developed?

19- Where can we find the detailed resource breakdown of the RSP adopted in the proposed decision? Tables 5 and 6 of the PD show aggregate resource categories (e.g., "Wind"), and we would like to see the detailed resource types per the classifications in the Resource Data Template (e.g., "Carrizo_Wind").

20- Summing the Day Weights by Hydro Conditions from the same Table 47 suggests that the hydro year is based on 75, 86 and 205 days for Low, Mid and High Hydro Conditions, respectively. Can ED clarify why the hydro year is so unevenly weighted (56%) on High Hydro Condition days?

21- Out of the 198 units given a RESOLVE resource tag of "CAISO_Hydro", 145 appear to have a nameplate capacity of less than 30 MW. These units appear to be what is counted toward the 7070 MW of "Large Hydro" in the results viewer. Can ED clarify if these small units are being modelled as large hydro and if so explain the rationale?

22- Although PCIA impacts to load were addressed in the Q&A's, the impact to resources were not explicitly addressed. LSEs are expecting an allocation of RPS and carbon-free resources from IOUs from PCIA. We intend to include our anticipated allocations in our IRP portfolio characterized in the Clean System Power template. Does this cause any concerns for Energy Division?

23- Questions related to the QC values for renewables throughout 2030 :

24- Table 47 RESOLVE's 37 days and associated weights (2019-20 Inputs and Assumptions, 2/27/2020) lists 4/25/2009 for both days 33 and 34. These duplicate days are apparently mapped to low and high hydro conditions with different day weightings. What are the correct RESOLVE day references for days 33 and 34?

25- Could an alternative portfolio be submitted as an LSE's preferred portfolio?

26- *How should LSEs that are not self-providing to meet obligations under D.19-11-019 account for procurement occurring on their behalf in their Plans?

27- If a Preferred Portfolio for the 46MMT target also meets our benchmark for the 38MMT target, can the same portfolio be submitted under both scenarios? Or are there underlying differences between the two targets that would necessitate separate model runs on our end?

28- What are the guidelines for LSEs to address their "fair share of reliability and renewable integration/ramping needs associated with the resources they select" in their IRP filings? Would one adequate method for an LSE to address this requirement be to report its portfolio's contribution to

the LSE's system and flexible RA requirements throughout the planning horizon (holding today's requirements and resource capacity counting methodologies constant through 2030)?

29- Should RA obligations, for the purposes of the IRP, be assumed to remain constant through the planning period?

30- How should LSEs demonstrate that their portfolios do not assume reliability, renewable integration, and ramping needs associated with their portfolios will be met by resources in the portfolios of other LSEs?

31- What are the expectations from Energy Division Staff of the IOU's IRP plans and the IRP reliability track procurement for the loads that had not departed at the time of the Decision (D.19-11-016) but will depart starting in 2021?

32- Can an LSE receiving carbon free resources from PG&E under Resolution E-5046 count those resources in its IRP?

33- *Are LSEs required to have long-duration storage assets in their portfolio in 2026?

34- * Many CCAs may end up with higher than their "share" of renewable procurement in the RSP and 38 MMT cases due to difficulty contracting with existing hydro or other constraints. In other words, the pro rata share of new resources will not align with LSEs' portfolios unless baseline resources are distributed in the same manner. Can the CPUC confirm LSEs will not be penalized for showing conforming portfolios that exceed their slice of the RSP and 38 MMT portfolios?

35- *What criteria will be used to evaluate portfolio reliability? Are LSE filings required to demonstrate sufficient system RA to meet their requirements and if so, how far into the future? If not, what threshold will be used to determine if portfolios are reliable "enough" and will this be applied only in 2030 or the horizon?

36- *Given that LSEs balance both long-term and short-term contracting, and adjust their short-term procurement as RA obligations change, some LSEs may plan to purchase RA in the short term from existing generators as obligations are issued. How should planned but not yet contracted RA with existing generators be reported? Given the abovementioned balance and the impact of CPUC's RA program parameters on the RA market, would 50% of an LSEs annual system RA obligation being shown as under contract throughout the IRP planning horizon be deemed adequate?

37- *Are RA-only contracts allowed to meet the RA requirement? If so, how much will be allowed?

38- *In the Narrative Template, under "System Reliability Analysis", LSEs are asked to include the System Reliability Progress Tracking tables from the Resource Data Template, and are told we can keep confidential the one line in the table for peak load. I don't believe that this sufficiently keeps peak load confidential—if LSEs are meeting their requirement, the resources that are listed on that table could be simply summed up and the PRM backed out to calculate an LSE's peak load. Because of this, we planned to put the Tracking Tables in a Confidential Appendix. Please let us know if you would prefer an alternative to keeping this data confidential so our peak load cannot be simply calculated by adding up our resource selections.

Filing Requirements' Questions and Answers

39- *The revised IRP template allows different GHG targets to be used by LSEs for their preferred conforming portfolios (46 MMT, 38 MMT or below 38 MMT), which will then be aggregated into a single PSP portfolio. It is not clear whether combining portfolios with differing GHG targets would produce a meaningful and equitable PSP. For example, if an LSE opts for a GHG target lower than 38 MMT (e.g. in the extreme 0 MMT), that portfolio may lean on the system for more than their share of ancillary services such as ramping, which in turn may cause a share of the new ramping requirement to fall on LSEs with a higher GHG target.

40- *In accordance with the revised filing requirements, LSEs opting for a GHG target below 38 MMT will be required to provide additional explanations about how their preferred portfolio might operate differently from a reliability perspective. What type of information should be expected to be provided in the explanation and how will that information inform EDs judgement of the adequacy of the IRP?

41- *Would it be possible to use the Resource Data Template to consider load changes over time? The reliability methodology in the filing requirements assumes load share is consistent for the planning horizon.

42- *The Filing Requirements Documents state that LSEs can use their own financing assumptions or the CAISO transmission financial assumptions, whichever is believed to be the most appropriate. How is that information being communicated to all LSEs?

43- * Please clarify that the total CAISO load did not change between the April 15, 2020 ruling and May 20, 2020 update of the ALJs Ruling Finalizing Load Forecasts and Greenhouse gas benchmarks for individual 2020 IRP filings. Also, is the total load in the update the same as the IEPR "mid-baseline mid AAEE" version from IEPR Form 1.1c?

44- *The Narrative Template requires each LSE to report "total disadvantaged population number served as a percentage of total number of customers served". For an ESP that serves only commercial load, how would this requirement be met?

45- *Do we enter RA for new CCAs into the Resource Data Template when the incumbent IOU has agreed to provide the RA for the new CCA for an interim period? For instance, SCE has an agreement with Desert Community Energy (DCE) to provide DCE's RA for 2020. If so, do we enter it as seller's choice? If not, what category is best?

46- *Some LSEs will not have much, if any, RA procured through long-term contracts at the time the LSE files its 2020 IRP. Such LSEs may expect to procure RA through long-term contracts jointly with energy from renewable and storage resources. Such expected purchases will be entered into the Resource Data Template. However, if an LSE is expecting to use short-term RA purchases for meeting its RA obligation, is an LSE obligated to forecast such short-term RA purchases by resource type and enter them into the Resource Data Template out to 2030? Or can LSEs just enter current short-term RA contracts and let the Resource Data Template be left short on RA in the out years?

47- *For new CCAs that do not have a 2021 RA allocation, what should be entered as the September 2021 RA allocation for purposes of the Resource Data Template?

48- *Clarifying and updated guidance on the Cost and Rate Analysis (Narrative Template, Section e), Requirements for IOUs Only:

Resource Data Template

1- How do the proposed filing requirements and resource data template prevent the aggregated LSE IRP plans from exceeding the maximum amount of existing resources available to LSEs if LSEs use 'generic existing resources' in their respective individual plans?

2- What delivery term should be included?

3- *How should contracted sales be entered?

4- Should LSEs update the Resource Data Template to reflect their actual contracts?

5- Inland Empire and Sutter Energy Center (Row 2430) do not appear to be incremental for D. 19-11-016 in contrast to the decision. Is this an error?

6- Questions related to the 'Monthly_gwh_mw' tab:

7- Question related to the Column K "max_mw":

8- How the "dashboard" tab is to be completed?

9- Why are the incremental tabulations defaulted to the month of August? The procurement track specified September capacity, so should LSEs switch to September when evaluating incremental NQC vs. what was ordered?

10- Are the calculations in this spreadsheet representative of how the PUC will be evaluating compliance with the procurement order? Specifically, will the entire NQC of a new battery added to an existing baseline resource count as incremental, or will there be adjustments to account for the loss of capacity for the existing baseline resource?

11- *Should all sales by the LSE be listed as a "transfer_sale" or just those involving other LSE's named on the "lse_names" sheet?

12- For planned resources with CODs before 2027 without locational data provided for the 'new' supertype, which resource name should LSEs select? The generic CAISO resource names are only available for new facilities with CODs starting January 1, 2027. Are LSEs able to choose 'Generic New' resource supertypes for resources that are planned to come online before 2027?

13- Are LSEs required to include all currently shortlisted projects as under review, even if plans are to only contract with a subset of those contracts?

14- In the caiso_interconnection_queue tab, what is the difference between N/A (Project not in queue) and TBD (To be determined)?

15- What does Energy Division plan to do with the information about a resource's CAISO queue position?

16- Questions related to CAM resources:

17- *In the "estimate_system_ra_requirement" tab it asks for "Please input your LSE's 2021 System RA allocation, NQC MW here. This will be kept confidential." LSEs have not received their 2021 System RA allocation yet. What should be entered here?

18- *For purposes of populating the template, does the CPUC distinguish between a co-located solar+storage resource (two resource IDs) and a hybrid? If we are contracting with a co-located resource, should we treat it as a hybrid for purposes of populating the template?

19- *Under what circumstances should we use "transfer_purchase" as the resource? If we are purchasing energy or capacity from another LSE, but we know it is from a specific CAISO resource, should we put in that resource? Or since we are contracting from another LSE vs. directly with the supplier, is this a "transfer_purchase"?

20- *For energy-only import contracts, is it okay to populate the max_mw field with zero? There is no way to estimate the max_mw associated with energy that is provided from a pool of possible resources, and we are not contracting for any capacity anyhow.

21- *We have capacity contracts for two CAISO resources that are new, but not in the "resources" tab. They are GATEWY_2_GESBT1 and WSTWND_2_M90WD2. Should we enter them in as the resource even though they are not on the tab (but are online), or should we use one of the RESOLVE types (New_Li_Battery for these two)?

22- *We've followed the instructions to enter any sales to other LSEs as "transfer_sale" in the template with positive values. However, we've noticed that the "dashboard" tab actually adds these as "unknown" ELCC instead of subtracting them, greatly inflating the supply reflected in the calculation vs. our load. Is there an additional step we need to take to make the dashboard calculation incorporate the correct impact of these sales?

23- *In the Resource Data Template, how should a resource be entered which is partially operational but not in the list of operating resources in the Resources tab? Should this be listed as a "new_resolve" type resource or an "existing_generic" resource? What should be entered for column I (contract_status) and should the calculation in column N (currently_online) be overwritten as 1?

24- *For new resources that are not on-line but are under contract, should these all be entered as "new_resolve" resources in the Resource Data Template?

25- *Are the only resources that can be entered as "physical" in the Resource Data Template those that match the resource names in the "resources" tab?

26- *Does an LSE have to identify the existing resource when using planned_existing for contract_status?

27- *Are the transfer_sale and transfer_purchase categories only for energy or also for RA?

28- *How do I enter RA sales as positive values when they should not be added to the purchases for purposes of the RA tracking table? If I enter a "transfer_sale" as a positive value, per the prior instructions, the sale volume is added to purchase volumes in the RA for the tracking table, which is incorrect. For example, if I have two transactions, a purchase of 5 MW of RA and a sale of 5 MW of

RA, the net would be zero. But in the tracking table it would be 10 MW because both are entered as 5 MW. How do I get the tracking table to accurately reflect the sales volumes?

