Standard LSE Plan

CLEAN ENERGY ALLIANCE

2022 INTEGRATED RESOURCE PLAN

NOVEMBER 1, 2022

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I. Introduction and Executive Summary

a. Introduction

Description of CEA

Clean Energy Alliance is a Joint Powers Authority ("JPA") formed by the communities of Carlsbad, Del Mar and Solana Beach in November 2019.

As a JPA, CEA is a local government agency. CEA is governed by a seven-member board composed of representatives of its member local governments. Through these representatives CEA is controlled by and accountable to the communities CEA serves.

CEA provides retail electric generation services and complementary energy programs to customers within the municipal boundaries of the following communities:

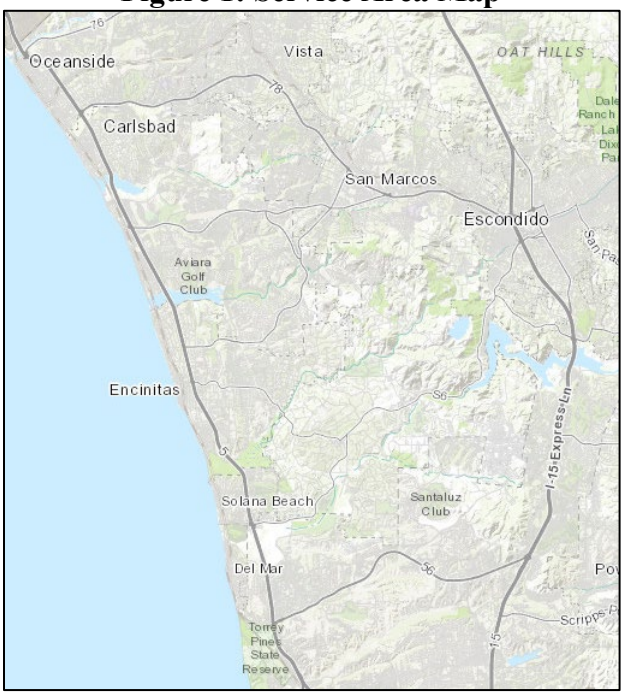
- City Carlsbad
- City of Del Mar
- City of Solana Beach

CEA plans to provide electric generation services and complementary energy programs to customers within the municipal boundaries of the following communities:

- City of Escondido
- City of Oceanside
- City of San Marcos
- City of Vista

CEA began serving load in May 2021, with a customer base of approximately 51,000 residential accounts and 8,000 commercial and industrial accounts. CEA serves (or will serve) as the default power provider for the cities of Carlsbad, Del Mar, Escondido, Oceanside, San Marcos, Solana Beach and Vista.

Figure 1: Service Area Map



CEA currently serves approximately 51,000 residential accounts and 8,300 commercial and industrial accounts. CEA provides retail generation service to a variety of customer classes, including residential, small and medium commercial accounts, large industrial consumers, and agricultural and pumping facilities. CEA's current service area has a population of approximately 132,000, the majority of which live in households or work at businesses that receive generation service from CEA. In 2022, CEA had an estimated peak load of 139 MW, and energy usage of 620 GWh.

CEA's Mission

CEA was formed for the express purpose of empowering its member communities to choose the generation resources that reflect their specific values and needs, addressing climate change by reducing energy-related greenhouse gas emissions, promoting electrical rate stability and cost savings, and fostering community choice and local economic benefits such as job creation, local energy programs and local power development. CEA's purpose is to be an energy services provider, which benefits the community through the delivery of cleaner and more locally produced electricity, demand reduction, economic investment and competitive rates for residents, businesses, and municipal facilities in the service territory. Consistent with Public Utilities Code Sections 366.2(a)(5) and 454.52 (b)(3),[1] all procurement by CEA, including the portfolios set forth in this Integrated Resource Plan ("IRP"), must comply with policy direction provided from CEA's governing board.

[1] All further citations to statute are to the California Public Utilities Code unless otherwise noted.

Introduction to CEA's IRP

In accordance with the requirements of California Public Utilities Code ("PUC") Sections 454.51 and 454.52 and California Public Utilities Commission ("Commission") Decision ("D.") D.22-02-004, *Administrative Law Judge's Ruling Finalizing Load Forecasts and Greenhouse Gas Emissions Benchmarks for 2022 Integrated Resource Plan Filings*,[2] and guidance provided by the Commission's Energy Division[3], CEA is providing its load-serving entity ("LSE")-specific IRP to the Commission for certification and use in the Commission's statewide planning process.

In addition to this narrative, CEA's IRP includes the following documents:

- CEA's 2030 38 MMT & 2035 30 MMT Resource Data Template and Clean System Power Calculator
- CEA's 2030 30 MMT & 2035 25 MMT Resource Data Template and Clean System Power Calculator
- CEA's IRP Verification

As directed in D.22-02-004[4] and the *Final Ruling*, CEA is submitting two Preferred Conforming Portfolios in this IRP. The first Preferred Conforming Portfolio achieves emissions that are equal to or less than the LSE's proportional share of the 38 million metric ton ("MMT") greenhouse gas ("GHG") target by 2030 and 30 MMT by 2035 ("30 MMT"). The second Preferred Conforming Portfolio achieves emissions that are equal to or less than the LSE's proportional share of 30 MMT by 2030 and 25 MMT by 2035 ("25 MMT").

Projecting resource needs over the planning horizon covered by the IRP is a fluid process and CEA expects changes over time. The future resources identified in CEA's IRP represent CEA's current good-faith projection of the resource mix that will be procured over the IRP planning horizon. Such projections are based on best available information regarding planning directives, CEA policy, resource availability and other key considerations. The resources identified in future iterations of CEA's IRP may change due to new information and evolving circumstances, and the ultimate resource mix that CEA actually procures (in future years) may differ from what is reflected in this plan due to a number of variables, including availability of supply, technology changes, price of supply, and/or other market or regulatory considerations.

Examples of future regulatory changes include the upcoming "Slice of Day" framework for the Resource Adequacy ("RA") program,[5] as well as structural, programmatic changes to the IRP

[2] Rulemaking ("R.") 20-05-003, *Administrative Law Judge's Ruling Finalizing Load Forecasts and Greenhouse Gas Emissions Benchmarks for 2022 Integrated Resource Plan Filings* ("Final Ruling"), June 15, 2022.

[3] Energy Division Guidance can be accessed at: https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/electric-power-procurement/long-term-procurement-planning/2022-irp-cycle-events-and-materials.

[4] D.22-02-004 at 2.

[5] D.22-06-050.

program.[6] Though the impact of these changes is uncertain at this time, such changes have the potential to materially reshape how capacity and energy are valued for reliability purposes, and in turn, such changes may impact CEA's future procurement decisions. Through its involvement and membership in the California Community Choice Association ("CalCCA"), CEA will continue to monitor and engage in Commission proceedings and incorporate pertinent planning and procurement adaptations as necessary.

Board Council Approval of IRP

In compliance with Public Utilities Code Section 454.52(b)(3), this IRP was formally submitted to the CEA's governing board for approval based on the IRP's compliance with Sections 454.51 and 454.52 (the "IRP Statute") and all relevant council-adopted procurement requirements of CEA's governing council. On October 20, 2022, the CEA's board adopted a Resolution which formally approved this IRP and adopted CEA's 30 MMT and 25 MMT Preferred Conforming Portfolios ("PCPs"). CEA's Resolution also made the following determinations regarding CEA's PCPs:

- CEA's PCPs are expected to achieve economic, reliability, environmental, security, and other benefits and performance characteristics that are consistent with the goals set forth in Section 454.52(a)(1) (A-I).
- CEA's PCPs include a diversified procurement portfolio consisting of both short-term and long-term electricity and electricity-related and demand reduction products.
- CEA's PCPs achieve the resource adequacy requirements established pursuant to Public Utilities Code Section 380.
- CEA's PCPs are consistent with the procurement timing, resource mix, and operational attributes of both the Commission's Preferred System Portfolio ("PSP").[7]
- CEA's PCPs are compliant with all CEA board-adopted procurement directives.

Request for Certification

CEA respectfully requests that the Commission certify this IRP.

As both the Legislature and the Commission have recognized, the Legislature has granted CCAs broad authority to procure resources on behalf of their respective customers, an authority limited only where "other generation procurement arrangements have been expressly authorized by statute."[8] Likewise, the Legislature has granted CCAs autonomy in setting their own rates and

[6] See R.20-05-003, *Administrative Law Judge's Ruling Seeking Comments on Staff Paper on Procurement Programs and Potential Near-Term Actions to Encourage Additional Procurement* (September 8, 2022), Attachment A.

[7] In D.22-02-004 at 105 and Ordering Paragraph ("OP") 8, the Commission adopted the 30 MMT Core Portfolio with 2020 IEPR Demand and High Electric Vehicle ("EV") Penetration Scenario.

[8] PUC Section 366.2(a)(5).

managing interactions with their customers.[9] CEA understands that the Commission has three primary interests in the CCA IRP process:

- Ensuring that CCA IRPs provide requisite procurement information needed by the Commission to develop its statewide plan.[10]
- Ensuring that CCAs' current and planned procurement is consistent with the RA requirements established pursuant to PUC Section 380.5.[11]
- Ensuring that CCAs' current and planned procurement satisfies the CCA's share of renewables integration resources identified in the Commission's PSP, and that the CCA either self-provides or pays for investor-owned utility ("IOU") procurement to support its share of any renewable integration shortfall.[12]

CEA has prepared its IRP with these interests in mind, and thanks the Commission for recognizing and preserving CCA procurement autonomy as well as the benefits of a collaborative planning approach with CCA organizations in its certification review of CEA's IRP.

b. Executive Summary

This narrative provides a detailed description of the development and content of CEA's PCPs, each portfolio's compliance with applicable requirements, and an action plan detailing CEA's next steps (to promote conformance with such requirements).

CEA developed its IRP through the following steps:

- CEA compiled data for its existing energy contracts, including Voluntary Allocation Market Offer and GHG-free allocations from SDG&E, as well as RA capacity contracts, and its share of capacity for allocated Cost Allocation Mechanism ("CAM") resources.
- For each IRP planning year, CEA identified its short positions relative to known planning targets and its assigned load forecast.
- CEA populated the Resource Data Template with all current contracts.
- CEA compiled detailed information on projects for which it is currently negotiating power purchase agreements, including information regarding project status and timing.

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[9] D.05-12-041 at 9-11 ("Nothing in the statute directs the CPUC to regulate the CCA's program except to the extent that its programs may affect utility operations and the rates and services to other customers. For example, the statute does not require the CPUC to set CCA rates or regulate the quality of its services… We are confident that existing law protects CCA customers. Entities of local government, such as CCAs, are subject to numerous laws that will have the effect of protecting CCA customers and promoting accountability by CCAs…").

[10] D.19-04-040 at 17-18 ("The Commission's portfolio aggregation and evaluation process, which relies of fulfillment of IRP filing requirements by LSEs, is the only process capable of assessing the overall needs of the CAISO grid and meeting the statewide GHG, reliability, and least-cost goals collectively. While LSEs may use their IRP process to meet local planning needs as well, the statewide planning function is the statutorily required process . . .").

[11] Section 454.52(b)(3)(C).

[12] Section 454.51.