29- *If entering a sale of energy or capacity from a specific resource, do we enter "transfer_sale" in the "resource" column and put the resource ID in the "notes" column?

30- *What is the updated instruction on how to use "transfer_purchase", "transfer_sale", and "sellers_choice"?

31- *The capacity for my hybrid resource(s) is not showing up in the dashboard. Why is this?

32- * What should be entered in the "hybrid_can_charge_from_grid" column in the "unique_contracts" tab, when a hybrid resource is not charging from the grid in the first few years, but it will in the later years? The Resource Data Template only accept 0 or 1 for this column.

33- * There are some resources that the Resource Data Template incorrectly considers them as baseline or incremental. Please advise LSEs on this.

34- *Is there an additional, separate filing due on September 1, 2020 regarding the incremental system resource adequacy procurement (ordered by D.19-11-016) or the only compliance filing due on September 1st is the IRP compliance filing?

35- * All the contracts I've input as 'existing_generic' are showing up as incremental which is incorrect. What is the guidance to resolve this issue.

Clean System Power (CSP) Calculator

1- Does the calculator account for the emissions from spinning reserves and when units are operated at partial load?

2- How should LSEs enter hybrid resources into the CSP tool?

3- Can LSEs use specific actual emission factors for specific resources?

4- Is there a document describing the emissions factors used and the specific calculations and sources used to develop them?

5- Is there any way to separate emissions into air basins using the calculator and add more criteria pollutants from biomass resources?

6- Will the CSP Calculator include the ability to view more cost information from the LSEs?

7- What is the process for LSEs to ask questions on the final CSP tool?

8- Will the CSP provide options to customize battery storage inputs? For example, Will the CSP allow different durations beyond 4-and 8-hour to be input?

9- Will LSEs be able to set discharging hours?

10- In the Supply Inputs tab of the tool, if the GWh dropdown is selected in Column C, are the GWh to be entered in the pink rows or is this all accounted for in the custom profile below starting on row 50?

11- Do IEPR forecasts account for load departure in 2021 and 2022 due to the Direct Access lottery expansion?

12- How should users enter unspecified PCC 1 Energy Only contracts, or Seller's choice contracts?

13- When entering load figures, should ESPs enter retails sales or gross their sales up for T&D losses?

14- What load forecast for 2030 should ESPs use to calculate their GHG benchmark?

15- In what ways can LSEs deviate from form 1.1c of the IEPR for their demand forecasts. Can they customize load shape?

16- How does the CSP determine whether or not natural gas & unspecified imports is the marginal unit. In other words, what is the marginal unit methodology employed in the CSP tool?

17- Can LSEs enter custom inputs for the last 24 hours of 2020, which is a leap year? If so, can staff advise on how to input hours 8761-8784?

18- How is system power accounted for in the Supply Inputs?

19- Why do we get higher numbers when entering 2018 portfolios into the new calculator?

20- Questions related to the load profiles for input into the Clean System Power Calculator

21- CSP's emission profiles, supply profiles, and demand shapes changed from v1:

22- In reviewing the 46 MMT CSP and RESOLVE tools it appears that though the small hydro capacity is aligned (approximately 974 MW), the assumed energy from these units varies across the two models. In RESOLVE the annual energy from small hydro is 4,327 GWh while in the CSP it is 2,838 GWh. It would seem the inconsistency in assumed capacity factors would adversely impact the GHG positions of LSEs with small hydro in their portfolios relative to the RSP developed in RESOLVE. Please clarify.

23- *How should we interpret the managed load? We were under the impression that the managed load already includes the demand modifies. However, when that is entered into the CSP, why are additional demand modifiers being added again to the load? Is this double counting the demand modifiers?

24- *Is there any difference for CCAs as compared to a regular IOU as in how to enter the load? Should we plan to meet the "demand at generator at busbar" or the managed load?

25- *New guidance clarifying the role of BTM CHP emissions:

26- *In the 2018 CSP Calculator, there were different line items for EV Load Home and EV Load Home+Work (that reflected charging at C&I locations), while the 2020 CSP only has one assumption for EV charging based on an overall percent of load. Why was this change made to not separate residential and C&I charging? Much like allowing LSEs to modify their load shape to reflect more C&I or more residential load, assigning EV charging load to LSEs based on share of residential or C&I EV charging would be appropriate—if the majority of EV charging is at home, an LSE that is 100% C&I load should receive a lower proportion share of EV load. May an LSEs that has only C&I load change the EV load assumption in the Conforming case or only the Alternative?

Filing Requirements' Questions and Answers

27- *If an LSEs that has 100% C&I load and documentation of their losses being lower than what is assumed in the CSP (due to C&I customers off taking at higher voltages), can this be used to modify the Baseline Net Energy in the Conforming case or only the Alternative?

28- *If an LSE submits a Conforming case that does not meet its individual GHG target, but has an Alternative case that does meet the target and the assumptions used in the Alternative case is accepted by the Commission, will this filing be deemed compliant?

29- *The EV Load row has a default assumption for how much EV load is assigned to an LSE which appears to be just based on a load ratio share. The 2020 CSP lumps residential and workplace charging into the same row, where the 2018 CSP had separate line items for Residential EV Load and Workplace EV Load. ESPs will therefore be assigned pro rata portions of both Residential and Workplace EV charging load, which will overstate their EV load since they have no residential customers. My question is can this total amount of EV load be reduced in the Conforming portfolio to better represent actual ESP EV charging load?

30- *Why is system power much higher than it was in the 2018 cycle?

31- *How do you recommend that LSEs take into account the fact that System Power resources will include GHG-free resources that are not gas?

32- *Your direction in the question19 in this section, that only RA resources that have associated energy should be included in the CSP as Supply Resources. Should battery RA contracts be treated the same?

33- *Please provide the source of the criteria pollutant emissions intensities in the Clean System Power calculators and explain why the emissions intensities for Biogas-type resources are much greater than for dispatchable gas-type resources?

34- *How are LSEs meant to represent GHG/RPS attribute products in the clean system power calculator?

35- * The CSP tool reports higher emissions than Resolve for the same portfolio. This indicates that in aggregate, LSE portfolios may reflect additional carbon-free generation than the RSP and 38 MMT cases show. Can the CPUC confirm that this result will be considered acceptable, and if so to what amounts?

36- * Many LSEs have pursued RA-only contracts with natural gas plants as well as load hedge contracts (a financial instrument that is not part of the load-resource balance) that are based on system power. However, the CSP calculator currently focuses its emissions calculations for both GHGs and local air pollutants on energy contracts. Can Energy Division staff confirm whether and how they expect to see emissions from RA-only contracts and load hedge contracts included in an LSE's IRP?

Filing Requirements' Questions and Answers

Narrative Template and General Guidance

1- What are the differences between Standard Plan vs. Alternative Plan? Could smaller LSEs still file an alternative plan (LSEs smaller than a certain size)?

Per D.18-02-018 (p.127), in 2017-18 IRP, three plan types were permitted to be filed by CPUC-jurisdictional LSEs depending on LSE size/type:

1) Standard Plan: LSEs with load greater than 700 GWh/yr.
2) Alternative Type 1 Plan: Small IOUs, electric service providers, and community choice aggregators assigned a load of less than 700 GWh in California in each of the first five years of the IRP planning horizon.
3) Alternative Type 2: Multijurisdictional LSEs that submit IRPs in other jurisdictions, such as PacifiCorp

In 2019-20 IRP, it is proposed that the Alternative Type 1 Plan will no longer available for use by LSEs. Multijurisdictional LSEs that submit IRPs in other jurisdictions, such as Pacificorp, would be permitted to file a Non-Standard LSE Plan. All other LSEs would be required to file a Standard Plan in IRP if they serve load within the CAISO balancing authority area (unless the LSE demonstrates exemption from the IRP process). See Section 2.b of Filing Requirements Staff Proposal.

2- What is expected, in general from LSE plans filed in 2020, with context from the 2017-18 IRP cycle?

The filing templates already contain descriptions of what is expected from LSEs in each section. For context from the 2017-18 IRP cycle, D.19-04-040, Section 2.4, provides a review of each LSE plan filed in 2017-18 IRP, including scorecards.

3- Can an LSE submit an IRP which includes a Conforming Portfolio using a lower GHG target than the GHG target assigned by Energy Division?

A conforming portfolio for the 46 MMT GHG target needs to achieve emission equal to the LSE's proportional share of the 46 MMT GHG target, and a conforming portfolio for the 38 MMT GHG target needs to achieve emissions that are equal to or less than the LSE's proportional share of a 38 MMT target.

4- Why were the reliability assessments (local, system, and/or flex reliability) excluded from the LSE Plan filing requirements?

Staff considered party comments and found that establishing an upfront system reliability planning standard to determine compliance would be challenging. The capacity contribution assumptions that LSEs would need to make for their planned resources would be speculative

without seeing total aggregated resources. Accurately quantifying each LSE's share of CAISO system peak out to 2030 would also be challenging. Staff is still requesting information in the data template that will allow staff to do a quantitative reliability evaluation after aggregating portfolios and better understanding the ELCC of each resource type under that future. Furthermore, staff has added a "system reliability progress tracking table" that is automatically produced within the Resource Data Template using coarse capacity contribution assumptions. While not accurate enough to determine compliance or assess reliability, this table will offer some high-level visibility into how much each LSE's portfolio contains resources that contribute to reliability.

With regards to local reliability information, staff found during the 2018 LSE IRP plan review process that the information provided by LSEs in the narrative in regards to Local RA compliance did not provide any information incremental to that already obtained by the Resource Adequacy program.

5- Can LSEs use updated baseline generation fleet information in their Conforming Portfolios that includes recently procured resources or other updated baseline information?

The baseline resources should align with staff's definition in the Glossary of Terms in the narrative template. Detailed instructions for contract reporting can be found in the Resource Data Template. Also, see questions 2 and 4 in the "Resource Data Template" section.

6- Will LSEs be allowed to update the adopted 2019 IEPR forecast or ESP RA load forecasts to reflect recent CCA load departure or ESP load growth that is not reflected in those forecasts?

Pursuant to a Ruling issued by ALJ Fitch on January 24, 2020, there was a window of opportunity to update load forecasts for CCAs who may not be included in the 2019 IEPR or otherwise wish to update their IEPR forecast, and for ESPs who wish to deviate from their confidential year-ahead RA load forecasts. All non-IOU LSEs were permitted to file load forecast information that deviates from the IEPR (e.g., CCAs that have very recently expanded) or RA forecasts by February 28, and parties were allowed to respond in comments by March 13. Load forecast adjustments and GHG benchmarks for all LSEs were addressed in a subsequent ruling issued on April 15, 2020. Commission staff also confidentially communicated to each ESP its individual load forecast for purposes of their individual IRP filings after reviewing 2020 RA year-ahead forecasts that were due on April 20 and making adjustments needed to ensure that aggregated ESP loads equal the total direct access load for 2030 as forecasted by the CEC at 28,790 GWh.

7- Does Energy Division still anticipate the CEC to adopt the 2019 IEPR at the January 22 CEC business meeting as noted in the December 26 Narrative Template or will it likely be adopted at the subsequent February 20 meeting?

The CEC adopted the California Energy Demand (CED) 2019 along with any changes identified at its January 22, 2020 Business Meeting.[1]

8- Will LSEs be allowed to use the draft IEPR forecast in their IRPs or are they required to use the final adopted IEPR forecast?

LSEs should use the final adopted IEPR forecast. For the purposes of 2020 filings, this would be the CED 2019 adopted at the CEC's January 22, 2020 business meeting.[2]

9- What assumptions for departing load should be used by all LSEs to allocate costs and resources? Should all LSEs apply existing PCIA rules?

LSEs should not deviate from their assigned load forecast in preparing their proposed resource portfolios. LSEs may describe in their narrative (Study Results and Action Plan sections) how PCIA rules may affect their costs and planned resources.

10- D.18-02-018 requires that for long-term contracting, outreach is described. Can this be included within the template?