- CEA identified future contracts it expects to secure for new solar, storage, biomass, geothermal, hybrid and wind generation. CEA prioritized the selection of future resources to ensure that CEA's overall portfolio of new resources is varied, meets all regulatory goals, meets the goals expressed by CEA's governing board, and is estimated to minimize costs to customers, subject to applicable mandates. CEA added generic future contracts with existing resources, including large hydroelectric generators, to help fill its remaining open positions.
- CEA used the Commission's Clean System Power Calculator Tool to check the GHG emissions associated with the resulting portfolio to ensure that these emissions are less than, CEA's assigned share of the 30 MMT benchmarks; CEA added planned purchases of additional energy from renewable or GHG-free resources in sufficient volume to ensure that portfolio emissions were less than CEA's assigned share of the 30 MMT GHG benchmark.
- CEA identified the resulting portfolio as its 30 MMT PCP.
- Using the 30 MMT PCP as a starting point, CEA replaced planned system energy purchases with additional GHG-free energy procurement until the portfolio reflected emissions less than, CEA's assigned share of the 25 MMT GHG benchmarks.
- CEA identified the resulting portfolio as its 25 MMT PCP.
- CEA checked both its 30 MMT PCP and its 25 MMT PCP for reliability by comparing the total portfolio capacity against CEA's RA requirements as shown in the Reliability tab and adding in sufficient RA capacity to ensure reliability. CEA further established that its planned incremental capacity procurement met or exceeded its pro rata share of the related incremental capacity procurement obligation.

CEA reached the following findings regarding its 25 MMT Portfolio:

- CEA's 25 MMT Portfolio includes the procurement of the following new resources:
    - New hybrid resources totaling 122 MW solar/40 MW battery storage
    - New wind resources totaling 134 MW
    - New grid connected battery storage of 15 MW
    - New long duration storage of 35 MW
    - New geothermal resources of 30 MW
- CEA's 25 MMT Portfolio provides for the following overall resource mix in 2035:
    - 50 GWh of Biomass
    - 300 GWh of Geothermal
    - 15 GWh of Small Hydro
    - 820 GWh of Wind
    - 381 GWh of Solar
    - 320 GWh of hybrid Solar, with 40 MW of Battery Storage
    - 15 MW of Short Duration Battery Storage
    - 35 MW of Long Duration Storage
    - 213 MW of Natural Gas/Baseload/Other (Capacity-Only)

CEA's 25 MMT Portfolio is consistent with procurement timing, resource quantities, and general resource attributes identified in the PSP.

- CEA's 25 MMT portfolio would have 2030 emissions of .19 MMT and 2035 emissions of .09 MMT, which is equivalent to or less than CEA's assigned share of 2030 and 2035 emissions.
- CEA's 25 MMT portfolio meets all relevant reliability metrics.
- CEA's 25 MMT portfolio provides approximately CEA's load-proportional share of renewable integration resources.
- CEA's 25 MMT portfolio is also consistent with the Commission's PSP and can be used in a 25 MMT consolidated statewide portfolio.

CEA reached the following findings regarding its 30 MMT portfolio:

- CEA's 30 MMT portfolio includes the procurement of the following new resources:
    - New hybrid resources totaling 122 MW solar/40 MW battery storage
    - New wind resources totaling 134 MW
    - New grid connected battery storage of 15 MW
    - New long duration storage of 35 MW
    - New geothermal resources of 30 MW
- CEA's 30 MMT portfolio provides for the following overall resource mix in 2035:
    - 50 GWh of Biomass
    - 300 GWh of Geothermal
    - 15 GWh of Small Hydro
    - 820 GWh of Wind
    - 381 GWh of Solar
    - 320 GWh of hybrid Solar, with 40 MW of Battery Storage
    - 15 MW of Short Duration Battery Storage
    - 35 MW of Long Duration Storage
    - 219 MW of Natural Gas/Baseload/Other (Capacity-Only)

CEA's 30 MMT portfolio conforms to the procurement timing, resource quantities, and general resource attributes identified in the PSP.

- CEA's 30 MMT portfolio would have 2030 emissions of .20 MMT and 2035 emissions of .08 MMT, which is equivalent to or less than CEA's assigned share of 2030 and 2035 emissions.
- CEA's 30 MMT portfolio meets all relevant reliability metrics.
- CEA's 30 MMT portfolio provides approximately CEA's load-proportional share of renewable integration resources.
- CEA's 30 MMT portfolio is also consistent with the Commission's PSP and can be used in a 30 MMT consolidated statewide portfolio.

To implement its PCP, CEA is adopting the action plan described in Section IV, below. This action plan consists of the following steps:

- CEA will periodically solicit offers for new renewable generation and storage projects. These resources are typically secured through long-term power purchase agreements. CEA expects to secure power purchase agreements for new projects in multiple solicitations conducted over the next several years.

- Periodically throughout the year, CEA will solicit offers for short-term renewable energy, resource adequacy, system energy, and other products needed to balance the portfolio and adhere to position limits established through CEA's risk management policy and practices. These solicitations may take the form of a formal request for offers processes, bilateral discussions, and/or transactions arranged through broker markets.
- CEA will continue to procure resources to meet any remaining assigned requirements from D.19-11-016 and D.21-06-035, as well as the specific sub-categories from that decision.

II. Study Design

a. Objectives

CEA had the following objectives in performing the analytical work to develop its IRP:

1. Identify a 30 MMT PCP with emissions less than CEA's proportional share of the 30 MMT GHG reduction benchmarks, as determined using the Commission's emissions calculator.
2. Identify a 25 MMT PCP and ensure that the emissions are less than CEA's proportional share of the 25 MMT GHG reduction benchmarks, as determined using the Commission's emissions calculator.
3. Identify 30 and 25 MMT PCPs that achieve economic, reliability, environmental, security, and other benefits and performance characteristics that are consistent with the goals set forth in Section 454.52(a)(1) (A-I).
4. Identify diverse and balanced 30 and 25 MMT PCPs that include both short-term and long-term electricity products as well as electricity-related demand reduction products.
5. Identify portfolios that achieve the resource adequacy requirements established pursuant to PUC Section 380 and provide CEA's share of system reliability and renewable integration resources.
6. Identify portfolios that comply with all of CEA's Board-adopted procurement directives.
7. Identify portfolios that are compliant with CEA's obligations under the Renewables Portfolio Standard ("RPS") program.
8. Identify portfolios that are cost-effective and minimize rate impacts on CEA's customers.

b. Methodology

i. Modeling Tool(s)

In developing its planned portfolios, CEA used the modeling performed by the Energy Division using RESOLVE and SERVM and incorporated applicable outputs into the RDTv3 and CSP templates as a starting point. After evaluating related results, CEA consulted with CalChoice, leveraging its extensive experience and expertise in the areas of resource planning and procurement, to construct CEA's own, internally developed models to quantify portfolio targets

for renewable energy content, capacity, and portfolio GHG emissions, as well as physical and financial positions conforming with CEA's currently effective risk management policies and business practices.

CEA utilized its commercial energy trading and risk management system to develop and monitor its positions, market exposure, credit exposure, value-at-risk, and other risk management metrics. CEA has maintained a record of all such transactions in this system for several years and plans to continue using this system to facilitate transaction management, resource planning, and risk management activities.

CEA used the outputs of its energy trading and risk management system to develop reports and models which were then analyzed to assess annual, monthly, and hourly open positions by considering all forecasted electric loads and expected deliveries from CEA's resource portfolio. CEA also used a proprietary financial model to project power supply costs based on existing and planned procurements as well as an overall financial assessment of revenues, costs, and cash flows. Current market conditions were considered when compiling any costs associated with expected/planned purchases; actual costs, based on existing procurement contracts, were incorporated as appropriate. Similar to the aforementioned energy trading and risk management system, CEA has used this financial model for several years and has found it to be highly effective in supporting the financial planning needs of its CCA program.

For new resource selection, CEA relied upon the modeling and assumptions in the Preferred System Portfolio, CEA's ongoing and recent procurement experience, and consultation with CalChoice, which helped shape assumptions related to resource availability and cost. In addition, CEA's new resource selection reflected the preferences of its governing board, including considerations related to resource location and availability.

GHG emissions were assessed using the Commission's Clean System Power tool for the 30 MMT and 25 MMT portfolio variations.

i. Modeling Approach

Load Forecast

CEA developed this IRP using its assigned load forecast from the file 2022 Final GHG Emission Benchmarks for LSEs[13] (also contained in the CSP templates), as directed in the *Final Ruling*.

[13] See *2022 Final GHG Emission Benchmarks for LSEs, LSE Demand Forecast* (June 28, 2022) (hereinafter "GHG_Benchmarks"), *available at* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2022-irp-cycle-events-and-materials/2022-final-ghg-emission-benchmarks-for-lses_public.xlsx.

Table 1: CEA's 2023-2035 Load Forecast (GWh)

Year	Load Forecast
2023	1,266.71
2024	1,487.19
2025	1,496.06
2026	1,504.22
2027	1,512.16
2028	1,520.15
2029	1,528.80
2030	1,538.83
2031	1,551.38
2032	1,560.79
2033	1,571.53
2034	1,580.06
2035	1,589.35

Load Shape

In developing its portfolio CEA used the default load shape from the Clean System Power Calculator, which reflects the California Independent System Operator ("CAISO") hourly system average load shape forecast for the 2021 IEPR Mid Case.[14]

Use of this load shape does not change CEA's total annual energy volumes for both load and load modifiers, and these energy volumes remain consistent with CEA's assigned load forecast.

Load-Proportional GHG Emissions Benchmark

CEA's modeling was assessed against its 2035 load-proportional share of the respective 30 MMT and 25 MMT benchmarks, as assigned in Commission's *GHG Benchmarks*, which yielded the following results:

Table 2: CEA's Assigned Shares of GHG Reduction Benchmarks[15]

2035 Load (GWh)	Proportion of 2035 Load within IOU Territory	2035 GHG Benchmark – 30 MMT Scenario	2035 GHG Benchmark – 25 MMT Scenario
1,589.35	8.84%	0.20	0.16

Compiling Existing Resources

To populate its baseline resource templates, CEA added existing resources from the following procurement categories:

- Energy Contracts.
- Capacity (Resource Adequacy) Contracts.

[14] *Final Ruling* at 3.

[15] *GHG Benchmarks* at Tab "Benchmarks_30 MMT" and "Benchmarks_25 MMT".

- CEA's assigned share of capacity for CAM resources, taken from Energy Division's *Aggregated CAM Resources for LSEs Plan Development* (September 29, 2022).
- CEA's selected Voluntary Allocation and Market Opportunities ("VAMO") allocation of RPS resources from San Diego Gas and Electric Company ("SDG&E")
- CEA's allocation of GHG-free resources from SDG&E

Selecting New Resources

To identify its new resource procurement opportunities, CEA first determined the new resource capacity it intends to add each year, which considered resource needs (open positions), long-term renewable contracting requirements, renewable portfolio standards, resource adequacy requirements, the need for incremental resource adequacy capacity to contribute to system reliability and renewable integration needs, the potential for technological improvements, and financial considerations. CEA selected resource types based on its experience with competitive solicitations for new renewable and storage resources and its experience in procuring resource adequacy resources, as well as consideration of the studies and modeling underlying the adopted PSP.

Confirming Reliability

CEA's portfolios were evaluated to ensure that sufficient dependable capacity (net qualifying capacity) would be available to meet peak load requirements, as shown in the RDTv3. This included a 14% Perfect Capacity ("PCAP") Planning Reserve Margin.[16] CEA used technology-specific Effective Load Carrying Capacity ("ELCC") factors provided by the Commission to assess the contribution of each resource to system reliability. In order to ensure that its portfolio met the reliability requirements, CEA added sufficient short-term RA capacity in each year. CEA's portfolios were designed to ensure that current incremental resource adequacy capacity obligations from D.19-11-016 and D.21-06-035 will be met.

Calculating GHG Emissions

CEA calculated the emissions associated with its 30 MMT PCP and its 25 MMT PCP using the Commission's Clean System Power calculator. The assigned load forecast and default load shapes and behind the meter adjustments were used for this assessment, along with the planned supply portfolios. The results were checked against the assigned GHG benchmarks included in the Clean System Power tools.

III. Study Results

a. Conforming and Alternative Portfolios

As required by the Commission, CEA is submitting two conforming portfolios – a 30 MMT Conforming Portfolio that achieves CEA's share of the 38 MMT by 2030 and 30 MMT by 2035

[16] See *Workshop: Reliability Filing Requirements for Load Serving Entities' 2022 Integrated Resource Plans-Results of PRM and ELCC Studies* (July 29, 2022) at Slide 31.

GHG targets; and a 25 MMT Conforming Portfolio that achieves CEA's share of the 30 MMT by 2030 and 25 MMT by 2035 GHG targets. CEA is not submitting alternative portfolios.

CEA's 30 MMT Conforming Portfolio

Table 1 included in Appendix A to this Narrative provides a summary of CEA's 2035 30 MMT Portfolio, identifying resources by type and distinguishing between the following procurement categories:

- Existing resources (energy and capacity) that CEA owns or contracts with, consistent with definitions provided in the Resource Data Template.
- Existing resources (energy and capacity) that CEA plans to contract with in the future.
- Existing resources (capacity) that CEA partially pays for through CAM.
- New Resources (energy and capacity) that are under development that CEA is planning to procure.
- Future new resources (energy and capacity) that CEA is planning to procure.

In summary, to meet CEA's projected 2035 energy demand of 1,589.35GWh, CEA has selected a 2035 30 MMT Conforming Portfolio composed primarily of the following resources:

- Existing solar (planned procurement) – 350 GWh
- Existing wind (planned procurement) – 275 GWh
- Existing small hydro (planned procurement) – 15MW
- Existing biomass (planned procurement) – 50 GWh
- Existing geothermal (planned procurement) 75 GWh
- New wind (future resources) – 525 GWh
- New short duration storage (in development) – 60 MWh
- New long duration storage (future resources) – 271 MWh
- New geothermal (future resources) – 225 GWh
- New hybrid (future resources) – 320 GWh solar/160 GWh

Additionally, CEA's 2035 30 MMT Conforming Portfolio includes capacity-only resources composed primarily of the following resources:

- CAM, Demand Response and Energy Efficiency Allocations – 102 MW
- Existing natural gas, baseload, and other (planned procurement) – 219 MW

CEA's portfolio includes a mix of existing and new resources. Approximately 375 MW of CEA's 30 MMT portfolio is composed of new resources, reflecting CEA's role as an active player in the State's development of new renewable and storage resources. Furthermore, CEA's 30 MMT portfolio is comprised of a mix of resources in which CEA can minimize customer rate impacts while still achieving the State's GHG-reduction targets.

CEA's 30 MMT Conforming Portfolio Is Consistent with the Preferred System Plan

The new resources included in CEA's 30 MMT Conforming Portfolio are consistent with the PSP 2035 new resource mix. The Commission adopted the PSP, which established the 38 MMT

GHG target by 2030 and 30 MMT GHG target by 2035 and adopted the resources in Tables 5 and 6 of D.22-02-004.[17]

The Decision requires that LSEs procure resources in the following categories: Gas, Biomass, Geothermal, Wind, Wind on New-Out-of-State Transmission, Offshore Wind, Utility-Scale Solar, Battery Storage, Pumped (Long-Duration) Storage, Shed Demand Response.

As demonstrated in the following table, CEA's 30 MMT portfolio is generally consistent with CEA's proportional share of new procurement for each of the "resource types" identified in D.22-02-004:

Table 3: Comparison of CEA's 30 MMT Conforming Portfolio vs PSP

Resource Category	PSP (MW)	CEA's Proportional Share of PSP New Resources (MW)	CEA's 30 MMT Conforming Portfolio (MW)
Gas	-	-	-
Biomass	134	1	0
Geothermal	1,135	10	30
Wind	3,562	30	0
Wind On New OOS Transmission	4,636	39	71
Offshore Wind	4,707	40	63
Utility-Scale Solar	17,418	147	122
Battery Storage	17,350	146	55
Pumped (Long-Duration) Storage[18]	1,000	8	35
Shed Demand Response	977	8	0

CEA's proportional share of the PSP New Resources and the resources reflected in CEA's 30 MMT Portfolio are relatively aligned. However, CEA has made choices that differ from the PSP. This reflects CEA's decisions about what best meets the needs of its customers. CEA has chosen to increase its procurement of out-of-state and offshore wind and geothermal, which generally have higher capacity factors than the wind or solar that has been reduced. Further, CEA has procured a higher proportion of long-duration storage, and less shorter duration storage. These choices reflect CEA's efforts to procure resources to match its load profile.

[17] D.22-02-004 at 101-105. Note the Decision references Tables 6 and 7, but this was presumably a typographical error since there was no foregoing Table 7. Thus, CEA understands the Decision to be referencing Tables 5 and 6.

[18] CEA understands the pumped storage to also incorporate long-duration energy storage with similar characteristics (i.e., maximum discharge for at least 8 hours). References throughout to "Pumped (Long-Duration) Storage" should be read consistently with this understanding.

CEA's 25 MMT Conforming Portfolio

Table 2 included in Appendix A to this Narrative provides a summary of CEA's 25 MMT Conforming Portfolio (by 2035), identifying resources by type and distinguishing between the following procurement categories:

- Existing resources (energy and capacity) that CEA owns or contracts with, consistent with definitions provided in the Resource Data Template.
- Existing resources (energy and capacity) that CEA plans to contract with in the future.
- Existing resources (capacity) that CEA partially pays for through CAM.
- New Resources (energy and capacity) that are under development that CEA is planning to procure.
- Future new resources (energy and capacity) that CEA is planning to procure.

In summary, to meet CEA's projected 2035 energy demand of 1589.35 GWh, CEA has selected a 2035 25 MMT Conforming Portfolio composed primarily of the following resources:

- Existing solar (planned procurement) – 350 GWh
- Existing wind (planned procurement) – 275 GWh
- Existing small hydro (planned procurement) – 15MW
- Existing biomass (planned procurement) – 50 GWh
- Existing geothermal (planned procurement) 75 GWh
- New wind (future resources) – 525 GWh
- New short duration storage (in development) – 60 MWh
- New long duration storage (future resources) – 271 MWh
- New geothermal (future resources) – 225 GWh
- New hybrid (future resources) – 320 GWh solar/160 GWh

Additionally, CEA's 2035 25 MMT Conforming Portfolio includes capacity-only resources composed primarily of the following resources:

- CAM, Demand Response and Energy Efficiency Allocations – 102 MW
- Existing natural gas, baseload, and other (planned procurement) – 213 MW

CEA's portfolio includes a mix of existing and new resources. Approximately 375 MW of CEA's 2035 portfolio is composed of new resources, reflecting CEA's role as an active player in the State's development of new renewable and storage resources. Furthermore, CEA's 2035 portfolio is comprised of a mix of resources in which CEA can minimize customer rate impacts while still achieving the State's GHG-reduction targets.

CEA's 25 MMT Conforming Portfolio Is Consistent with the Preferred System Plan

The new resources included in CEA's 25 MMT Conforming Portfolio are consistent with the PSP new resource mix. The Commission adopted the PSP portfolio, which established the 38 MMT GHG target by 2030 and 30 MMT GHG target by 2035 and adopted the resources in

Tables 5 and 6.[19] Subsequently, the Commission required load serving entities to also prepare a Conforming Portfolio meeting 30 MMT GHG by 2030 and 25 MMT GHG by 2035.[20]

The Decision requires that LSEs procure resources in the following categories: Gas, Biomass, Geothermal, Wind, Wind on New-Out-of-State Transmission, Offshore Wind, Utility-Scale Solar, Battery Storage, Pumped (Long-Duration) Storage, Shed Demand Response.

As demonstrated in the following table, CEA's 25 MMT portfolio is generally consistent with CEA's proportional share of new procurement for each of the "resource types" identified in D.22-02-004:

Table 4: Comparison of CEA's 25 MMT Conforming Portfolio vs PSP New Resources

Resource Category	PSP (MW)	CEA's Proportional Share of PSP New Resources (MW)	CEA's 25 MMT Conforming Portfolio (MW)
Gas	-	-	-
Biomass	134	1	0
Geothermal	1,135	10	30
Wind	4,270	36	0
Wind On New OOS Transmission	4,828	41	71
Offshore Wind	4,707	40	63
Utility-Scale Solar	21,794	184	122
Battery Storage	17,742	150	55
Pumped (Long-Duration) Storage[21]	1,000	8	35
Shed Demand Response	767	6	0

CEA's proportional share of the PSP New Resources and the resources reflected in CEA's 25 MMT Portfolio are relatively aligned. However, CEA has made choices that differ from the PSP. This reflects CEA's decisions about what best meets the needs of its customers. CEA has chosen to increase its procurement of out-of-state and offshore wind and geothermal, which generally have higher capacity factors than the wind or solar that has been reduced. Further, CEA has procured a higher proportion of long-duration storage, and less shorter duration storage. These choices reflect CEA's efforts to procure resources to match its load profile.

[19] D.22-02-004 at 101-105. Note the Decision references Tables 6 and 7, but this was presumably a typographical error since there was no foregoing Table 7. Thus, CEA understands the Decision to be referencing Tables 5 and 6.

[20] *Final Ruling* at 9-10.

[21] CEA understands the pumped storage to also incorporate long-duration energy storage with similar characteristics (i.e., maximum discharge for at least 8 hours). References throughout to "Pumped (Long-Duration) Storage" should be read consistently with this understanding.

b. Preferred Conforming Portfolios

ii. 30 MMT Preferred Conforming Portfolio

As demonstrated in Table 1 included in Appendix A to CEA's IRP, CEA's 30 MMT PCP consists of a combination of:

- Biomass
- Geothermal
- Wind
- Wind on New-Out-of-State Transmission
- Offshore Wind
- Utility-Scale Solar
- Battery Storage
- Pumped (Long-Duration) Storage
- Hybrid solar/storage
- Natural Gas/Baseload/Other (capacity only)

As stated above, in accordance with Section 454.51(b)(3), CEA's governing board has determined that the resource mix in 30 MMT PCP achieves "economic, reliability, environmental, security, and other benefits and performance characteristics that are consistent with the goals set forth in [Section] 454.51(a)(1)." These benefits and characteristics are discussed as follows. CEA notes that both the 30 MMT and 25 MMT portfolios have the same resources in 2035, and differ only slightly in 2030, with the 25 MMT portfolio having more GHG-free resources. CEA prefers the 25 MMT portfolio discussed in the next section over the 30 MMT PCP. The 25 MMT PCP moves CEA toward substantial emissions reductions slightly quicker for small cost, and also provides a diverse and reliable portfolio. These benefits and characteristics are discussed in the following sections.

GHG Reduction Goals

CEA's 30 MMT PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(A) goal of meeting the Commission's 30 MMT GHG reduction benchmark (38 MMT GHG by 2030).[22] The 2035 emissions from CEA's 30 MMT PCP are equivalent to CEA's load-proportional share of the 30 MMT by 2035 emissions target. CEA's proportional share of the 30 MMT GHG target is 0.26 MMT in 2030 and 0.20 MMT in 2035. According to the Commission's emissions calculator, CEA's 30 MMT PCP would account for 0.20 MMT in 2030 and 0.08 MMT in 2035 emissions, which is less than the GHG Benchmarks for CEA.