LSEs would enter this information in section III.a. (Study Results/Preferred and Conforming Portfolios), and in Section IV. Action Plan. No revision to the template necessary.

11- Does the requirement to identify customers in disadvantaged communities include only residential customers or both residential and non-residential customers? If non-residential customers are included, are there any differences to the requirements for such customers? If so, how do the requirements differ?

Each LSE should provide a qualitative description of the demographics of the DAC customers it serves, including both residential and non-residential customers. The finest level of granularity would be census tracts, but LSEs may summarize at the zip code level if that is all that is available to them. If census tracts granularity is not being used, LSEs must explain the reason for the level of granularity they are providing.

12- Does the requirement to identify "total disadvantaged population number" refer to a count of customer accounts or total residential population in a community or something else?

Total residential population in a community. If that granularity is not available, LSEs must explain the reason for the level of granularity they are providing.

13- How are the planning standards incorporated in the filing requirements' templates?

[1] https://ww2.energy.ca.gov/2019_energypolicy/documents/
[2] Ibid

The CSP tool provides calculations for some quantitative planning standards such as GHG emissions and local air pollutants. For other planning standards that are not specific outputs of the CSP tool, LSEs should look to the Narrative Template for instructions on how to provide that information.

With respect to system reliability, the Resource Data Template also calculates an estimated NQC value for an LSE's portfolio and compares it to an estimate of its share of peak demand, thus flagging any potential shortfalls.

14- What is the cut-off date to apply when categorizing each resource's Contract Status?

June 30, 2020. For example, for a resource for which there is an approved contract in place as at this date, the LSE would categorize the resource as "Development".

15- Why is the 2020 load forecast for each ESP held static through 2030, when this is not the case for CCAs and IOUs? If an ESP's load is held flat between 2020 and 2030, does this mean that the ESP's supply is held flat between 2020 and 2030 as well?

For most LSEs, load forecasts are sourced directly from the CEC's updated IEPR forecast. This is consistent with other efforts within IRP to have LSEs follow the CEC's forecast. For ESPs, because they generally do not have long-term load forecasts and are not individually included in the IEPR, their near-term loads are assumed to be constant through 2030. ESPs should plan for procuring supply in 2030 that matches their assigned load forecast.

16- Is there a separate template (or specific instructions) for the Conforming Portfolio/Preferred Portfolio? Is the Conforming Portfolio/Preferred Portfolio included in (or derived from) the Resource Data Template?

Please refer to the Filing Requirements Overview which covers the Conforming Portfolio/Preferred Portfolio definition.

17- In the Narrative Template, under "Required Portfolios," each LSE should account for the costs and benefits of any resources subject to the CAM in its Conforming Portfolio. An ESP has no control over the costs or benefits of resources subject to CAM. How is an ESP to address this issue?

We don't expect LSEs to have control over the resources subject to CAM. We simply require that LSEs include the resources listed in the year-ahead CAM list in their Plans using the RA capacity value by month for each IOU service territory in which they serve. An LSE's proportional share is determined by its year-ahead share of the total coincident peak load for each IOU service territory, as assigned in the Commission's annual resource adequacy process. For IRP purposes, we assume that the LSE's proportional share of that resource is assumed static through the IRP planning horizon. In terms of cost, LSEs should use their own cost projections for those resources.

Filing Requirements' Questions and Answers

18- For each section of the narrative template (e.g. both Study Design and Study Results) can LSEs provide information on all portfolios (conforming and non-conforming) developed?

Yes. LSEs can provide information on all portfolios they developed, both conforming and non-conforming. While LSEs are required to submit at least two conforming portfolios, one for 46 MMT GHG target and one for 38 MMT GHG target, they can study and report multiple conforming and non-conforming portfolios for each GHG target. However, if they report more than one conforming portfolio for each GHG target, they need to select a preferred one.

19- Where can we find the detailed resource breakdown of the RSP adopted in the proposed decision? Tables 5 and 6 of the PD show aggregate resource categories (e.g., "Wind"), and we would like to see the detailed resource types per the classifications in the Resource Data Template (e.g., "Carrizo_Wind").

There are two ways to obtain this data:
1) RESOLVE Results Viewer. Make sure the case "46MMT_20200207_2045_2GWPRM_NOOTCEXT_RSP_PD" is loaded in the Dashboard. Then in the Portfolio Analytics tab, see the table "Selected Renewables By Location".
2) See ftp://ftp.cpuc.ca.gov/energy/modeling/RSP_SERVM_all_units_capmax_baseline_marked_20200220.xlsx which itemizes units modeled in SERVM and identifies the new resources that were selected by RESOLVE. The unit names contain information such as "Carrizo".

20- Summing the Day Weights by Hydro Conditions from the same Table 47 suggests that the hydro year is based on 75, 86 and 205 days for Low, Mid and High Hydro Conditions, respectively. Can ED clarify why the hydro year is so unevenly weighted (56%) on High Hydro Condition days?

RESOLVE's day sampling for hydro is based on three years of hydro conditions. The days and associated hydro conditions that are picked are selected to match the associated distribution of daily energy budgets among those three years--not necessarily to balance the number/weight of days selected from each hydro year. Not all days in a high hydro year will be high hydro days--so some of the days selected from the high hydro year may be chosen to fill out parts of the distribution that correspond more typically to average (or even low) hydro years.

21- Out of the 198 units given a RESOLVE resource tag of "CAISO_Hydro", 145 appear to have a nameplate capacity of less than 30 MW. These units appear to be what is counted toward the 7070 MW of "Large Hydro" in the results viewer. Can ED clarify if these small units are being modelled as large hydro and if so explain the rationale?

Yes, we are counting these 145 units as large hydro in RESOLVE. To the extent possible, unit level sizes were considered in developing the RESOLVE dataset, but the overall objective was to ensure an aggregate "small hydro" and "large hydro" resource that properly reflects the capacity and energy summed by each plant type. In developing the 2017 IRP model, checks were done against

RPS compliance report data to ensure small hydro GWh matched actual generation. In developing the 2019 model, the underlying unit-level dataset was switched to the SERVM model generator list, which did not directly map to the previous RESOLVE unit list and its hydro classification. However, the aggregate MW by small and large hydro plant types were generally in line with the 2017 RESOLVE dataset.

22- Although PCIA impacts to load were addressed in the Q&A's, the impact to resources were not explicitly addressed. LSEs are expecting an allocation of RPS and carbon-free resources from IOUs from PCIA. We intend to include our anticipated allocations in our IRP portfolio characterized in the Clean System Power template. Does this cause any concerns for Energy Division?

When entering resources into the Supply Inputs tab of the CSP calculator, LSEs should only input resources for which they have procured or plan to procure directly. LSEs paying the PCIA dot hold the contract or the attributes of those resources and so should not enter those resources into the CSP tool. If changes are made to the PCIA allocation methodology then the CPUC can consider associated IRP changes at that time.
Language from PD: PCIA resources should be included in the IOU baseline resources in their IRPs, and other LSEs should not include PCIA resources in their baseline resources, unless otherwise directed by the Commission in the PCIA proceeding or another venue.

23- Questions related to the QC values for renewables throughout 2030 :

a- RESOLVE uses a marginal ELCC surface for wind and solar, and the current QC is derived using an average ELCC approach, which likely will not be resolved until June/July. Please clarify why the ELCC approach differs from existing Commission adopted methodology.

It is correct that the data template uses average ELCC, not marginal. Average ELCC values adopted in the RA proceeding are appropriate for counting capacity the short term, and it is the capacity to use to measure procurement against the Procurement Track order in D.19-11-016, which mandates procurement through 2023. One purpose of building NQC-counting functionality into the template was to measure fulfillment of this procurement mandate, so the template uses RA-adopted average ELCC values through 2023. Beyond 2023, the template uses RESOLVE-derived average ELCC values to estimate capacity contribution from wind, solar, and storage resources, including existing and new units.

24- Table 47 RESOLVE's 37 days and associated weights (2019-20 Inputs and Assumptions, 2/27/2020) lists 4/25/2009 for both days 33 and 34. These duplicate days are apparently mapped to low and high hydro conditions with different day weightings. What are the correct RESOLVE day references for days 33 and 34?

The day sampling algorithm selects days from nine years worth of potential conditions to match long run distributions of load, wind, solar, and hydro. The nine years correspond to three years of load/wind/solar profiles (2007-2009) and three years of hydro conditions (low, medium, and high). Each calendar year of L/W/S profiles is paired with each of the hydro conditions (which assumes that L/W/S are uncorrelated with hydro energy budgets--generally pretty safe) for a total of nine years from which to sample.

The dates listed in the I&A documents refer to the calendar dates and associated weather for the load, wind, and solar profiles but are not associated with the hydro budgets, which are sampled independently. The day sampling algorithm is allowed to pick any calendar date's L/W/S profiles under low, medium, or high hydro conditions, and is not limited to picking that date with only a single set of hydro conditions. This is one instance where the day sampling algorithm chose to duplicate its pick of L/W/S conditions under multiple hydro conditions.

25- Could an alternative portfolio be submitted as an LSE's preferred portfolio?

LSEs are required to submit at least two conforming portfolios, one for the 46 MMT GHG target and one for the 38 MMT GHG target. LSEs can study and report multiple conforming portfolios for each GHG target but if they do so, they need to select a preferred one for each GHG target. These preferred conforming portfolios are the ones that will be assessed by staff for compliance and will be used in the aggregation process. While LSEs can also file alternate portfolios, these portfolios will not be prioritized for aggregation purposes.

26- *How should LSEs that are not self-providing to meet obligations under D.19-11-019 account for procurement occurring on their behalf in their Plans?

If an LSE opted-out of its procurement obligation under D.19-11-016, or was not assigned a procurement obligation under D.19-11-016, and thus will have a certain amount of procurement occurring on their behalf, the LSE must enter an amount and type of resource(s) communicated to it by Energy Division staff. Staff will coordinate LSEs that are not self-procuring and IOUs procuring on their behalf to prevent double-counting and to ensure that reported resources align with the procurement that has already occurred or is consistent with the RSP. Staff expect this to occur in August 2020.

In order to prevent double counting, when filling out their RDTs, IOUs should calculate how much of their procurement will be occurring on behalf of opt-out LSEs and those LSEs that were not assigned a procurement obligation, and subtract that amount from the NQC of that resource. For example, if 10% of an IOU's D.19-11-016 procurement will be occurring on behalf of other LSEs,

that IOU should enter 0.9 for the NQC fraction of that resource. Energy Division staff will then send RDTs to the LSEs that the IOU is procuring on behalf of with resource-specific fields filled out and their share of the NQC fraction such that those RDTs collectively add up to 0.1 NQC. During aggregation, this will result in 100% of the NQC of the D.19-11-016 resources being counted.

27- If a Preferred Portfolio for the 46MMT target also meets our benchmark for the 38MMT target, can the same portfolio be submitted under both scenarios? Or are there underlying differences between the two targets that would necessitate separate model runs on our end?

While some of the criteria that define a conforming portfolio are the same for 46 MMT target and 38 MMT target, the two portfolios should be different in terms of the 2030 LSE-specific GHG Emissions Benchmark. A conforming portfolio for the 46 MMT GHG target needs to achieve emission equal to the LSE's proportional share of the 46 MMT GHG target, and a conforming portfolio for the 38 MMT GHG target needs to achieve emissions that are equal to or less than the LSE's proportional share of a 38 MMT target. Thus, a portfolio cannot be a conforming one to both the 46 MMT target and the 38 MMT target.

28- What are the guidelines for LSEs to address their "fair share of reliability and renewable integration/ramping needs associated with the resources they select" in their IRP filings? Would one adequate method for an LSE to address this requirement be to report its portfolio's contribution to the LSE's system and flexible RA requirements throughout the planning horizon (holding today's requirements and resource capacity counting methodologies constant through 2030)?