Renewable Energy

CEA's 30 MMT PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(B) goal of ensuring that portfolios are composed of at least 60% eligible

[22] See D.22-02-004 at 105.

renewable resources. In 2035 CEA's 30 MMT PCP portfolio would consist of 75% eligible renewable generation, which exceeds the 60% requirement.

Enable Each Electrical Corporation to Fulfill Its Obligation to Serve Customers at Just and Reasonable Rates

CEA sets rates competitively with SDG&E's rates. As detailed in Section III.e., below, CEA is committed to serving its customers at competitive rates. In addition to setting rates that are competitive with SDG&E, CEA works to minimize rate volatility by constructing a balanced and conservatively hedged power supply portfolio, building prudent financial reserves consistent with CEA's reserve policy, and minimizing rate changes to once per year, whenever possible.

Minimizing Bill Impact

CEA's 30 MMT PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(D) goal of minimizing the impact of planned procurement on ratepayers' bills. CEA's 30 MMT PCP portfolio consists primarily of renewable resources that generally support a least-cost, best-fit procurement strategy.

CEA prioritizes cost competitiveness, reliability, use of renewable energy and local economic development amongst its primary concerns. CEA anticipates that bill impacts will be minimized during its planned portfolio transition through the pursuit of a diversified resource mix that seeks to minimize exposure(s) that could otherwise occur by overemphasizing resources located within specific geographic areas, relying on a limited subset of technology types and/or purchasing from a limited pool of suppliers/developers, amongst other considerations. CEA is also aware of the risks associated with certain renewable-only generating configurations that limit the buyer's ability to re-shape deliveries to times of the day when negative prices and, possibly, curtailments are less likely to occur. With this concern in mind, CEA has carefully considered and incorporated energy storage opportunities within its resource mix, which should promote grid reliability during California's transition to an increasingly clean/renewable energy mix while reducing the potential for unforeseen costs (due to negative pricing) and/or reduced renewable energy deliveries related to curtailment. For example, coupling new-build solar with battery storage increases the capacity value of such projects and provides limited dispatchability for the solar generation, reducing risks related to curtailment and negative pricing. Further, CEA's 30 MMT PCP reduces exposure to volatile natural gas prices as well as bill impacts that may result from periodic spikes in fossil fuel prices.

Ensuring System and Local Reliability

CEA's 30 MMT PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(E) goal of ensuring system and local reliability. The 30 MMT PCP meets system resource adequacy requirements as detailed in Section III.f., CEA's portfolio assumes CAM allocations and CAM resources, consistent with what is described in the most recently issued CAM allocations. When possible, CEA prioritizes procurement in local areas to strengthen local reliability.

As it has done in the past, and as shown in most state planning studies, CEA anticipates that it will meet a portion of its reliability needs through capacity-only contracts with natural gas plants. CEA has contracted with demand response resources to fulfill some of its RA needs and is

exploring other opportunities for demand response. CEA is hopeful that new technologies will be developed that will provide cleaner resources with the reliability characteristics of California's existing natural gas fleet, and it will continue to investigate such resources as appropriate. This noted, one of CEA's primary concerns is supporting ongoing grid reliability, which compels the CCA program, in the near term, to include natural gas resources amongst its resource adequacy purchases until such time that clean, reliable capacity becomes more readily available.

Ensure that at least 65% of RPS Procurement is From Long-Term Contracts

Consistent with Section 454.52(a)(1)(F), CEA is on pace to meet the requirement that 65% of its RPS procurement must come from contracts of 10 years (long-term or more for each compliance period. For the current compliance period, CEA has procured 87% from long-term contracts. Additionally, the majority of the resources shown in CEA's 30 MMT PCP are expected to be acquired through long-term contracts. CEA will continue to procure renewables through short-term contracts when opportunities present themselves for cost-efficient procurement and when doing so would reduce any remaining dependency on system power.

Strengthen the diversity, sustainability, and resilience of the bulk transmission and distribution systems, and local communities

CEA's 30 MMT PCP achieves results and performance characteristics that strengthen the diversity, sustainability and resilience of the bulk transmission and distribution systems, as well as local communities, meeting Section 454.52(a)(1)(G). CEA's 30 MMT PCP relies on procurement from a variety of resource types as well as storage resources incorporated in hybrid solar and storage configuration. CEA believes that the complementary nature of the solar and storage in hybrid resources makes better use of the existing transmission system. CEA carefully evaluates the long-term generation load-matching and congestion risks of new resources and weighs its options in the context of its existing supply and net demand on an hourly basis for the full duration of any contract period.

As described below, CEA is actively pursuing the procurement of or has recently purchased capacity to meet the sub-category requirements of D.21-06-035, which includes long-duration storage, clean-firm resources like geothermal, and resources to replace the Diablo Canyon Power Plant. Additionally, CEA has recently procured demand response capacity resources, providing additional system diversity.

Demand-Side Energy Management

CEA's 30 MMT PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(G) goal of enhancing demand-side energy management. CEA continues to explore and pursue demand-side management programs such as demand response, energy efficiency, and behind the meter energy storage solutions. As part of CEA's procurement toward D.21-06-035, as discussed in more detail in Section IV.a.ii., CEA has contracted for demand response resources to meet a portion of its requirements.

Minimizing Localized Air Pollutants with Emphasis on Disadvantaged Communities ("DACs")

CEA's 30 MMT PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(l) goal of minimizing localized air pollutants and other GHG emissions with early priority on disadvantaged communities. CEA's 30 MMT PCP relies primarily on renewable generation, and this portfolio is expected to exhibit relatively low GHGs and localized air pollution emissions. CEA's 30 MMT PCP minimizes CEA's reliance on unspecified system power, instead opting for renewable and hydroelectric generation procurement/development whenever feasible. Results from the CSP tool indicate the following localized air pollutants associated with CEA's 30 MMT PCP in 2035:

- NOx: 47 tonnes/year
- PM 2.5: 16 tonnes/year
- SO2: 5 tonnes/year

These emissions are expected to result from the planned use of system energy and biomass energy in the 30 MMT PCP, as well as emissions from Combined Heat and Power ("CHP") resources and system energy assigned to the CEA portfolio by the CSP tool. In evaluating new biomass resources, CEA will prioritize development outside of DACs to the greatest practical. extent.

iii. 25 MMT Preferred Conforming Portfolio

As demonstrated in Table 2 included in Appendix A to CEA's IRP, CEA's 25 MMT Preferred Conforming Portfolio consists of a combination of:

- Biomass
- Geothermal
- Wind
- Wind on New-Out-of-State Transmission
- Offshore Wind
- Utility-Scale Solar
- Battery Storage
- Pumped (Long-Duration) Storage
- Hybrid solar/storage
- Natural Gas/Baseload/Other (capacity only)

As stated above, in accordance with Section 454.51(b)(3), CEA's governing board has determined that the resource mix in its 25 MMT PCP achieves "economic, reliability, environmental, security, and other benefits and performance characteristics that are consistent with the goals set forth in [Section] 454.51(a)(1)." These benefits and characteristics are discussed as follows.

GHG Reduction Goals

CEA's 25 MMT PCP achieves results and performance characteristics consistent with the

Section 454.52(a)(1)(A) goal of meeting the Commission's 25 MMT GHG reduction benchmark (38 MMT GHG by 2030).[23] The 2035 emissions from CEA's 25 MMT PCP are equivalent to CEA's load-proportional share of the 25 MMT by 2035 emissions target. CEA's proportional share of the 25 MMT GHG target is 0.197 MMT in 2030 and 0.16 MMT in 2035. According to the Commission's emissions calculator, CEA's 25 MMT PCP would account for 0.191 MMT in 2030 and 0.09 MMT in 2035 emissions, which is less than the GHG Benchmarks for CEA.

Renewable Energy

CEA's 25 MMT PCP achieves results and performance characteristics that are consistent with the Section 454.52(a)(1)(B) goal of ensuring that portfolios are comprised of at least 60% eligible renewable resources. In 2030 CEA's 25 MMT PCP would consist of 75% eligible renewable generation, which meaningfully exceeds the 60% target.

Enable Each Electrical Corporation to Fulfill Its Obligation to Serve Customers at Just and Reasonable Rates

CEA sets rates competitively with SDG&E's rates. As detailed in Section III.e., below, CEA is committed to serving its customers at reasonable rates. In addition to setting rates that are competitive with SDG&E, CEA works to minimize rate volatility by constructing a balanced and conservatively hedged power supply portfolio, building prudent financial reserves consistent with CEA's reserve policy, and minimizing rate changes to once per year, whenever possible.

Minimizing Bill Impact

CEA's 25 MMT PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(D) goal of minimizing the impact of planned procurement on ratepayers' bills. CEA's portfolio consists primarily of renewable resources that are well suited to a least-cost, best-fit procurement strategy.

CEAs procurement in the both the 25 MMT and 30 MMT PSPs emphasize resources with higher capacity factors that are more useful for matching customer demand. This includes out-of-state and offshore wind, as well as geothermal resources and long-duration storage. These resources may cost more than other potential renewables, but CEA believes the benefits provided by increased capacity and resource adequacy make the resources cost effective.

CEA prioritizes cost competitiveness, reliability, use of renewable energy and local economic development amongst its primary concerns. CEA anticipates that bill impacts will be minimized during its planned portfolio transition through the pursuit of a diversified resource mix that seeks to minimize exposure(s) that could otherwise occur by overemphasizing resources located within specific geographic areas, relying on a limited subset of technology types and/or purchasing from a limited pool of suppliers/developers, amongst other considerations. CEA is also aware of the risks associated with certain renewable-only generating configurations that limit the buyer's ability to re-shape deliveries to times of the day when negative prices and, possibly, curtailments are less likely to occur. With this concern in mind, CEA has carefully considered and incorporated energy storage opportunities within its resource mix, which should promote grid

[23] See D.22-02-004 at 105.

reliability during California's transition to an increasingly clean/renewable energy mix while reducing the potential for unforeseen costs (due to negative pricing) and/or reduced renewable energy deliveries related to curtailment. For example, coupling new-build solar with battery storage increases the capacity value of such projects and provides limited dispatchability for the solar generation, reducing risks related to curtailment and negative pricing.
Further, CEA's 25 MMT PCP reduces exposure to volatile natural gas prices and bill impacts that may result from periodic spikes in fossil fuel prices.

Ensuring System and Local Reliability

CEA's 25 MMT PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(E) goal of ensuring system and local reliability. The 25 MMT PCP meets system resource adequacy requirements as detailed in Section III.f., CEA's portfolio assumes CAM allocations and CAM resources, consistent with what is described in the most recently issued CAM allocations. When possible, CEA prioritizes procurement in local areas to strengthen local reliability.

As it has done in the past, and as shown in most state planning studies, CEA anticipates that it will meet a portion of its reliability needs through capacity-only contracts with natural gas plants. CEA has contracted with demand response resources to fulfill some of its RA needs and is exploring other opportunities for demand response. CEA is hopeful that new technologies will be developed that will provide cleaner resources with the reliability characteristics of California's existing natural gas fleet, and it will continue to investigate such resources as appropriate. This noted, one of CEA's primary concerns is supporting ongoing grid reliability, which compels the CCA program, in the near term, to include natural gas resources amongst its resource adequacy purchases until such time that clean, reliable capacity becomes more readily available.

Ensure that at least 65% of RPS Procurement is From Long-Term Contracts

Consistent with Section 454.52(a)(1)(F), CEA is on pace to meet the requirement that 65% of its RPS procurement must come from contracts of 10 years (long-term or more for each compliance period. For the current compliance period, CEA has procured 87% from long-term contracts. Additionally, the majority of the resources shown in CEA's 25 MMT PCP are expected to be acquired through long-term contracts. CEA will continue to procure renewables through short-term contracts when opportunities present themselves for cost-efficient procurement and when doing so would reduce any remaining dependency on system power.

Strengthen the diversity, sustainability, and resilience of the bulk transmission and distribution systems, and local communities

CEA's 25 MMT PCP achieves results and performance characteristics that strengthen the diversity, sustainability and resilience of the bulk transmission and distribution systems, as well as local communities, meeting Section 454.52(a)(1)(G). CEA's 25 MMT PCP relies on procurement from a variety of resource types as well as storage resources, incorporated in hybrid solar and storage configuration. CEA believes that the complementary nature of the solar and storage in hybrid resources makes better use of the existing transmission system. CEA carefully evaluates the long-term generation load-matching and congestion risks of new resources and weighs its options in the context of its existing supply and net demand on an hourly basis for the full duration of any contract period.

As described below, CEA is actively pursuing the procurement of capacity to meet the sub-category requirements of D.21-06-035, which includes long-duration storage, clean-firm resources like geothermal, and resources to replace the Diablo Canyon Power Plant. Additionally, CEA has recently procured demand response capacity resources, providing additional system diversity.

Demand-Side Energy Management

CEA's 25 MMT PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(H) goal of enhancing demand-side energy management. CEA continues to explore and pursue demand-side management programs such as demand response, energy efficiency, and behind the meter energy storage solutions. As part of CEA's procurement toward D.21-06-035, as discussed in more detail in Section IV.a.ii., CEA has contracted for demand response resources to meet a portion of its requirements.

Minimizing Localized Air Pollutants with Emphasis on DACs

CEA's 25 MMT PCP achieves results and performance characteristics consistent with the Section 454.52(a)(1)(l) goal of minimizing localized air pollutants and other GHG emissions with early priority on disadvantaged communities. CEA's 25 MMT PCP relies primarily on renewable generation, and this portfolio is expected to exhibit relatively low GHGs and localized air pollution emissions. CEA's 25 MMT PCP minimizes CEA's reliance on unspecified system power, instead opting for renewable and hydroelectric generation procurement/development whenever feasible. Results from the CSP tool indicate the following localized air pollutants associated with CEA's 25 MMT PCP in 2035:

- NOx: 46 tonnes/year
- PM 2.5: 16 tonnes/year
- SO2: 5 tonnes/year

These emissions are expected to result from the planned use of system energy and biomass energy in the 25 MMT PCP, as well as emissions from Combined Heat and Power ("CHP") resources and system energy assigned to the CEA portfolio by the CSP tool. In evaluating new biomass resources, CEA will prioritize development outside of DACs to the greatest practical

c. GHG Emissions Results

CEA used its load-based proportional share of the 30 and 25 MMT *GHG Benchmark* to determine the emissions compliance for its 30 MMT PCP and its 25 MMT PCP. CEA's assigned load proportional share of the 30 MMT benchmark in 2030 is 0.259 MMT and in 2035 is 0.201 MMT. Based on the 30 MMT version of the CSP calculator, CEA's 30 MMT PCP would result in total 2030 GHG emissions of 0.202 MMT and 2035 GHG emissions 0.082 MMT, which is less than CEA's assigned share of the 30 MMT GHG reduction benchmark.

CEA's assigned load proportional share of the 25 MMT *GHG Benchmark* in 2030 is 0.197 MMT and in 2035 is 0.162 MMT. Based on the 25 MMT version of the CSP calculator, CEA's 25 MMT PCP would result in total 2030 GHG emissions of 0.191 MMT and 2035 GHG emissions

of 0.091 MMT, which is less than CEA's assigned share of the 25 MMT GHG reduction benchmark.

d. Local Air Pollutant Minimization and Disadvantaged Communities

i. Local Air Pollutants

The 30 MMT version of the CSP calculator estimates the following emissions associated with CEA's 30 MMT portfolio:

Table 5: 30 MMT Portfolio Air Pollutants

	2024	2026	2030	2035
NOx	14	15	12	16
SOx	2	3	2	5
PM2.5	27	32	28	47

The 25 MMT version of the CSP calculator estimates the following emissions associated with CEA's 25 MMT portfolio:

Table 6: 25 MMT Portfolio Air Pollutants

	2024	2026	2030	2035
NOx	14	14	11	16
SOx	2	3	2	5
PM2.5	27	31	27	46

The tables below show the portion of load that is being served from fossil fuel resources and system power each year for the respective portfolios.

Table 7: 30 MMT Portfolio Demand, Fossil Fuel Resources and System Power

	2024	2026	2030	2035
Demand (at generator bus bar)	1,606	1,624	1,662	1,717
Net System Power	794	619	393	152
% of Load Served by System Power	49%	38%	24%	9%

Table 8: 25 MMT Portfolio Demand, Fossil Fuel Resources and System Power

	2024	2026	2030	2035
Demand (at generator bus-bar)	1,606	1,624	1,662	1,717
Net System Power	795	626	361	172
% of Load Served by System Power	49%	39%	22%	10%

CEA discusses its plans to reduce reliance on system power in Section IV., Action Plan.

ii. Focus on Disadvantaged Communities

CEA's IRP is consistent with the goal of minimizing local air pollutants, with early priority on DACs. As defined by the CalEPA's designation, a Disadvantaged Community includes four categories:

- Census tracts receiving the highest 25 percent of overall scores in CalEnviroScreen 4.0 (1,984 tracts).
- Census tracts lacking overall scores in CalEnviroScreen 4.0 due to data gaps but receiving the highest 5 percent of CalEnviroScreen 4.0 cumulative pollution burden scores (19 tracts).
- Census tracts identified in the 2017 DAC designation as disadvantaged, regardless of their scores in CalEnviroScreen 4.0 (307 tracts).
- Lands under the control of federally recognized Tribes.

CEA does not serve any customers in DACs.

Power Procurement in DACs

CEA does not currently procure electricity directly from any natural gas or other fossil fuel power plants. However, CEA recognizes the need to help mitigate the impacts of air pollution in regions of the state where communities have been disproportionately impacted by the existing generating fleet and the need for economic development in areas with high unemployment and poverty

CEA additionally evaluated its indirect impacts on disadvantaged communities throughout the state. Looking forward, CEA's 25 MMT PCP will reduce reliance on system power from 49% in 2024 to 10% in 2035. While CEA strives to reduce its dependence on resources that emit GHGs and other local pollutants, CEA must also balance that goal against reliability and affordability, which is what CEA has strived to do in its PCPs.

LSE Activities and Programs Impacting DACs

While not specific to DACs, CEA maintains rates that are competitive to SDG&E rates. CEA saved its customers an estimated $2.0MM in its first year of operation.
Additionally, CEA provides a California Alternate Rates for Energy ("CARE") and Family Electric Rate Assistance ("FERA") to customers. CARE customers save approximately 30-35% on their total bill.

CEA also provides a medical baseline program, which gives residential customers with qualified medical devices or conditions a higher usage base at the lowest rate available on their rate schedule.

CEA provides an Arrearage Management Plan ("AMP"), which may forgive 1/12th of a customer's overall debt for each month a payment is made on time. Additionally, CEA has a Low-Income Home Energy Assistance Program ("LIHEAP"), which provides income-qualified households with financial assistance with the goal of meeting immediate heating or cooling needs. LIHEAP assistance may include one-time financial assistance for disconnecting notices or

potentially life-threatening situations like the replacement of a combustible applicable and other energy support programs.

CEA has established a Community Advisory Committee, (CAC) the purpose of which is to advise the CEA Board of Directors on those matters concerning the operation of CEA, provide feedback to the Board, act as a liaison between the Board and community and serve as a forum for community input. The CAC has established a subcommittee to focus on outreach to underserved communities.

e. Cost and Rate Analysis

CEA's 30 MMT and 25 MMT PCPs are reasonable from a cost perspective. In selecting resources for its portfolios, CEA carefully considered the cost implications of specific resource selections and procurement timing. This analysis was informed by CEA's procurement experience and the standard assumptions and results of the Commission's RESOLVE/SERVM modeling.

CEA strives to keep customer costs as low as possible. This is reflected both in the resources procured and in the timing of those procurements. CEA employs risk-management that considers risk associated with under-procurement, as well as risks of potential over-procurement which could occur from unforeseen changes in load going forward. Risk management also involves assessing the currently available technologies, expected technological developments, and potential for radically different technologies in the future. The assessment of potential resources is not strictly on price issues but includes information on how well the resources match the specific needs of CEA's customers' load. For example, solar resources are often the least expensive on a simple cost per MWh basis, but other resources which may cost more on a simple MWh basis may provide additional benefits in terms of RA capacity, better matching CEA's load profile, or serving the needs of the CEA service area.

In general, CEA sought to balance the need to procure resources with enough lead time to meet CEA's LSE-specific procurement shortfalls and the Commission-identified overall system new resource needs with the cost-saving benefits of waiting to procure renewable and storage resources with downward sloping cost projections. CEA also recognizes that future resource costs are highly uncertain, and technological advancement can happen unexpectedly; CEA's procurement cycle is designed to take advantage of technological and cost improvements by incrementally adding new resource commitments over time.

CEA's PCPs also take advantage of the fact that, compared to the IOUs, CCAs significantly shorter generation project development timelines, in part due to the fact that CCAs do not require Commission approval of such projects. These shorter timelines result in significant direct savings and give CEA more flexibility to time its procurement activities in a way that takes advantage of falling renewable generation prices or other cost-effective procurement opportunities that may arise over time.

CEA continuously monitors the energy markets and reassesses current market prices, expected future prices, technological progress, and its expected needs. When opportunities arise CEA will take advantage of them.

f. System Reliability Analysis

Both CEA's 30 MMT PCP and its 25 MMT PCP are expected to be reliable and will contribute CEA's fair share to system reliability needs.

CEA 30 MMT PCP

The effective capacity of CEA's 30 MMT PCP is provided in the following "System Reliability Progress Tracking Table" from the 30 MMT Resource Data Template. The net qualifying capacity for the month of September is shown for each year in the following table:

Table 9: System Reliability Progress Tracking, September, 30 MMT PCP

	Resource Type	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Online	out_of_state_wind_AZNM	16	14	13	14	14	11	9	9	10	10	11	11
Online	4hr_batteries	5	5	5	5	4	4	4	4	3	3	3	2
Online	demand_response	0	-	-	-	-	-	-	-	-	-	-	-
Online	gas_cc	51	-	-	-	-	-	-	-	-	-	-	-
Online	gas_ct	63	64	63	63	62	61	60	61	62	62	63	64
Online	cogen	0	0	0	-	-	-	-	-	-	-	-	-
Development	4hr_batteries	17	17	18	16	15	15	14	13	12	10	9	8
Development	6hr_batteries	1	1	1	1	1	1	1	1	1	1	0	0
Development	demand_response	2	2	2	2	2	1	1	1	1	-	-	-
Review	4hr_batteries	10	10	11	10	9	9	9	8	7	6	5	5
Review	demand_response	1	1	1	1	1	1	1	1	0	0	0	-
Review	geothermal	-	-	3	3	3	3	3	3	3	3	3	3
Review	gas_cc	76	78	79	-	-	-	-	-	-	-	-	-
PlannedExisting	gas_cc	116	177	167	242	225	228	207	207	217	217	216	199
PlannedNew	hybrid	47	49	50	46	43	40	37	34	32	29	27	24
PlannedNew	in_state_wind_south	11	11	11	8	6	6	6	5	5	4	4	6
PlannedNew	4hr_batteries	-	-	14	13	12	11	11	10	-	-	-	-
PlannedNew	6hr_batteries	-	-	5	4	4	4	4	4	3	3	3	3
PlannedNew	8hr_batteries	-	-	-	-	13	13	25	25	24	23	22	21
PlannedNew	geothermal	-	-	-	-	-	-	12	12	12	12	12	25
	LSE total supply (effective MW)	**416**	**429**	**442**	**427**	**413**	**409**	**404**	**398**	**391**	**384**	**378**	**371**
	btm_pv	16	18	20	18	16	14	12	13	14	16	17	19
	LSE total supply (effective MW)	**432**	**447**	**462**	**446**	**429**	**423**	**416**	**411**	**406**	**400**	**395**	**390**
	LSE reliability need (MW)	**432**	**447**	**462**	**445**	**429**	**422**	**416**	**410**	**405**	**400**	**395**	**389**
	Net capacity position (+ve = excess, -ve = shor	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

As demonstrated in Table 10, CEA's 30 MMT PCP contributes 371 MW of peak monthly NQC in 2035. Combined with CEA's allocation of 19 MW of behind-the-meter PV, this makes for an LSE total supply of 390 MW. As shown in the table above, this NQC equals CEA's reliability need. Of this total, 94 MW are related to new renewable and hybrid resources as well as new short- and long-duration storage resources. CEA's 30 MMT PCP includes planned contracts with existing resources, which are expected to include resources within the existing natural gas generator fleet, for a total of 199 MW of NQC. This balanced portfolio of flexible capacity works to effectively and reliably integrate a renewables-heavy portfolio, thus exceeding CEA's share of any system-wide renewable integration resource requirements.