The final Resource Data Template includes functionality for tracking the progress of LSE contributions to system RA. Detailed instructions have been provided in the template, including built-in assumptions about the capacity contribution by resource type for the full planning horizon. There is no requirement to quantitatively forecast flexible RA contributions at this time.

29- Should RA obligations, for the purposes of the IRP, be assumed to remain constant through the planning period?

RA obligations are not constant over time and change as the CAISO system peak and system resource mix changes over time. The template to be released May 11th will include functionality for tracking the progress of LSE contributions to system RA. Detailed instructions will be provided in the template, including built-in assumptions about the capacity contribution by resource type for the full planning horizon.

Filing Requirements' Questions and Answers

30- How should LSEs demonstrate that their portfolios do not assume reliability, renewable integration, and ramping needs associated with their portfolios will be met by resources in the portfolios of other LSEs?

The final Resource Data Template includes functionality for tracking the progress of LSE contributions to system RA. Detailed instructions have been provided in the template, including built-in assumptions about the capacity contribution by resource type for the full planning horizon.

31- What are the expectations from Energy Division Staff of the IOU's IRP plans and the IRP reliability track procurement for the loads that had not departed at the time of the Decision (D.19-11-016) but will depart starting in 2021?

If an LSE opted-out of its procurement obligation under D.19-11-016, or was not assigned a procurement obligation under D.19-11-016, and thus will have a certain amount of procurement occurring on their behalf, the LSE must enter an amount and type of resource(s) communicated to it by Energy Division staff. Staff will coordinate LSEs that are not self-procuring and IOUs procuring on their behalf to prevent double-counting and to ensure that reported resources align with the procurement that has already occurred or is consistent with the RSP. Staff expect this to occur in approximately June-July 2020.

32- Can an LSE receiving carbon free resources from PG&E under Resolution E-5046 count those resources in its IRP?

If an LSE accepts an allocation of carbon free resources pursuant to E-5046, the LSE should include that quantity of resources in their IRP filing templates for the 2020 planning year. Because the allocation period in E-5046 only runs through 2020, those resources should not be reflected for any planning years due to that Resolution after 2020.

33- *Are LSEs required to have long-duration storage assets in their portfolio in 2026?

LSEs are not required to include these resources. However, as the decision states and the Narrative Template has specific sections for, LSEs are required to include discussion of the activities they are pursuing or intend to pursue to support the development of long-duration storage in time for the 2026 and 2030 needs. They need to discuss the potential they see and the efforts they have undertaken or will undertake.

34- * Many CCAs may end up with higher than their "share" of renewable procurement in the RSP and 38 MMT cases due to difficulty contracting with existing hydro or other constraints. In other words, the pro rata share of new resources will not align with LSEs' portfolios unless baseline resources are

distributed in the same manner. Can the CPUC confirm LSEs will not be penalized for showing conforming portfolios that exceed their slice of the RSP and 38 MMT portfolios?

As discussed in the response to the previous questions, LSEs need to submit a conforming portfolio that achieves their 46 MMT benchmark, and another conforming portfolio achieves emissions equal to or less than their 38 MMT benchmark. The RSP is meant to guide planning, but LSEs do not have to procure an amount of resources that aligns with their proportional share of resources selected in the RSP. LSEs may submit portfolios that include more or less resources than their share of the RSP as long as those portfolios achieve their emissions goals.

35- *What criteria will be used to evaluate portfolio reliability? Are LSE filings required to demonstrate sufficient system RA to meet their requirements and if so, how far into the future? If not, what threshold will be used to determine if portfolios are reliable "enough" and will this be applied only in 2030 or the horizon?

There is a coarse system reliability progress tracking table built into the RDT for each year through 2030. It is provided as an indicator of how well the effective capacity in the LSE's portfolio meets its share of system peak. The table distinguishes contracted from "planned" capacity. This table is not intended to guarantee compliance. CPUC staff will evaluate system reliability as a whole after collecting and aggregating all LSE filings. Staff will conduct LOLE studies for select years, 2022, 2026, and 2030, for example. If LOLE is 0.1 or less then it may be unnecessary to evaluate each LSE individually. If LOLE is greater than 0.1 then further analysis will be needed to evaluate each LSE's individual contribution to system reliability. Of course, this type of reliability assessment is separate from the issue of whether enough of the existing thermal fleet has long-term contracting to remain online through 2030.

36- *Given that LSEs balance both long-term and short-term contracting, and adjust their short-term procurement as RA obligations change, some LSEs may plan to purchase RA in the short term from existing generators as obligations are issued. How should planned but not yet contracted RA with existing generators be reported? Given the abovementioned balance and the impact of CPUC's RA program parameters on the RA market, would 50% of an LSEs annual system RA obligation being shown as under contract throughout the IRP planning horizon be deemed adequate?

Planned but not yet contracted RA with existing generators should be reported with contract status shown as "planned_existing" in the RDT. Staff expects that for planning purposes it would be more appropriate for LSEs to report what level of contracting they will require to meet long term needs, than what percentage of their forecast load that their risk management policy may allow them to actually contract today. In this way the IRP process can better identify if too much or little is being expected of the existing fleet, and associated resource choices.

37- *Are RA-only contracts allowed to meet the RA requirement? If so, how much will be allowed?

The RDT allows RA-only contracts to be entered to meet the LSE's estimated system RA requirement for each year through 2030. Staff does not provide a specific limit to the inclusion of any contract or resource type in an LSE's portfolio. Consideration should be made to factors including what resources may be reasonably available, given other LSEs' needs, limits to resource potential, and transmission capability limits.

38- ***In the Narrative Template, under "System Reliability Analysis", LSEs are asked to include the System Reliability Progress Tracking tables from the Resource Data Template, and are told we can keep confidential the one line in the table for peak load. I don't believe that this sufficiently keeps peak load confidential—if LSEs are meeting their requirement, the resources that are listed on that table could be simply summed up and the PRM backed out to calculate an LSE's peak load. Because of this, we planned to put the Tracking Tables in a Confidential Appendix. Please let us know if you would prefer an alternative to keeping this data confidential so our peak load cannot be simply calculated by adding up our resource selections.**

This proposed approach is reasonable. LSEs may submit their System Reliability Progress Tracking tables confidentially if they wish.

39- ***The revised IRP template allows different GHG targets to be used by LSEs for their preferred conforming portfolios (46 MMT, 38 MMT or below 38 MMT), which will then be aggregated into a single PSP portfolio. It is not clear whether combining portfolios with differing GHG targets would produce a meaningful and equitable PSP. For example, if an LSE opts for a GHG target lower than 38 MMT (e.g. in the extreme 0 MMT), that portfolio may lean on the system for more than their share of ancillary services such as ramping, which in turn may cause a share of the new ramping requirement to fall on LSEs with a higher GHG target.**

Concerns around leaning on system power to achieve low portfolio emissions is mitigated to a large extent by the Clean System Power Calculator's emissions calculation methodology, which assigns emissions to LSEs when they lean on system power. LSEs can offset those emissions to some degree through over-generation when system power is on the margin, but that is an instance of reducing rather than leaning on system power. In the example posed in this question, an LSE would only be able to achieve 0 MMT if they had sufficient contracted generation to produce energy and/or offset system power during daytime and nighttime hours, which would provide system benefits. Staff will further analyze who is contributing to reliability and who is exacerbating reliability issues during the aggregation process followed by LOLE studies using SERVM.

Filing Requirements' Questions and Answers

40- *In accordance with the revised filing requirements, LSEs opting for a GHG target below 38 MMT will be required to provide additional explanations about how their preferred portfolio might operate differently from a reliability perspective. What type of information should be expected to be provided in the explanation and how will that information inform EDs judgement of the adequacy of the IRP?

The LSE with a low GHG portfolio should explain how its portfolio will provide the energy to meet its load with its own resources and not system power for most hours of the year. If the LSE expects to rely on system power for more than a handful of hours, then the LSE should explain how it will guarantee that the system power is available to serve its load, e.g. through RA and/or tolling contracts with firm, dispatchable resources.

41- *Would it be possible to use the Resource Data Template to consider load changes over time? The reliability methodology in the filing requirements assumes load share is consistent for the planning horizon.

When entering resources into the Resource Data Template, LSEs should plan for resources sufficient to meet its assigned load forecast, which changes over time for most LSEs. The Commission will evaluate an LSE's RDTs alongside its CSP Calculators and Narrative Template, so if it's not readily apparent in the RDT that contracted and planned resources are needed to meet changing load, that context may be provided in those other templates.

42- *The Filing Requirements Documents state that LSEs can use their own financing assumptions or the CAISO transmission financial assumptions, whichever is believed to be the most appropriate. How is that information being communicated to all LSEs?

On page 5 of the Filing Requirements Overview document under the "Other Inputs and Assumptions" section of the qualifications of a conforming portfolio, staff states that If an LSE has better capital cost and financing information than the RSP that more accurately reflects its situation, the LSE is free to use those inputs and/or assumptions. Staff has also directed LSEs to clearly identify, and provide an explanation for, instances where it used its own assumption in lieu of the default used by staff to develop the RSP.

43- * Please clarify that the total CAISO load did not change between the April 15, 2020 ruling and May 20, 2020 update of the ALJs Ruling Finalizing Load Forecasts and Greenhouse gas benchmarks for individual 2020 IRP filings. Also, is the total load in the update the same as the IEPR "mid-baseline mid AAEE" version from IEPR Form 1.1c?

CAISO load did not change between the 4/15 and 5/20 Rulings, and aggregate load is the same with each planning area as IEPR Form 1.1c, Mid-Demand Mid-AAEE.

44- *The Narrative Template requires each LSE to report "total disadvantaged population number served as a percentage of total number of customers served". For an ESP that serves only commercial load, how would this requirement be met?

Please report the ESP's total customers in disadvantaged communities divided by total customers the ESP serves.

45- *Do we enter RA for new CCAs into the Resource Data Template when the incumbent IOU has agreed to provide the RA for the new CCA for an interim period? For instance, SCE has an agreement with Desert Community Energy (DCE) to provide DCE's RA for 2020. If so, do we enter it as seller's choice? If not, what category is best?

Yes. We ask both sellers and buyers to provide this information. This helps us prevent double-counting. Here, the CCA can use either "transfer_purchase" or "sellers_choice" as a positive value The IOU can use either "transfer_sale" or "sellers_choice" as a negative value. Please provide the buyer name, the seller name, and approximate resource mix in the note column. In addition, please provide the resource name in the note cell. If you are the buyer and the resource name is unknown to you, please enter "resource name unknown." for further guidance regarding how to use these resource categories, please read question 27 of the "Resource Data Template" section.

Regarding the procurement obligation under D.19-11-016, please refer to question 26 above.

46- *Some LSEs will not have much, if any, RA procured through long-term contracts at the time the LSE files its 2020 IRP. Such LSEs may expect to procure RA through long-term contracts jointly with energy from renewable and storage resources. Such expected purchases will be entered into the Resource Data Template. However, if an LSE is expecting to use short-term RA purchases for meeting its RA obligation, is an LSE obligated to forecast such short-term RA purchases by resource type and enter them into the Resource Data Template out to 2030? Or can LSEs just enter current short-term RA contracts and let the Resource Data Template be left short on RA in the out years?

Refer to question 37 above.

47- *For new CCAs that do not have a 2021 RA allocation, what should be entered as the September 2021 RA allocation for purposes of the Resource Data Template?

Please use an estimate. Ideally, this estimate would be consistent with what you would submit/have submitted to the CEC as part of the 2019 IEPR process.

48- *Clarifying and updated guidance on the Cost and Rate Analysis (Narrative Template, Section e), Requirements for IOUs Only:

The first table (System Average Rates Associated with Preferred Conforming Portfolio) was included in the template by mistake and is not required.

For adjusting cost to 2019 dollars, please use 2017 IEPR deflator series.

The description of cost categories in the "Revenue Requirements and System Average Bundled Rates for Preferred Conforming Portfolio" table is as follows:

Line No.	*Cost Category*	*Description*
1	*Distribution*	*Forecast of distribution revenue requirement (applies to all customers served by IOU).*
2	*Transmission*	*Forecast of transmission revenue requirement (applies to all customers served by IOU).*
3	*Generation*	*Forecast of generation revenue requirement (applies to bundled customers only).*
4	*Demand Side Programs*	*Forecast of demand side management program revenue requirement (applies to all customers served by IOU).*
5	*Other*	*Forecast of other revenue requirements not included in Lines 1 through 4 (applies to all customers served by IOU).*
6 (sum lines 1-5)	*Baseline Revenue Requirement*	*SUM (Lines 1, 2, 3, 4, 5)*
7	*System Sales (GWh)*	*CEC 2019 IEPR System Sales Forecast - IOU service area (applies to all customers served by IOU).*
8	*Bundled Sales (GWh)*	*CEC 2019 IEPR Bundled Sales Forecast - IOU service area (applies to bundled customers only).*
9	*System Average Delivery Rate (¢/kWh)*	*SUM (Lines 1, 2, 4, 5) DIVIDED BY Line 7. The numerator excludes the generation revenue requirement (Line 3). The resulting delivery rate applies to both bundled and departed customers.*

10	*Bundled Generation Rate (¢/kWh)*	*Line 3 DIVIDED BY Line 8. Applies only to bundled customers.*
11	*System Average Bundled Rate (¢/kWh)*	*Line 9 PLUS Line 10. Applies only to bundled customers.*

Filing Requirements' Questions and Answers

Resource Data Template

1- How do the proposed filing requirements and resource data template prevent the aggregated LSE IRP plans from exceeding the maximum amount of existing resources available to LSEs if LSEs use 'generic existing resources' in their respective individual plans?

There is no way to prevent this before staff receives all of the completed templates. After receiving all of the templates, staff will aggregate the plans, examine the amount of generic resources that are being planned for, and determine if that exceeds available capacity.

2- What delivery term should be included?

Please include all contracts with delivery dates on or after January 1st, 2020, and before January 1st, 2031.

3- *How should contracted sales be entered?

Use "transfer_purchase" and "transfer_sale" for recording energy or capacity transactions between LSEs. Enter the "transfer_purchase" as a positive value and "transfer_sale" as a negative value. Please provide the buyer name, the seller name, and approximate resource mix in the notes column. In addition, please provide the resource name in the note cell. If you are the buyer and the resource name is unknown to you, please enter "resource name unknown."

4- Should LSEs update the Resource Data Template to reflect their actual contracts?

Yes.

5- Inland Empire and Sutter Energy Center (Row 2430) do not appear to be incremental for D. 19-11-016 in contrast to the decision. Is this an error?

This issue was fixed in the version of the template posted on May 12—these resources are now incremental. You can verify by going to the "resources" tab and looking for INLDEM_5_UNIT 1 and SutterEnergyCC-Total – both have an is_incremental value of 1.

6- Questions related to the 'Monthly_gwh_mw' tab:

a- Column C 'cpuc_contract_id'; is there a specific format or can each LSE name the contract id as they see fit if there is currently no Contract ID in the CPUC Contracts Database.

If there is currently no contract ID in the CPUC contracts database, you can use whatever unique identifier you like, as long is it allows staff to uniquely identify a

contract. If the resource name and contract ID alone does not uniquely ID the resource, you need to write a note per part 5 of the instructions so that staff can uniquely identify a contract.

b- For unit specific purchases from another LSE, should the LSE report the Resource ID in the "resource" field, or should such contracts be listed as "transfer_purchase" with unit information provided in the notes section?

List these contracts as "transfer_purchase" and use a note to explain what the unit is.

c- For resources that are identified as "existing_generic" what should the entry be for the "max_mw" field. This information is not known for a generic resource.

Please estimate the maximum rate at which the resource can provide energy, in MW. Staff understands that this is not a nameplate value.

d- How should an LSE report a PCC 2 contract? If the renewable resource is specified in the contract, should the LSE enter the out-of-state resource id in the "resource" field? If the renewable resources are identified as part of a portfolio of resources (i.e. multiple units without specific unit volumes), should the LSE enter this as an "unspecified import" and provide clarification in the notes?

Staff agrees with this approach. For a specified resource, enter the resource ID in the "resource" field and write "pcc2" in the notes. For a portfolio of resources, use "unspecified_import" and, in the notes column, provide information on the approximate resource mix and carbon content, along with "pcc2."

e- How will the Resource Data template and CSP Calculator interact?

The CSP tool and Resource Data Template are for different purposes. The CSP tool is for ensuring that a portfolio meets a certain GHG target, the Resource Data Template is for reporting planned and existing contracts. Therefore, these workbooks are not intended to be explicitly linked via Excel formulas. However, the data in these workbooks should match to the extent possible, and both workbooks should include planned contracts and existing contracts.

f- If a battery is being added to an existing resource, should the monthly_gwh_mw tab be left completely unchanged (no new rows or edits to the existing resource) and just flag the battery in the new "incremental_explanation" column? Or is the preference to still have separate time series data and a discrete row for the battery? If it is the former, is there anywhere you need the online date for the new battery component to be captured?

Please use the first option, entering the resource as a single hybrid resource. In the "notes" column in monthly_gwh_mw for the battery, please write "battery added to [resource name] on [date]." In the incremental_explanation column in unique_contracts, please follow part 10 of the directions. Also see cell below to ensure you don't double-count NQC MW. You should make sure that NQC MW is accurately tallied in column AQ of "unique_contracts."

g- How will the information provided for contracts identified as 'review' in Column J of the monthly_gwh_mw tab be included in an LSE's portfolio for aggregation purposes? Including all shortlisted projects may result in modeling more resources than LSEs may plan to contract for.

See answer to the Q13.

7- Question related to the Column K "max_mw":

a- This column requires LSEs to fill in the resource's nameplate in MW or the max MW amount the resource can deliver. For contracts with a pool of resources and no capacity values, the CSP will determine a share and capacity value based on the composition of the pool. Do entries for columns F (energy in GWh) and K in the Resource Data Template for these resources need to align with the shape and capacities provided by the CSP?

Please estimate the maximum rate at which the resource can provide energy, in MW. You can use what the CSP tool determines. Staff understands that this is not a nameplate value.

8- How the "dashboard" tab is to be completed?

The tables in the dashboard tab (starting at row 4) are automatically updated via Excel formulas, so LSEs should not change these tables (because they will update automatically based on data entered in the blue tabs). LSEs can, however, change cells A1 and A2 (month and year, respectively) to view procurement data for different years and months; see the comments in these cells. LSEs should review the dashboard tab, after they enter their data, to make sure their procurement is accurately reflected. See the instructions_2_tab_overview tab, cell D18, for more details on how to use the purple dashboard tabs.

9- Why are the incremental tabulations defaulted to the month of August? The procurement track specified September capacity, so should LSEs switch to September when evaluating incremental NQC vs. what was ordered?

Yes, you should switch the tab's active month to September to tally NQC vs procurement track. See the comment in Cell A1 of "dashboard." August was put there as a placeholder-it is OK to change it to whatever month you like.

10- Are the calculations in this spreadsheet representative of how the PUC will be evaluating compliance with the procurement order? Specifically, will the entire NQC of a new battery added to an existing baseline resource count as incremental, or will there be adjustments to account for the loss of capacity for the existing baseline resource?

Please see Decision 20-01-004 for guidance on how to enter the NQC of added batteries, linked here http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M325/K127/325127824.PDF. If you add a battery to the resource, you should derate the NQC of the entire project such that you match the counting conventions in this decision. Staff is agnostic to whether you derate the battery or the associated generator - the important thing is to make sure that the total NQC MW of the hybrid resource is accurate and follows D 20-01-004.

11- *Should all sales by the LSE be listed as a "transfer_sale" or just those involving other LSE's named on the "lse_names" sheet?

All sales from one LSE to another are transfer_sales. If the LSE name does not appear on the LSE_names sheet, please provide the buyer name, seller name, and approximate resource mix in the notes column (per the instructions), just as you would for any other transfer_sale or transfer_purchase. It is OK if the LSE name is nonstandard if you cannot find it on the list of lse_names. Also per the updated instruction, please enter the "transfer_sale" as a negative value.

12- For planned resources with CODs before 2027 without locational data provided for the 'new' supertype, which resource name should LSEs select? The generic CAISO resource names are only available for new facilities with CODs starting January 1, 2027. Are LSEs able to choose 'Generic New' resource supertypes for resources that are planned to come online before 2027?

Per part 8 of the instructions, all resources with CODs on or before Dec 31st, 2026 should be one of the new_resolve resources. You cannot use generic resources for this category. LSEs should use their best judgment when selecting among the new_resolve resource as to which area it will come from, even if it is not yet certain. This is by design to encourage more detailed planning for near-medium term resources. However, for resources where the LSE has absolutely no locational preference, the LSE can write "no locational preference" in the notes column (they should still, however, use one of the new_resolve categories for resources with CODs before Dec 31st, 2026, as above). This will be taken into account when aggregating portfolios and seeking to minimize exceedence of transmission and resource potential limits.

13- Are LSEs required to include all currently shortlisted projects as under review, even if plans are to only contract with a subset of those contracts?

No, you do not need to include all shortlisted resources. With respect to shortlisted resources, your data template should only contain the subset of shortlisted resources that you intend to contract with. In other words, if a resource is shortlisted but you do NOT plan to contract it, you should omit it from the template.

14- In the caiso_interconnection_queue tab, what is the difference between N/A (Project not in queue) and TBD (To be determined)?

If you believe that the project will enter the queue soon (i.e. it is a CAISO resource that hasn't connected yet, and you eventually expect it to enter the queue), put TBD. If the project will not go into the CAISO queue (due to being out of state, or not tied to any physical resource), put N/A.

15- What does Energy Division plan to do with the information about a resource's CAISO queue position?

Queue position is one of the fields that helps communicate the viability of a resource. Staff will use this and other resource viability information in plan aggregation and other planning workstreams within IRP.

16- Questions related to CAM resources:

a- Are LSEs expected to list contracts for the individual CAM resources? Or do we report them as a single aggregate contract? LSEs receive their annual CAM allocation in aggregate so listing individual CAM resources as separate contracts is challenging.

It is OK to list all CAM resources in your service territory as a single aggregate contract.

b- Should LSEs use the name 2020 capacity allocation through 2030, or should we use our same 2020 proportional share of the total resources available each year on the CPUC's CAM resource list?

Use the same 2020 proportional share of the total resources available each year (the second option).

c- What should LSEs use to determine their CAM allocation – the year ahead list or quarterly update?

Use the year-ahead list.

d- Are LSEs to report only system RA, or should we also include flex, local, and/or DR? If we are to include CAM DR, how should it be reported in the templates?

Report System RA only. CAM DR should be reported in the templates as DR. For these resources, the "cam" variable in unique_contracts should be set to 1.

e- For CAM resources that are in a Local area within the CCA's partnering IOU TAC area but listed on the CAM list of a different IOU how should a LSE account for those resources? (for example, SCE is listed as having resources within Bay Area but that is not within its TAC area)

You should still mark these as CAM. Provide a note that explains which LSE has these on their CAM list.

17- *In the "estimate_system_ra_requirement" tab it asks for "Please input your LSE's 2021 System RA allocation, NQC MW here. This will be kept confidential." LSEs have not received their 2021 System RA allocation yet. What should be entered here?

CPUC staff advises LSEs to use the initial estimated 2021 RA allocations, which will be provided at the end of July. In the interim, to allow LSEs to progress developing their individual IRPs, the LSEs could use last year's RA allocation and then substitute in the 2021 initial allocations when it is made available at the end of July.

18- *For purposes of populating the template, does the CPUC distinguish between a co-located solar+storage resource (two resource IDs) and a hybrid? If we are contracting with a co-located resource, should we treat it as a hybrid for purposes of populating the template?