CEA 25 MMT PCP

The effective capacity of CEA's 25 MMT PCP is provided in the following "System Reliability Progress Tracking Table" from the 25 MMT Resource Data Template. The net qualifying capacity for the month of September is shown for each year in the following table:

Table 10: System Reliability Progress Tracking, September, 25 MMT PCP

Resource Type	Conrtact Status	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
out_of_state_wind_AZNM	Online	17	17	16	14	12	12	12	12	12	12	11	11
4hr_batteries	Online	5	5	5	5	5	5	5	4	4	3	3	2
demand_response	Online	0	-	-	-	-	-	-	-	-	-	-	-
gas_cc	Online	51	-	-	-	-	-	-	-	-	-	-	-
gas_ct	Online	64	65	65	64	63	61	60	61	62	63	64	65
cogen	Online	0	0	0	-	-	-	-	-	-	-	-	-
4hr_batteries	Development	16	17	17	16	16	16	17	15	13	11	10	8
6hr_batteries	Development	1	1	1	1	1	1	1	1	1	1	1	0
demand_response	Development	2	2	2	2	2	2	2	2	1	-	-	-
4hr_batteries	Review	10	10	10	10	9	10	10	9	8	7	6	5
demand_response	Review	1	1	1	1	1	1	1	1	1	0	0	-
geothermal	Review	-	-	3	3	3	3	3	3	3	3	3	3
gas_cc	Review	76	77	78	-	-	-	-	-	-	-	-	-
gas_cc	PlannedExisting	107	168	160	237	224	233	218	214	222	218	213	193
hybrid	PlannedNew	49	49	49	46	43	43	44	40	36	32	28	24
in_state_wind_south	PlannedNew	8	10	11	8	4	5	7	6	5	5	4	6
4hr_batteries	PlannedNew	-	-	13	13	12	13	13	12	-	-	-	-
6hr_batteries	PlannedNew	-	-	4	4	4	4	4	4	4	3	3	3
8hr_batteries	PlannedNew	-	-	-	-	13	13	27	26	24	23	22	21
geothermal	PlannedNew	-	-	-	-	-	-	12	12	12	12	12	25
LSE total supply (effective MW)		**407**	**421**	**435**	**423**	**411**	**424**	**437**	**423**	**408**	**394**	**380**	**365**
btm_pv		10	9	9	12	14	13	12	14	15	16	17	19
LSE total supply (effective MW)		**417**	**431**	**445**	**435**	**425**	**437**	**449**	**436**	**423**	**410**	**397**	**384**
LSE reliability need (MW)	**0**	**417**	**431**	**444**	**434**	**425**	**437**	**449**	**436**	**423**	**410**	**397**	**384**
Net capacity position (+ve = excess, -ve = shortfall) (effective MW)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

As demonstrated in this Table, CEA's 25 MMT PCP contributes 365 MW of peak monthly NQC in 2035. Combined with CEA's allocation of 19 MW of behind-the-meter PV, this makes for an LSE total supply of 384 MW. As shown in the table above, this NQC exceeds CEA's reliability need. As shown in the table above, this NQC exceeds CEA's reliability need. Of this total, 94 MW are related to new renewable and hybrid resources as well as new short- and long-duration storage resources. CEA's25 MMT PCP includes planned contracts with existing resources, which are expected to include resources within the existing natural gas generator fleet, for a total of 193 MW of NQC. This balanced portfolio of flexible capacity works to effectively and reliably integrate a renewables-heavy portfolio, thus exceeding CEA's share of any system-wide renewable integration resource requirements.

g. High Electrification Planning

Under the Commission's High Electrification TPP case, the increase in loads remain small through 2030. System peak load in 2030 under the HE TPP case is only 1.5% higher than in the standard case, and the load is only 3.7% higher. For CEA, this translates into an additional 7 MW of peak demand and 57 GWh of additional load. By 2035 the impacts are higher. Peak load is now 5.8% or 22 MW higher, and load is 14.4% or 229 GWh higher. In 2045 peak load is estimated to be 20.2% higher and load is estimated to be 21.5% higher. Because these increases in the near future are small, CEA expects it will have time to see how the high electrification situation impacts load before deciding on any additional procurement. CEA anticipates that it might procure additional resources in the 2030-2035 time frame and may meet earlier needs by potentially moving up some of the procurement it already has in its plans.

In considering how it might meet any addition needs during the 2030-2035 or later time frame, CEA desires to further diversify its portfolio. At this point, it seems that the best option would be to add additional offshore wind to the portfolio. By the 2030-2035 time frame the expected offshore resources should be well on their way to being developed and high-capacity values of offshore wind, as compared with other wind and solar resources, along with its complementary nature to the solar hybrid resources that are currently in CEA's projected portfolio make offshore wind the best choice for CEA.

CEA has already included 63 MW of Morro Bay Offshore Wind in its portfolios. For any additional offshore wind CEA would look to source from a different location in order to ensure additional diversity in its portfolio. CEA would look to procure the additional offshore wind from the Humboldt Bay Offshore CREZ as this would achieve the greatest amount of diversity. If Humboldt Bay Offshore Wind is not available, CEA would consider an alternative location at Diablo Canyon.

Table 11: High Electrification Planning by 2035

Resource Type	MWs	Annual GWh	2035 GHG Target	Transmission Zone	Substation/ Bus	Alternative Location	Note
Humboldt Bay Offshore Wind	48	229	Both	n/a	n/a	Diablo Canyon	At this time, it is not realistic to project the Transmission Zone or Substation/Bus for new resources tentatively planned for 2030+.

h. Existing Resource Planning

Over the last several years, CEA has been ramping up its procurement of new resources as it gains experience in contracting for new resources. CEA's portfolios still reflect a sizeable number of existing resources, but much of this is already under contract.

Existing resources that CEA plans to contract with are generally resources that CEA has seen have been available. CEA has chosen these resources because of their lower delivery risks compared to new resources. However, CEA recognizes that there is a risk that these existing resources may not be available to meet CEA's plans. CEA's portfolios attempt to balance out these competing risks, and, as CEA has explained elsewhere in this document, CEA does not view its proposed portfolio as written in stone, but rather a map to be followed. CEA is always ready to change its path should the energy market change. If expected existing resources are not available, CEA will consider other possible alternatives. Even if the existing resources are available, CEA may procure new resources if doing so would reduce emissions or save money.

In CEA's portfolio, the main existing resources that are not already under contract with CEA are in-state large hydro, wind, biomass, geothermal, small hydro, solar and northwest hydro. These are resources that in CEA's experience have been generally available and meet the needs of CEA's customer for carbon-free energy at competitive prices with minimal risks.

i. Hydro Generation Risk Management

In developing its portfolios, CEA took several steps to manage the risk of reduced hydro availability that may result from future in-state drought. First, CEA has developed a network of Pacific Northwest-based hydroelectric power suppliers, including entities that have substantial Asset Controlling Supplier ("ACS") supply and are thus able to sell firm low-carbon supply to CEA. CEA's PCP includes hydroelectric resources located within California as well as imported hydroelectric power from the Pacific Northwest for years before 2035. The amount of in-state large hydro includes both the amount from the GHG-free allocation provided by SDG&E, as well as planned hydro procurement in the CEA portfolio. Second, CEA prioritizes hydroelectric contracts with marketers that provide firm delivery volumes, helping to reduce the planning uncertainty associated with drought and variable hydroelectric conditions within California.

Third, CEA's planned use of hydroelectric supply within its 25 MMT PCP is less than CEA's proportionate amount per the PSP (see table below). For its 25 MMT PCP, CEA increased its planned use of hydroelectricity, which could be at risk under certain drought conditions. However, under both portfolios, due to CEA's small hydroelectric needs, and the fact that CEA does not require any hydro in 2035 because of its expected amount of renewable resources, CEA will have a greater probability of filling its annual positions than other, larger LSEs. With that noted, under a drought scenario or in the event that other factors restrict the availability of hydroelectricity and CEA is unsuccessful in filling related shortfalls through short-term contracting opportunities, CEA would plan to substitute with renewable energy resources to ensure it meets its assigned GHG benchmark.

Table 12: Comparison of Proportional Hydrogeneration to PCPs

Hydro Resource	30 and 25 MMT PSP MW	CEA Proportionate Share	CEA 30 MMT PCP	CEA 25 MMT PCP
CAISO	7073	60	0	0
Imports	2852	24	0	0

j. Long-Duration Storage Planning

The Commission's PSP included 1,000 MW of new long-duration storage to be operational by 2028. CEA has begun discussions with various suppliers for capacity to meet its D.21-06-035 long-duration storage requirement of 3.5 MW. These discussions are still in the initial stages, but CEA is confident that it will be able to procure long-duration storage with a commercial online date on or before 2028.

In its PCPs, CEA has planned for 5 MW of long-duration batteries in order to achieve its D.21-06-035 long duration storage requirement of 3.5 MW, and at this time is planning to procure an additional 30 MW long-duration storage beyond its D.21-06-035 requirement. CEA's experience in attempting to procure long-duration storage resources is that very few developers are able to meet the current demand within timeframes required by D.21-06-035. As additional technologies are market-proven and more developers offer long-duration storage, CEA will consider further procurement of these resources. CEA sees the possibility for substantial benefits from long-duration storage to the grid and for aiding LSEs in compliance with the Commission's Slide-of-Day reforms to the RA program.

k. Clean Firm Power Planning

The Commission's PSP included 1,000 MW of "clean firm" power by 2035, of which CEA's proportional share is 3.5 MW. CEA currently plans to procure 4 MW of new "clean firm" geothermal power to meet its D.21-06-035 requirements.

l. Out-of-State Wind Planning

The Commission's Preferred System Plan calls for over 4,600 MW of new out-of-state wind generation ("OOS Wind") to be developed and operational by 2035. CEA's proportional share of this would be approximately 39 MW, and CEA's PCPs include 71 MW of OOS Wind.