If there is only one shared CAISO Resource ID or there are operating/contractual restrictions (e.g. in order to capture tax credits and/or the storage must charge from on-site generation and not the system) then code this as hybrid.
If there are no operating restrictions and the two resources are simply next to each other and have independent CAISO Resource IDs then code this as two independent resources.

19- *Under what circumstances should we use "transfer_purchase" as the resource? If we are purchasing energy or capacity from another LSE, but we know it is from a specific CAISO resource, should we put in that resource? Or since we are contracting from another LSE vs. directly with the supplier, is this a "transfer_purchase"?

Please use "transfer Purchase" as the resource for these types of contracts even if the LSE knows the specific information. This helps us prevent double-counting. However, please include that specific information (e.g. resource name/CAISO Resource ID) in the "notes" column and be sure to complete other columns as the template asks for (e.g. fillmes).

20- *For energy-only import contracts, is it okay to populate the max_mw field with zero? There is no way to estimate the max_mw associated with energy that is provided from a pool of possible resources, and we are not contracting for any capacity anyhow.

Yes, for this case you should populate max_mw with zero.

21- *We have capacity contracts for two CAISO resources that are new, but not in the "resources" tab. They are GATEWY_2_GESBT1 and WSTWND_2_M90WD2. Should we enter them in as the resource even though they are not on the tab (but are online), or should we use one of the RESOLVE types (New_Li_Battery for these two)?

Use the fields from the "resources" tab col B strictly. If the specific resource name is not found on the "resources" tab col B then filter the list using col F (resources_supertype) for "new_resolve" and "new_generic". Now choose from among this filtered list the most appropriate resource, e.g. New_Li_Battery, new_generic_combined_cycle, Carrizo_Solar, etc. to fill in col B of "monthly_gwh_mw". If there is more useful information available, such as a CAISO Resource ID and/or a descriptive project name, then insert this as a string in the "notes" column of the "monthly_gwh_mw" tab (even if there is no "fillme" in the notes column). In your example, you would include "**GATEWY_2_GESBT1"** in the "notes" column and any other identifying information such as a human-readable description. The "contract_status" (col I) of "monthly_gwh_mw" would be coded as "online" if this specific unit is already online. The purple col N "currently_online" would also have to be overwritten with "1" to indicate the unit is already online. If this project is not yet online, then "contract_status" (col I) of "monthly_gwh_mw" would be coded as "development", "review", or "planned_new", and purple col N should already be populated with "0".

22- *We've followed the instructions to enter any sales to other LSEs as "transfer_sale" in the template with positive values. However, we've noticed that the "dashboard" tab actually adds these as "unknown" ELCC instead of subtracting them, greatly inflating the supply reflected in the calculation vs. our load. Is there an additional step we need to take to make the dashboard calculation incorporate the correct impact of these sales?

"unknown" ELCC is coded as "0" in the RDT so it should not be contributing a capacity value in the "dashboard". But if the LSE has entered an exact NQC value from the contract, then this value would be used by the dashboard. To solve the general problem with the "transfer_sale," Staff have updated the instruction and ask LSEs to enter the "transfer_sale" as a negative value.

23- *In the Resource Data Template, how should a resource be entered which is partially operational but not in the list of operating resources in the Resources tab? Should this be listed as a "new_resolve" type resource or an "existing_generic" resource? What should be entered for column I (contract_status) and should the calculation in column N (currently_online) be overwritten as 1?

Please only use the fields from the "resources" tab col B strictly. If the specific resource name is not found on the "resources" tab col B then filter the list using col F (resources_supertype) for "new_resolve" and "new_generic" (read the "instructions_8_supertypes" in the Resource Data Template regarding the differences between these two types). Now choose from among this list the most appropriate resource, e.g. New_Li_Battery, new_generic_battery_storage, Carrizo_Solar, etc. to fill in col B of "monthly_gwh_mw". If there is more useful information available, such as a CAISO Resource ID and a descriptive project name, then insert this as a string in the "notes" column of the "monthly_gwh_mw" tab (even if there is no "fillme" in the notes column). The "contract_status" (col I) of "monthly_gwh_mw" would be coded as "online" if this specific unit is already online. The purple col N "currently_online" would also have to be overwritten with "1" to indicate the unit is already online. If this project is not yet online, then contract_status (col I) of monthly_gwh_mw would be coded as "development", "review", or "planned_new", and purple col N should already be populated with "0".

In certain cases, LSEs may want to enter a partially operational contract as two (or more) separate lines, if there are distinct stages of the project that will require LSEs to make differentiated entries in the "unique_contracts" tab. As the Resource Data Template's instruction states "a contract is defined as a unique combination of three columns: resource, cpuc_contract_id, and notes." So, by providing different notes for each stage of the project, "unique_contracts" tab creates separate lines for each, even though they have the same resource name and cpuc_contract_id.

24- *For new resources that are not on-line but are under contract, should these all be entered as "new_resolve" resources in the Resource Data Template?

If the project is listed on col B of the "resources" tab, then enter it in the "monthly_gwh_mw" tab using that name. The list on col B of the "resources" tab is drawn from known projects under development and you should match to those projects if possible (e.g. Painter Energy Storage, LLC or Maverick Solar, LLC). Otherwise, enter it as one of the resources with "supertype" equal to "new_resolve" or "new_generic." For the "contract_status" in the "monthly_gwh_mw" tab, enter "development". For example, you could select "New_Li_Battery", "Southern_Nevada_Solar", or "new_generic_combined_cycle". Enter descriptive identifying information in the "notes" column even if "fillme" is not requesting it.

25- *Are the only resources that can be entered as "physical" in the Resource Data Template those that match the resource names in the "resources" tab?

Yes. Supertype is not allowed to be changed. If you need to enter a resource that is already online but the specific name cannot be matched to a name from col B of the "resource" tab, then see answer to question 21 in this section.

26- *Does an LSE have to identify the existing resource when using planned_existing for contract_status?

No. But the LSE does need to provide the requested data in the "fillme" columns on the "monthly_gwh_mw" tab and resolve all errors flagged by the Resource Data Template.

27- *Are the transfer_sale and transfer_purchase categories only for energy or also for RA?

These categories can be used for both. Use "transfer_purchase" and "transfer_sale" for recording energy or capacity transactions between LSEs. Enter the "transfer_purchase" as a positive value and "transfer_sale" as a negative value. Please provide the buyer name, the seller name, and approximate resource mix in the note column. In addition, please provide the resource name in the note column. If you are the buyer and the resource name is unknown to you, please enter "resource name unknown."

28- *How do I enter RA sales as positive values when they should not be added to the purchases for purposes of the RA tracking table? If I enter a "transfer_sale" as a positive value, per the prior instructions, the sale volume is added to purchase volumes in the RA for the tracking table, which is incorrect. For example, if I have two transactions, a purchase of 5 MW of RA and a sale of 5 MW of RA, the net would be zero. But in the tracking table it would be 10 MW because both are entered as 5 MW. How do I get the tracking table to accurately reflect the sales volumes?

To solve this problem, Staff have updated the instructions and ask LSEs to enter the "transfer_sale" as a negative value. Use "transfer_purchase" and "transfer_sale" for recording energy or capacity transactions between LSEs. Enter the "transfer_purchase" as a positive value and "transfer_sale" as a negative value. Please provide the buyer name, the seller name, and approximate resource mix in the notes column. In addition, please provide the resource name in the note cell. If you are the buyer and the resource name is unknown to you, please enter "resource name unknown."

29- *If entering a sale of energy or capacity from a specific resource, do we enter "transfer_sale" in the "resource" column and put the resource ID in the "notes" column?

Yes, if this is a transaction between two LSEs. Please use "transfer_sale" as the resource for these types of contracts even if the LSE knows the specific information. This helps us prevent

double-counting. However, please include that specific information (e.g. resource name/CAISO Resource ID) in the "notes" column and be sure to complete other columns as the template asks for (e.g. fillmes). Also per the updated instructions, please enter the "transfer_sale" as a negative value.

30- *What is the updated instruction on how to use "transfer_purchase", "transfer_sale", and "sellers_choice"?

"transfer_purchase" and "transfer_sale": Use these two categories for recording energy or capacity transactions between LSEs. Enter the "transfer_purchase" as a positive value and "transfer_sale" as a negative value. Please provide the buyer name, the seller name, and approximate resource mix in the note column. In addition, please provide the resource name in the note cell. If you are the buyer and the resource name is unknown to you, please enter "resource name unknown."

sellers_choice: This category can also be used in the same way as "transfer_purchase" and "transfer_sale". But sellers_choice can also be used to capture energy or capacity transactions from a supplier to an LSE, instead of LSE-to-LSE transfers. Use negative values for sales and positive values for purchases. Please provide the buyer name, the seller name, and approximate resource mix in the note column. In addition, please provide the resource name in the note column. If you are the buyer and the resource name is unknown to you, please enter "resource name unknown."

31- *The capacity for my hybrid resource(s) is not showing up in the dashboard. Why is this?

This is because you entered your hybrid resource using the nqc_fraction_if_nqc_not_known column. The RDT's ELCC calculator feature is not able to assign one standard ELCC to hybrid resources. Unknown ELCCs are automatically assigned an ELCC of zero, which causes their capacity to appear as zero. We suggest you instead enter your hybrid resources using column G (contracted_nqc_mw_if_known), which asks for known NQC values. To calculate this value, use the methodology adopted in D.20-06-031 of the Resource Adequacy proceeding. A summary of this methodology is included below. Please refer to the decision text for additional guidance before finalizing your calculation. Use this calculated value to fill in column G of the monthly_gwh_mw tab and your hybrid capacity should appear on the dashboard.

If you do not want to calculate your hybrid resource's NQC using this methodology, you may use the nqc_fraction_if_nqc_not_known column and the dashboard will record your resource as having 0 NQC. The Commission will still be able to model and assess the capacity and energy value of your hybrid resource as long as you provide all the requested information in both the monthly_gwh_mw and unique_contracts tab. Please note the unique_contracts tab has several

columns specific to storage and hybrid resources that must be completed. The dashboard is only intended to help LSEs with planning and is not a compliance tool.

Hybrid counting methodology summary: Total QC = Effective ES QC + Effective Renewable QC. Effective ES QC is defined as the minimum of: (1) The energy (MWh) production from the renewable resource until 2 hours before the net load peak assuming charging is done at a rate less than or equal to the energy storage's capacity. This renewable charging energy is then divided by 4 hours to determine the QC; or (2) The QC of the energy storage device. Effective Renewable QC equals the remaining renewable capacity, net of the capacity required to charge the battery at a constant rate over the available charging hours, multiplied by the ELCC factor for the month. The total capacity of the hybrid or co-located QC values shall be capped at the point of interconnection limit. Please see the decision text for additional guidance.

32- * What should be entered in the "hybrid_can_charge_from_grid" column in the "unique_contracts" tab, when a hybrid resource is not charging from the grid in the first few years, but it will in the later years? The Resource Data Template only accept 0 or 1 for this column.

Some resources, like a hybrid resource that will charge from the grid in later years, may have operational characteristics that change over the course of the time horizon. In these cases, please enter your resource such that it appears in the unique contracts tab as two (or more) separate lines. You can do this by adding a note in the "note" column of the "monthly_gwh_mw" tab differentiating the phases of the resource. As the Resource Data Template's instruction states "a contract is defined as a unique combination of three columns: resource, cpuc_contract_id, and notes." So, by providing different notes for each stage of the project, "unique_contracts" tab creates separate lines for each, even though they have the same resource name and cpuc_contract_id. Then use the unique contracts tab to enter appropriate responses for each phase of the contract.

33- * There are some resources that the Resource Data Template incorrectly considers them as baseline or incremental. Please advise LSEs on this.

Staff is aware of this issue. The Resource Data Template's "incrementality" feature is just a tool and is not the arbiter of D.19-11-016 compliance. In order to have the Resource Data Template reflects incrementality accurately, please overwrite "is_incremental" with a value of 1, If it's incremental based on D.19-11-016 and the Resource Data Template is showing it incorrectly, and fill "incremental_explanation" column in the "unique_contracts" tab. For the resources that are baseline and the Resource Data Template is showing them incorrectly, please overwrite "is_incremental" with a value of 0. Fill "incremental_explanation" accordingly if needed.

34- *Is there an additional, separate filing due on September 1, 2020 regarding the incremental system resource adequacy procurement (ordered by D.19-11-016) or the only compliance filing due on September 1st is the IRP compliance filing?

Staff is working on this and the instruction will be sent to the IRP service list.

35- * All the contracts I've input as 'existing_generic' are showing up as incremental which is incorrect. What is the guidance to resolve this issue.

Staff is aware of this issue. Please refer to question 33 in this section for guidance.

Filing Requirements' Questions and Answers

Clean System Power (CSP) Calculator

1- Does the calculator account for the emissions from spinning reserves and when units are operated at partial load?

Emissions from units operating at less than their full capacity are included in the system power emissions factors. The SERVM production cost model co-optimizes energy and ancillary services, so the resulting fuel burn and emissions values include the impact of operating resources as spinning reserves.

2- How should LSEs enter hybrid resources into the CSP tool?

While the CSP tool does not have a specific option that allows LSEs to simulate hybrid resources, it is possible to represent hybrid solar + storage resources by either adding battery and solar capacity separately so that the tool will in-effect add the profiles together; or using the user-defined custom GHG-free generation profile to model hybrid resource dispatch with a production shape that has been defined outside of the tool. There are more instructions on how to enter hybrids at the end of the CSP tool instruction document.[3]

3- Can LSEs use specific actual emission factors for specific resources?

The tool is not designed to allow for user-specified emissions factors. Using standard emissions factors in the tool allows for a like-for-like comparison of LSE plans.

4- Is there a document describing the emissions factors used and the specific calculations and sources used to develop them?

Hourly emissions factors are included in the "Emission Profiles" tab. There is also a section in the CSP Tool documentation titled "Hourly emissions factors used in the CSP tool" that describes how emissions factors were calculated.

5- Is there any way to separate emissions into air basins using the calculator and add more criteria pollutants from biomass resources?

The tool does not have the functionality to provide more granular air emissions outputs. Moving forward, staff will continue working with parties to refine how air emissions and other important planning outputs can be best conveyed in IRP modeling.

[3] See CSP tool documentation here: https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442463630

Filing Requirements' Questions and Answers

6- Will the CSP Calculator include the ability to view more cost information from the LSEs?

The tool does not have the functionality to provide cost and revenue requirement outputs. In future cycles as we continue to refine the CSP Tool, staff will consider adding cost functionality so that we can compare LSE portfolio costs in a more systematic way. For now, LSEs should continue to calculate cost and rates information about the incremental resources proposed in their respective IRPs on their own using the 2019 I&A cost documentation.

7- What is the process for LSEs to ask questions on the final CSP tool?

Staff will hold office hours with LSEs to answer any questions about the Filing Requirements including the Tool.

8- Will the CSP provide options to customize battery storage inputs? For example, Will the CSP allow different durations beyond 4-and 8-hour to be input?

Users can choose between 2-hour and 4-hour battery storage options. If users wanted to model, for example, a 3 hour battery, they could enter half of the capacity as a two hour battery and half as a four hour. The pumped storage resource provides an example of a long-duration storage profile.

9- Will LSEs be able to set discharging hours?

The tool does not let LSEs set discharging hours. The assumption is that a "4 hour" battery has 4 hours of storage capacity (MWh) relative to the charging/discharging capacity (MW). Charging and discharging capacity are assumed to be the same.

10- In the Supply Inputs tab of the tool, if the GWh dropdown is selected in Column C, are the GWh to be entered in the pink rows or is this all accounted for in the custom profile below starting on row 50?

Any resource entered in the Custom Profile section of the Supply Inputs worksheet should not be entered in the rows with suggested resources (rows the GWh/MW toggles). Entering a resource in both places would result in it being double counted.

11- Do IEPR forecasts account for load departure in 2021 and 2022 due to the Direct Access lottery expansion?

Yes, the tool uses the load forecast from the 2019 IEPR Form 1.1c, which includes 4,000 GWh of DA service expansion under SB 237 (Hertzberg, 2018).

12- How should users enter unspecified PCC 1 Energy Only contracts, or Seller's choice contracts?

LSEs reporting these types of contracts that do specify the nameplate capacity of the delivering resource(s) should enter the annual GWh for the resource(s) that it believes most closely matches the energy source or sources(s) for the contract in the *Supply Inputs* worksheet.

13- When entering load figures, should ESPs enter retails sales or gross their sales up for T&D losses?

ESPs should enter retail sales. The CSP tool grosses those figures up for T&D losses when appropriate.

14- What load forecast for 2030 should ESPs use to calculate their GHG benchmark?

Commission staff will confidentially communicate to each ESP its individual load forecast for purposes of their individual IRP filings, which will be developed based on the year-ahead load forecast that each ESP submits this year for RA purposes.

15- In what ways can LSEs deviate from form 1.1c of the IEPR for their demand forecasts. Can they customize load shape?

Users have the option of specifying custom 8760 demand profiles for each component of the demand forecast on the "Custom Hourly Load Profiles" section of the *Demand Inputs* worksheet as long as the assigned annual energy volumes remain unchanged. This option is appropriate for LSEs that know the hourly shape of their demand components and wish to reflect those projections in their plan. Custom hourly shapes are applied to the annual demand forecasts in the *Demand Inputs* worksheet. Users may also specify a percentage of their baseline demand that comes from C&I loads in each year using the "Use Custom?" toggle in Column C of the *Demand Inputs* tab. A C&I baseline hourly demand shape will be applied to the C&I percentage, and the remaining baseline demand will receive a non-C&I hourly demand shape. If a custom C&I percentage is not entered, the default percentage will be used.

16- How does the CSP determine whether or not natural gas & unspecified imports is the marginal unit. In other words, what is the marginal unit methodology employed in the CSP tool?

Average emissions factors, as opposed to marginal, are used in the tool. The decision to use average rather than marginal emissions factors for system power reflects the underlying goal of the CSP method: to attribute system-wide emissions to multiple LSEs in a consistent manner, so that the aggregation of their portfolio emissions will be comparable to those of the system. One benefit of using average emissions factors is that multiplying an average emissions factor by a given level of demand will sum to the total emissions for that level of demand. In California, where there is a single dominant dispatchable fuel (natural gas),

marginal emissions factors will tend to overestimate aggregate emissions because the marginal generator tends to be less efficient than generators further down in the stack of dispatchable resources.

17- Can LSEs enter custom inputs for the last 24 hours of 2020, which is a leap year? If so, can staff advise on how to input hours 8761-8784?

The tool does not allow users to enter data for the last 24 hours of 2020 because the tool does not simulate leap years. Each future year is modeled with 8760 hours. All future years in the tool are built using the 2007 weather year, with demand shapes that use the 1990 calendar of weekend/weekday and holidays and 2007 weather. Neither 2007 nor 1990 were leap years, so the renewable profile and demand data, and the resultant SERVM production cost shapes (including battery dispatch, system power emissions factors, etc.) are based on a year that does not have a leap day.

LSEs should make their best effort to align hourly custom profiles with the underlying weather and calendar conditions. One important consideration for demand profiles is to align weekend/weekend status, because demand can vary significantly between weekends and weekdays.

18- How is system power accounted for in the Supply Inputs?

System power is calculated through subtracting an LSE's resources specified in the 'Supply inputs' from an LSE's load on an hourly basis. There are, however, some emissions that the CSP tool allocates to an LSE regardless of its hourly position. This allocation is done on a pro-rata basis by an LSE's share of total CAISO load for combined heat and power (CHP) emissions as well as some dispatchable gas emissions. For dispatchable gas (as determined by the SERVM modeling) there are some hours in which gas is running despite overgeneration. This implies that some portion of gas power is not displaceable and necessitates allocation to each LSE such that the associated emissions are not 'lost' when each LSE specifies its own portfolio. Likewise for CHP, this is because the units generation is not attributed to any LSE in particular.

19- Why do we get higher numbers when entering 2018 portfolios into the new calculator?

a- This appears to stem from the assumptions made in the new Clean System Power calculator that "system power" has the emissions profile equivalent to that of natural gas. can you confirm that this change was intentional? Is the assumption that all system power is natural gas?

System power in both this and last cycle of IRP reflects emissions associated with natural gas. There are two related changes, however. First, this cycle uses emissions factors for each hour of the year instead of the month-hour averages. Second, hours in which gas emissions are not displaceable by an LSE (e.g., some

mid-day solar hours) are accounted for in a separate area of the tool from the emissions intensity. Resources count towards an LSE's portfolio only if their power output is delivered to (1) a California Balancing Authority area, if RPS eligible, or (2) the CAISO system if the resource is not RPS-eligible.

b- How are low GHG resources such as large hydro and nuclear taken into account in the calculator, and are these resources not taken into account as part of system power? If LSEs have resources such as these under contract for RA, how should they be taken into account in the calculator, since the LSEs do not know how they will be dispatched?

This would exclude RA contracts that do not have associated energy. For nuclear and large hydro, LSEs can claim this generation only if they have it as part of their portfolio.

20- Questions related to the load profiles for input into the Clean System Power Calculator

Load profiles are allowed to change but the relative amounts of baseline load, electric vehicle load, other electrification, energy efficiency, and BTM PV are fixed by the calculator tool. If the assumption of such relative amounts is inaccurate for an LSE, even if customer hourly shapes for all components match the LSE's metering data, the final normalized shape will not match the actual metered shape of the LSE. In such a scenario, what does the CPUC expect? Does the CPUC expect that if an LSE uses custom hourly demand profiles, that the final output metered shape will not match the actual metered shape of the LSE? (Especially in the short-term for 2020?) Would it be acceptable for an LSE to construct a metered shape for the baseline load that returns the actual metered shape of the LSE in 2020?

If an LSE chooses to enter a custom hourly demand shape, the shape must be normalized so that the sum of the hourly values over the entire year equals 1. We understand that the IEPR's load modifier forecasts will not match most individual LSE load modifier forecasts, but the pro-rata share methodology will aid LSE plan aggregation. LSEs may customize the metered shape for their baseline load and load modifiers to the extent that they see fit to best match their own load shapes as long as the annual load volumes remain unchanged meaning that the sum of the hourly volumes over the entire year equal 1. LSEs must also provide a detailed explanation as to how their load shape was developed in the Narrative Template.

21- CSP's emission profiles, supply profiles, and demand shapes changed from v1:

a- What drove the changes?

Changes were driven by the portfolio updates to the Feb 2020 RSP as reflected in SERVM, and the 2019 IEPR..

b- Why is dispatchable gas now holding flat instead of declining?

When compared with the earlier draft of the CSP tool, dispatchable gas generation does not decline as much 2020 to 2030. This is in large part due to a 5 TWh increase in system load from the updated CEC IEPR forecast.

c- Are these profiles final or will there be another version of updates?

Profiles are final based on SERVM modeling of the 46 MMT and 38 MMT portfolios adopted in D.20-03-028.

d- Gas is now marginal during SERVM curtailment or when RSP input (columns BM: BP on Supply Resource Profiles) is negative. As a result, hours where the system is curtailed increases from 1,319 to 1,605 in 2030. What triggered the change? Please explain the rationale.

This change in methodology was implemented to avoid unrealistic oversupply credits for LSEs in the CSP tool. Generally, the goal of looking at both SERVM curtailment and RSP input to determine curtailment in the CSP is to take into account system dynamics evaluated in SERVM while at the same time avoiding unrealistic additional oversupply as the RSP inputs were replicated in the CSP tool. Specifically, the RSP input logic was added because it was noticed that storage dispatch within SERVM was masking hours which were in oversupply and would have had curtailment, if not for the storage charging that hour.