CEA understands that the transmission projects needed to connect OOS Wind to the CAISO grid require significant lead-times; however, CEA is currently in discussions with OOS Wind developers that are also building and securing the transmission needed to deliver necessary wind energy directly to California. Therefore, CEA has reflected OOS Wind in both of its portfolios.

m. Offshore Wind Planning

The Commission's PSP calls for 4,704 MW of new offshore wind generation to be developed and operational by 2035. CEA's proportional share of this would be approximately 40 MW, and CEA's PCPs include 63 MW of Offshore Wind. Since California has little experience with offshore wind development, CEA conservatively planned procurement later in the planning horizon for this category, with a focus on areas with existing transmission capacity in the Central Coast or current plans to develop capacity and infrastructure for offshore wind (e.g., in and around Humboldt County). Additionally, though expected to provide benefits in comparison to existing wind resources, it is unclear what exact resource and reliability benefits offshore wind may provide and at what cost. Therefore, CEA has planned conservative offshore wind procurement in both of its portfolios and will be ready to substitute other resources if the expected offshore wind is not developed.

n. Transmission Planning

In identifying resource locations for all portfolios, CEA was guided by the following considerations:

- CEA has a general preference for resources located within its service area and the community it serves, but more generally, within Southern California.
- CEA prefers projects located in areas that can utilize existing transmission infrastructure with minimal upgrade/modification costs.
- CEA prefers low-impact renewable energy projects that provide economic benefit to DACs, subject to community interest in siting projects within such locations.

Unlike the IOUs, CEA is not a transmission and distribution ("T&D") system operator. CEA does not enjoy the benefits of a granular knowledge of SDG&E's T&D system or the CAISO grid, and CEA is not in the best position to identify optimal resource locations and does not have the expertise inhouse to determine the best locations for new resources. In practice, CEA relies on project developers to conduct the research and technical studies necessary for siting potential generation projects. CEA evaluates projects offered by developers based on a variety of criteria, including transmission availability, nodal prices and potential for congestion, project viability, environmental, workforce, and other factors. As such, CEA generally utilized the PSP selected candidate resources as a guide for likely resource locations in its 30 MMT PCP and its 25 MMT

PCP. These should be treated as general expectations based on the aforementioned considerations, not definitive selections – actual project locations will be selected during CEA's future solicitation processes. CEA believes that the best way to keep costs down during resource solicitations is to not limit the potential locations of the resources. Competition among the responders to resource solicitations ensures that CEA can avail itself of the best possible resources, including allowing developers to explore different locations and select what they feel is the best location for their resource taking into account numerous factors, including the costs of any potential transmission upgrades or curtailment issues. Like most LSEs, CEA doesn't have the necessary resources to examine all possible resource locations to find optimal one from a transmission perspective but relies on the developers of projects doing just that.

As discussed in prior sections, CEA is very nimble in administering pertinent resource planning processes. More specifically, if CEA's expected resource locations become infeasible due to various constraints, or if the Commission's modeling efforts happen to indicate that certain resource locations are no longer feasible/desirable, then CEA would ultimately locate and contract for alternative resources that fall in preferred locations. CEA also remains open to interesting opportunities, and should developers find locations that have not been anticipated but through the developer's analysis offer benefits CEA will consider them without feeling locked into the existing expected locations.

Most of the resources in the CEA's PCPs are not expected to require transmission upgrades beyond the standard interconnection process. Those resources in CEA's PCP that might require substantial transmission upgrades or new transmission lines are generally planned for much later in the plans and CEA expects that the developers will have determined that the transmission will be available before CEA enters into agreements with them. These resources in the CEA PCPs would include the OOS Wind and Offshore Wind. It is obvious that both offshore and out-of-state wind will require additional transmission, and this is a part of any discussion of these resources. In addition, in selecting these future resources for its portfolios CEA has considered transmission and chosen projects for which any transmission concerns should be minimized or already addressed. CEA's choice of Wyoming Wind was made because of the existing plans for transmission to bring that energy to California; indeed, developers of that transmission have approached the CAISO about having that transmission become part of the CAISO. CEA's choice of Morro Bay offshore wind was made because of the existing transmission capacity in the area.

IV. Action Plan

a. Proposed Procurement Activities and Potential Barriers

CEA has a well-established procurement process that it uses and will continue to use to steadily achieve its PCP over the coming years (i.e., by 2035). CEA's procurement process includes the following key activities:

- Identification of planned resources by type, desired online date, and capacity.

- Planning for procurement activities in consideration of CEA's risk management policy; resource acquisition lead times including, where applicable, development timelines; staff capacity; and financial considerations.
- Design and administration of resource solicitations, which are often conducted with CalChoice. For new resources, these typically take the form of periodic request for offers processes, while for existing resources, procurement activity is more frequent and routinized.
- Careful negotiation of contract terms to ensure positive outcomes for CEA customers with appropriate risk mitigation.
- Ongoing contract management, including where applicable, careful monitoring of development milestones.
- Ongoing contract management, including where applicable, careful monitoring of generator performance after a resource has achieved commercial operation date ("COD").
- Conduct and participate in joint CCA solicitation processes in order to expand procurement opportunities available to CEA.

i. Resources to meet D.19-11-016 procurement requirements

As a relatively recently launched CCA, CEA does not have a specific D.19-11-016 requirement, and therefore has not planned for any D.19-11-035 procurement.

ii. Resources to meet D.21-06-035 procurement requirements, including:

a. 1,000 MW of firm zero-emitting resource requirements

CEA's required portion of firm zero-emitting resources under D.21-06-035 are 3.5 MW. CEA has not yet finalized a resource for this but is examining several possibilities. In its PCPs, CEA has included 4 MW of new geothermal capacity, which it expects will meet this D.21-06-035 requirement. CEA does not expect any barriers to achieving its D.21-06-035 clean, firm, resource requirements and is hoping to finalize a contract for these resources over the next few months

b. 1,000 MW of long-duration storage resource requirements

CEA's required portion of long-duration storage resources under D.21-06-035 are 3.5 MW. CEA has not yet determined a specific resource for this need but is currently considering how to fill this need. Because of the small amount of this type of resource that CEA needs, it does not anticipate having any barriers to being able to find candidate resources. At this point, CEA expects that long term battery storage will supply this need. CEA is currently working on filling this need and hopes to finalize a contract in the next few months.

c. 2,500 MW of zero-emissions generation, generation paired with storage, or demand response resource requirements

CEA's required portion of zero-emissions generation, generation paired with storage, or demand response resources are 8 MW. CEA has signed a contract for 2 MW of demand response and is consider options such as hybrid resources to fulfill the remaining requirements. Because of the small amount of this required by CEA, it does not anticipate any barriers to procuring these resources.

d. All other procurement requirements

CEA's overall D.21-06-035 requirements, excluding the previously discussed sub-category requirements, are 24 MW. CEA plans to meet these needs with wind, demand response and battery storage. CEA sees no barriers to meeting these requirements.

iii. Offshore wind

As mentioned previously in this document, CEA is planning on procuring 71 MW of offshore wind, and potentially another 48 MW of offshore wind if the needs described in the High Electrification case materialize. CEA is following the development of these resources, but as the leases for the offshore locations have not even been issued these resources remain somewhat speculative. CEA will continue to monitor the development of these resources and when they are offered to LSEs expects to participate in that process. Should unforeseen barriers arise, there will be sufficient lead time for CEA to adjust its portfolios and contract with other appropriate resources.

iv. Out-of-state wind

CEA's expected procurement of out-of-state wind resources is still several years out. CEA is beginning to examine potential resources and discuss with developers. As explained above, CEA has included OOS wind resources in its PCPs. CEA does not expect any barriers to the procurement of these resources, but should any arise there remains sufficient time for CEA to adjust its portfolio.

v. Other renewable energy not described above

As previously mentioned, CEA's PCPs are not set in stone. CEA continually monitors the renewable energy space through RFOs and discussions with developers, as well as monitoring various news reports, and regulatory proceedings, CEA is ready to modify its expected portfolio if new resources or specific opportunities arise. CEA strives to be a nimble and adaptable energy buyer in order to offer its customers the lowest cost power.

vi. Other energy storage not described above

CEA expects that except for the long-duration storage required under D.21-06-035, the storage it will acquire will mostly be part of hybrid resources associated with solar resources. CEA

remains open to considering other possibilities, especially if new storage technologies arise that reduce the costs of storage or situations arise where storage can help fulfill other needs, such as reducing the need for new transmission or distribution. CEA will continue to monitor developments in the energy storage markets and adjust its portfolio if advantageous opportunities arise.

vii. Other demand response not described above

CEA has already contracted for a modest amount of demand response resources. CEA remains open to other opportunities should they arise, and consistent with the current maximum cumulative capacity ("MCC") bucket requirements.

viii. Other energy efficiency not described above

CEA does not currently have any energy efficiency investment plans but may consider these proposals in the future.

ix. Other distributed generation not described above

CEA does not currently have any distributed generation investment plans but may consider these proposals in the future.

x. Transportation electrification, including any investments above and beyond what is included in Integrated Energy Policy Report (IEPR)

CEA does not currently have any transportation electrification investment plans but may consider these proposals in the future.

xi. Building electrification, including any investments above and beyond what is included in Integrated Energy Policy Report (IEPR)

CEA does not currently have any building electrification investment plans but may consider these proposals in the future.

xii. Other

CEA continuously explores new methods of lowering electricity demand and increasing clean energy supply.

b. Disadvantaged Communities

CEA is committed to considering the impacts of its resource planning and procurement activities on disadvantaged communities. While no specific outreach activities have been completed to date – that is, soliciting direct input from disadvantaged communities located withing CEA's service territory, or beyond – CAC has established a CAC subcommittee to focus on outreach to

underserved communities and CEA will consider the staff resources and time commitments that would be needed to effectively gather feedback from these constituents for purposes of evaluating and, potentially, adapting future resource planning and procurement decisions. The schedule for such activities will be developed after evaluating the staffing resources best suited to participate in such outreach and/or any outside resources that may be necessary to credibly and competently gather and evaluate feedback compiled through this process. In addition to identifying necessary staff resources and/or outside support related to this process, CEA will also determine a suitable framework for gathering feedback from disadvantaged communities, including an assessment of logistics (for example, completion of an in-person workshop versus another method of feedback gathering) and potential communication requirements (notably, whether materials and/or presenters will need to accommodate multiple languages, etc.). When such feedback is gathered, CEA will determine whether existing planning and procurement processes are sufficiently responsive to the concerns and priorities expressed by members of participating disadvantaged communities during this outreach exercise. If existing processes satisfactorily address noted concerns and preferences, CEA may leave its current planning and procurement processes as-is. If, however, there are noteworthy gaps or oversights that are highlighted during future outreach efforts, procedural adaptations will be incorporated in the future. This process will take some time to administer, and CEA anticipates completing it prior to California's next Integrated Resource Planning process in 2024 – CEA will, of course, highlight any feedback gathered during the aforementioned outreach process as well as any adaptations to its resource planning and procurement process at that time.

For now, CEA has adopted bid selection protocols and evaluative criteria that will be applied when administering solicitations intended to facilitate the achievement of future renewable energy and other portfolio needs. Such selections protocols are outlined in CEA's most recent Updated Draft 2022 Renewables Portfolio Procurement Plan, as recently submitted to the Commission on August 15, 2022. In this document, CEA indicates that it will gather information regarding the following important considerations, amongst others, when evaluating any offers for renewable energy resources that may be needed to meet California's RPS procurement mandate:

- Environmental impacts and related mitigation requirements, including impacts to air pollution within communities that have been disproportionately impacted by the existing generating fleet; and
- Potential economic benefits created within communities with high levels of poverty and unemployment.