22- In reviewing the 46 MMT CSP and RESOLVE tools it appears that though the small hydro capacity is aligned (approximately 974 MW), the assumed energy from these units varies across the two models. In RESOLVE the annual energy from small hydro is 4,327 GWh while in the CSP it is 2,838 GWh. It would seem the inconsistency in assumed capacity factors would adversely impact the GHG positions of LSEs with small hydro in their portfolios relative to the RSP developed in RESOLVE. Please clarify.

The small hydro profile in the CSP tool has a lower capacity factor compared with RESOLVE. Because RESOLVE models small hydro as a flat profile, and SERVM models small and large hydro as one unit, a new profile was created for the purpose of hourly emissions. This was accomplished using historical small hydro generation in CAISO and CAISO contracted capacity. Those LSEs whose small hydro supply has a different capacity factor may choose to enter the energy supplied in GWh in the Supply Inputs tab rather than capacity using the toggle to the left of the input cells.

23- *How should we interpret the managed load? We were under the impression that the managed load already includes the demand modifies. However, when that is entered into the CSP, why are additional demand modifiers being added again to the load? Is this double counting the demand modifiers?

Managed load includes demand modifiers. What you're seeing in the CSP is not additional demand modifiers, but rather the demand modifiers separated out from the load and grossed up for T&D losses. This is done for calculation purposes and does not change the load volume that the LSE entered as its managed sales forecast.

24- *Is there any difference for CCAs as compared to a regular IOU as in how to enter the load? Should we plan to meet the "demand at generator at busbar" or the managed load?

There is no difference. All LSEs should enter their managed load forecasts. The calculator will gross up the load forecast when appropriate for calculation purposes. One caveat is if LSEs are using the CSP calculator for an "alternate plan," they have the option of using their own demand modifiers. If they choose to do this, they should gross up the customized demand modifiers for T&D losses. These instructions are specified clearly in an adjacent cell.

25- *New guidance clarifying the role of BTM CHP emissions:

We allocated BTM CHP emissions to CPUC-jurisdictional LSEs based on their share of load in CAISO, net of POU pumping agency load. According to IEPR form 1.5a, CPUC-jurisdictional LSEs account for 91.7% of the non-pumping load in CAISO. Therefore, we allocated 91.7% of the 5.48 MMT of BTM CHP emissions in CAISO to the LSEs based on load share.

For example, direct access in PG&E's service territory accounts for 6.3% of CPUC-jurisdictional load in 2030 (11,400 GWh / 181,393 GWh). So PG&E's share of BTM CHP emissions is 5.48 MMT * .917 * .063 = 0.32 MMT (some differences due to rounding). So the benchmark for direct access load in PG&E's territory is 0.32 MMT lower when BTM CHP is backed out. Similarly, using the same methodology, the benchmark for direct access in SCE's and SDG&E's territory decreases by 0.37 MMT and 0.11 MMT because direct access accounts for 7.4% and 2.2% of CPUC-jurisdictional load in those territories respectively.

Another thing to keep in mind is that the 5.48 MMT of BTM CHP emissions are all in CAISO, and CPUC-jurisdictional LSEs are only 77% of statewide electric sector emissions. So 46 MMT and 38 MMT statewide targets get scaled down to 35 MMT and 29 MMT targets for LSEs filing IRPs. After scaling down 5.48 MMT of emissions to net out POU load, that leaves 5 MMT of emissions that needs to be subtracted from total benchmark emissions for CSP purposes.

26- *In the 2018 CSP Calculator, there were different line items for EV Load Home and EV Load Home+Work (that reflected charging at C&I locations), while the 2020 CSP only has one assumption

for EV charging based on an overall percent of load. Why was this change made to not separate residential and C&I charging? Much like allowing LSEs to modify their load shape to reflect more C&I or more residential load, assigning EV charging load to LSEs based on share of residential or C&I EV charging would be appropriate—if the majority of EV charging is at home, an LSE that is 100% C&I load should receive a lower proportion share of EV load. May an LSEs that has only C&I load change the EV load assumption in the Conforming case or only the Alternative?

An LSE may change the shape of any load modifier. If an LSE chooses to enter a custom hourly load modifier shape, the shape must be normalized so that the sum of the hourly values over the entire year equal 1 and the LSE provides a detailed explanation as to how their load shape was developed in the Narrative Template. It would be appropriate for an LSE to change the shape of its assigned EV load so that it corresponds to 100% C&I charging load in a conforming portfolio, as long as you support that decision in your Narrative Template.

27- ***If an LSEs that has 100% C&I load and documentation of their losses being lower than what is assumed in the CSP (due to C&I customers off taking at higher voltages), can this be used to modify the Baseline Net Energy in the Conforming case or only the Alternative?**

This would have to be an alternative case. Allowing LSEs to use different line loss rates would cause challenges during aggregation.

28- ***If an LSE submits a Conforming case that does not meet its individual GHG target, but has an Alternative case that does meet the target and the assumptions used in the Alternative case is accepted by the Commission, will this filing be deemed compliant?**

No, an LSE must submit a conforming 46 MMT plan and conforming 38 MMT plan. A conforming portfolio for the 46 MMT GHG target needs to achieve emission equal to the LSE's proportional share of the 46 MMT GHG target, and a conforming portfolio for the 38 MMT GHG target needs to achieve emissions that are equal to or less than the LSE's proportional share of a 38 MMT target.

29- ***The EV Load row has a default assumption for how much EV load is assigned to an LSE which appears to be just based on a load ratio share. The 2020 CSP lumps residential and workplace charging into the same row, where the 2018 CSP had separate line items for Residential EV Load and Workplace EV Load. ESPs will therefore be assigned pro rata portions of both Residential and Workplace EV charging load, which will overstate their EV load since they have no residential customers. My question is can this total amount of EV load be reduced in the Conforming portfolio to better represent actual ESP EV charging load?**

There are two options to address this in the CSP Tool.

- Modify the EV load shape so that it better reflects a commercial charging profile rather than residential load profile, but leave the total load volume unchanged. This can be done for a conforming portfolio.

- Modify the EV load volumes and shapes to be better reflect anticipated EV load and a commercial charging profile. This can only be done for an alternative portfolio.

30- *Why is system power much higher than it was in the 2018 cycle?

Modeling of the RSP under future GHG targets in this cycle has changed in numerous ways since the last cycle including updated CHP accounting, new portfolios, updated modeling software, and numerous changes to the actual CAISO system. However, there are two main changes are likely causing the increase in system power emissions. First, the CSP is populated using hourly values from the Energy Division's SERVM software in this cycle, which optimizes hourly dispatchable gas differently from RESOLVE such as stochastic changes in output, and detailed unit commitment. This, and numerous other reasons have caused combustion turbines, which have higher emission rates than CCGTs, to dispatch more relative to CCGTs .

Second, logic to determine that solar is on the margin occurs outside of the hourly emissions values in this cycle's CSP tool. In the last IRP cycle, hourly emissions were reduced during high solar hours to zero, or near-zero, to reflect that generation beyond an LSE's load does not offset gas emissions. In contrast, in this cycle all hours have default emission factors that only reflect natural gas generation.

To limit crediting oversupply during high solar hours, the following logic was used. If an hour has not been deemed to be in oversupply at the system level (gas is on the margin), then the natural gas emissions factor will be used. If the system has been deemed to be in oversupply, then the LSE is allocated only their share of system gas emissions that can not be displaced, such as those resulting from system and operational constraints. The complication is due to gas units running on minimum load, which must be allocated to the system as a whole, despite many LSEs having sufficient generation. (Actual implementation of this is a little more involved, but this paragraph describes it accurately). This effectively raises the annual average of the hourly intensity values (instead of having solar hours at near zero emissions intensities).

31- *How do you recommend that LSEs take into account the fact that System Power resources will include GHG-free resources that are not gas?

The CSP tool assumes that all energy from large hydro and nuclear facilities will be claimed by one or many CAISO LSEs, thus leaving the residual "system power" as unspecified imports and dispatchable gas. Today, most of the operating hydro and nuclear bid into CAISO is either owned or contracted by LSEs. Hydro/nuclear that is not currently contracted with LSEs, may still be selected by LSE if they plan to contract with them in the future. More importantly, the purpose of the CSP tool is to ensure the LSEs are planning to their emissions target with what they actually have in their portfolios. To the extent that any residual clean energy would lower actual system power emissions intensity, the impact would likely be small given the relative size.

32- *Your direction in the question19 in this section, that only RA resources that have associated energy should be included in the CSP as Supply Resources. Should battery RA contracts be treated the same?

When determining if an LSE's RA contract with battery (or other storage resources) should be included in the CSP tool, LSEs should consider whether they believe that the operational attributes of the storage resource question will be claimed by another LSE. One of the guiding principles of the CSP tool and the LSE portfolio aggregation process is that the operational attributes of each physical resource on the CAISO grid should be counted only once. Thus if an LSE believes that no other LSE can claim the hourly dispatch of batteries with which they have an RA contract in their CSP tool, the LSE should enter the battery capacity into the tool and receive emissions savings from its dispatch.

33- *Please provide the source of the criteria pollutant emissions intensities in the Clean System Power calculators and explain why the emissions intensities for Biogas-type resources are much greater than for dispatchable gas-type resources?

Hourly, unit-level generation profiles from the SERVM production cost model maintained by CPUC staff are the basis for the hourly generation profiles. SERVM dispatch values originate from a simulation of the Reference System Plan portfolio. SERVM simulates many years of historical conditions in each production cost model run – dispatch data corresponding to only the weather year 2007 is used for the Clean System Power tool. To ensure data quality, fuel consumption is adjusted to be within the bounds of its minimum and maximum efficiency in a small number of hours.

Emissions intensity values for GHG and criteria pollutants (NOx, PM2.5, and SO2) are calculated on an hourly basis for system power (dispatchable gas + unspecified imports), coal, CHP, biogas, and biomass. Hourly emissions factors for each generator class are calculated as the sum of emissions from all generators within that generator class, divided by the sum of generation.

Criteria pollutant emissions for each unit are calculated based on available factors – metric tons of emissions per (1) MWh of generation, or (2) MMBtu of fuel. NOx emissions include different factors for start and normal operations. Criteria pollutant emissions factors for system power do not include any emissions associated with unspecified imports – these emissions factors are calculated using only emissions from in-CAISO dispatchable gas resources. The criteria pollutant hourly emissions intensity values for biomass and biogas are adjusted using minimum and maximum emission intensity cutoffs.

34- *How are LSEs meant to represent GHG/RPS attribute products in the clean system power calculator?

Any energy that would qualify as RPS PCC-1 is considered GHG-free energy and should be entered into the tool.

35- * The CSP tool reports higher emissions than Resolve for the same portfolio. This indicates that in aggregate, LSE portfolios may reflect additional carbon-free generation than the RSP and 38 MMT cases show. Can the CPUC confirm that this result will be considered acceptable, and if so to what amounts?

LSEs can submit portfolios that deviate from the RSP, including a higher build-out than the RSP. The Commission's standard for judging the CSP will be whether LSEs submit 46 MMT conforming portfolios that result in emissions that are equal to their 46 MMT benchmark, and 38 MMT conforming portfolios that result in emissions that are equal to or less than their 38 MMT benchmark.

36- * Many LSEs have pursued RA-only contracts with natural gas plants as well as load hedge contracts (a financial instrument that is not part of the load-resource balance) that are based on system power. However, the CSP calculator currently focuses its emissions calculations for both GHGs and local air pollutants on energy contracts. Can Energy Division staff confirm whether and how they expect to see emissions from RA-only contracts and load hedge contracts included in an LSE's IRP?

The CSP gives system power an emissions factor of about 0.428 MT/MWh, with the exact emissions factor determined by the combination of in-state natural gas generation and imports in that hour. To the extent an LSE is relying on a natural gas RA contract or a system power load hedge contract, those emissions would be picked up in the calculator as system power emissions and be given the same emissions factor. This seems appropriate for the example in this question for two reasons: (a) RA-only gas contracts and load hedge contracts will both rely on natural gas; (b) energy production from these contracts may not be aligned with their hourly load, so they'll be reliant on system power.