Gathering information in these areas will provide CEA with valuable insight when determining whether certain projects may further impact or alleviate impacts within disadvantaged communities, which often reflect the characteristics identified in the aforementioned criteria but will also provide for broader consideration of CEA's resource planning and procurement decisions on sensitive communities. In addition, CEA has indicated that it will consider the inclusion of evaluative preference for "renewable energy projects that provide environmental and economic benefits to communities afflicted with poverty or high unemployment, or that suffer from high emission levels of toxic air contaminants, criteria air pollutants, and greenhouse

gases," Pursuant to Public Utilities Code 399.13(a)(8)(A).[24] To the extent that CEA procures RPS resources through solicitations where qualitative factors are considered, the impact on disadvantaged communities will be evaluated in relation to these bid and evaluation protocols. Necessary information will be gathered by requiring prospective suppliers to answer the following questions: Is your facility located in a community afflicted with poverty or high unemployment or that suffers from high emission levels? If so, the participant will be encouraged to describe how its proposed facility can provide the following benefits to adjacent communities:

- Projected hires from adjacent community (number and type of jobs).
- Duration of work (during construction and operation phases).
- Projected direct and indirect economic benefits to the local economy (i.e., payroll, taxes, services).
- Emissions reduction – identify existing generation sources by fuel source within 6 miles of proposed facility and indicate whether the proposed facility will replace/supplant the identified generation sources; and
- To the extent that the proposed generating facility is expected to replace/supplant an existing generating facility, the prospective supplier will be asked to quantify the associated emission impacts of this transition.

Certain of these considerations were incorporated during the administration of CEA's most recent solicitation for long-term renewable energy supply; others will be reflected in future solicitations. Based on the success of its ongoing solicitation process(es), CEA may adapt these considerations over time, maintaining awareness of the impacts of its resource planning and procurement process on disadvantaged communities.

To achieve (or fall below) its prescribed emission targets, CEA clearly must adapt its portfolio planning targets to ensure that sufficient quantities of clean energy are procured over time. When managing these transitions, CEA will be considerate of the impacts on disadvantaged communities by taking the steps outlined above, including the completion of outreach within disadvantaged communities and observance of the aforementioned bid protocols. CEA looks forward to updating the Commission on the success of these efforts during the California's IRP cycle.

c. Commission Direction of Actions

CEA encourages the Commission to adopt durable rules and processes to bring greater stability to the regulatory framework within which CEA and other suppliers must plan and operate. Frequent rule changes disrupt CEA's ability to execute long-term planning activities and adopted planning elements while minimizing customer costs. Such regulatory changes can also result in

[24] Cal. Pub. Util. Code § 399.13(a)(8)(A) ("In soliciting and procuring eligible renewable energy resources for California-based projects, each electrical corporation shall give preference to renewable energy projects that provide environmental and economic benefits to communities afflicted with poverty or high unemployment, or that suffer from high emission levels of toxic air contaminants, criteria air pollutants, and greenhouse gases.").

disproportionately high costs and administrative burdens, which would prompt related customer rate increases – certain regulatory changes may necessitate duplicative procurement efforts and/or stranded investments that are expected to impact a larger portion of CEA's portfolio.

For example, the Commission is currently considering a programmatic approach to the IRP, a Slice-of-Day Resource Adequacy Program. Each of these changes on their own represent significant regulatory uncertainty, which leads to market uncertainty. These changes together represent a complex, wholesale change to the regulatory landscape, which LSEs cannot reasonably account for in planning.

V. Lessons Learned

CEA recognizes the improvements made to the data templates relative to the 2020 planning cycle, including consolidation of the new and baseline templates and enhancements to better capture the full range of resources in LSE existing and planned portfolios. CEA believes that additional improvements in the data templates can be made, and CEA looks forward to further discussions with Energy Division staff in this regard. CEA's experience completing the Resource Data Template and the Clean System Power tools leads to the following observations and suggestions:

- The Commission should remain mindful that the implied precision of both reliability analysis and CSP calculator are illusionary, especially for years towards the end of period. The usefulness of this exercise for periods over 5 years out is questionable. It is unclear how much additional information is gained beyond what the Commission's own RESOLVE and SERVM analysis provide, since LSEs generally choose resources based on the results of that analysis. LSE's procurement decisions are determined by what is offered to them when they have a need for resources. Asking them to consider how they expect to meet those needs in the future is fine, but the purpose of the effort should be ensuring that the LSEs are at least considering this, not requiring them to create a specific plan that will likely never materialize.
- There is considerable time required/spent to complete necessary templates, and this remains a concern for CEA and other LSEs. While CEA appreciates efforts in recent years to simplify the IRP templates, the narrative template has only become more burdensome. Additionally, CEA requests that Energy Division staff consider whether all requested data is necessary/critically important to the IRP process, and if not, CEA respectfully requests that any/all non-critical data requirements be eliminated from future processes. For example, requesting the substation for potential resources that may be used to meet additional load many years in the future seems to be asking the unknowable. Such procurement is likely more ten or more years away and in the intervening time, the renewable energy market and potentially the transmission grid will likely have evolved in significant unforeseen ways. At this point, most LSEs cannot be so specific in their procurement plans and requiring such a level of specificity does not add anything to this process. CEA also found that the directions and guidance provided by the Commission and staff for this IRP cycle, while improved over prior years, still lacks clarity and

consistency in certain key respects. Again, CEA recognizes that the IRP process is evolving, but there is room for improvement in providing clear and consistent instructions in a timely manner.

Glossary of Terms

Alternative Portfolio: *LSEs are permitted to submit "Alternative Portfolios" developed from scenarios using different assumptions from those used in the Preferred System Plan with updates. Any deviations from the "Conforming Portfolio" must be explained and justified.*

Approve (Plan)*: the CPUC's obligation to approve an LSE's integrated resource plan derives from Public Utilities Code Section 454.52(b)(2) and the procurement planning process described in Public Utilities Code Section 454.5, in addition to the CPUC obligation to ensure safe and reliable service at just and reasonable rates under Public Utilities Code Section 451.*

Balancing Authority Area (CAISO): *the collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.*

Baseline resources: *Those resources assumed to be fixed as a capacity expansion model input, as opposed to Candidate resources, which are selected by the model and are incremental to the Baseline. Baseline resources are existing (already online) or owned or contracted to come online within the planning horizon. Existing resources with announced retirements are excluded from the Baseline for the applicable years. Being "contracted" refers to a resource holding signed contract/s with an LSE/s for much of its energy and capacity, as applicable, for a significant portion of its useful life. The contracts refer to those approved by the CPUC and/or the LSE's governing board, as applicable. These criteria indicate the resource is relatively certain to come online. Baseline resources that are not online at the time of modeling may have a failure rate applied to their nameplate capacity to allow for the risk of them failing to come online.*

Candidate resource: *those resources, such as renewables, energy storage, natural gas generation, and demand response, available for selection in IRP capacity expansion modeling, incremental to the Baseline resources.*

Capacity Expansion Model: *a capacity expansion model is a computer model that simulates generation and transmission investment to meet forecast electric load over many years, usually with the objective of minimizing the total cost of owning and operating the electrical system. Capacity expansion models can also be configured to only allow solutions that meet specific requirements, such as providing a minimum amount of capacity to ensure the reliability of the system or maintaining greenhouse gas emissions below an established level.*

Certify (a Community Choice Aggregator Plan)*: Public Utilities Code 454.52(b)(3) requires the CPUC to certify the integrated resource plans of CCAs. "Certify" requires a formal act of the Commission to determine that the CCA's Plan complies with the requirements of the statute and the process established via Public Utilities Code 454.51(a). In addition, the Commission must review the CCA Plans to determine any potential impacts on public utility bundled customers under Public Utilities Code Sections 451 and 454, among others.*

Clean System Power (CSP) methodology*: the methodology used to estimate GHG, and criteria pollutant emissions associated with an LSE's Portfolio based on how the LSE will expect to rely on system power on an hourly basis.*

Community Choice Aggregator*: a governmental entity formed by a city or county to procure electricity for its residents, businesses, and municipal facilities.*

Conforming Portfolio*: the LSE portfolio that conforms to IRP Planning Standards, the 2030 LSE-specific GHG Emissions Benchmark, use of the LSE's assigned load forecast, use of inputs and assumptions matching those used in developing the Reference System Portfolio, as well as other IRP requirements including the filing of a complete Narrative Template, a Resource Data Template and Clean System Power Calculator*.

Effective Load Carrying Capacity*: a percentage that expresses how well a resource is able avoid loss-of-load events (considering availability and use limitations). The percentage is relative to a reference resource, for example a resource that is always available with no use limitations. It is calculated via probabilistic reliability modeling and yields a single percentage value for a given resource or grouping of resources.*

Effective Megawatts (MW): *perfect capacity equivalent MW, such as the MW calculated by applying an ELCC % multiplier to nameplate MW.*

Electric Service Provider*: an entity that offers electric service to a retail or end-use customer, but which does not fall within the definition of an electrical corporation under Public Utilities Code Section 218.*

Filing Entity*: an entity required by statute to file an integrated resource plan with CPUC.*

Future*: a set of assumptions about future conditions, such as load or gas prices.*

GHG Benchmark (or LSE-specific 2030 GHG Benchmark)*: the mass-based GHG emission planning targets calculated by staff for each LSE based on the methodology established by the California Air Resources Board and required for use in LSE Portfolio development in IRP.*

GHG Planning Price: *the systemwide marginal GHG abatement cost associated with achieving a specific electric sector 2030 GHG planning target.*

Integrated Resources Planning Standards (Planning Standards)*: the set of CPUC IRP rules, guidelines, formulas and metrics that LSEs must include in their LSE Plans.*

Integrated Resource Planning (IRP) process*: integrated resource planning process; the repeating cycle through which integrated resource plans are prepared, submitted, and reviewed by the CPUC*

Long term*: more than 5 years unless otherwise specified.*

Load Serving Entity*: an electrical corporation, electric service provider, community choice aggregator, or electric cooperative.*

Load Serving Entity (LSE) Plan*: an LSE's integrated resource plan; the full set of documents and information submitted by an LSE to the CPUC as part of the IRP process.*

Load Serving Entity (LSE) Portfolio*: a set of supply- and/or demand-side resources with certain attributes that together serve the LSE's assigned load over the IRP planning horizon.*

Loss of Load Expectation (LOLE): *a metric that quantifies the expected frequency of loss-of-load events per year. Loss-of-load is any instance where available generating capacity is insufficient to serve electric demand. If one or more instances of loss-of-load occurring within the same day regardless of duration are counted as one loss-of-load event, then the LOLE metric can be compared to a reference point such as the industry probabilistic reliability standard of "one expected day in 10 years," i.e., an LOLE of 0.1.*

Maximum Import Capability: a California ISO metric that represents a quantity in MWs of imports determined by the CAISO to be simultaneously deliverable to the aggregate of load in the ISO's

Balancing Authority (BAA) Area and thus eligible for use in the Resource Adequacy process. The California ISO assess a MIC MW value for each intertie into the ISO's BAA and allocated yearly to the LSEs. A LSE's RA import showings are limited to its share of the MIC at each intertie.

Net Qualifying Capacity (NQC): *Qualifying Capacity reduced, as applicable, based on: (1) testing and verification; (2) application of performance criteria; and (3) deliverability restrictions. The Net Qualifying Capacity determination shall be made by the California ISO pursuant to the provisions of this California ISO Tariff and the applicable Business Practice Manual.*

Non-modeled costs*: embedded fixed costs in today's energy system (e.g., existing distribution revenue requirement, existing transmission revenue requirement, and energy efficiency program cost).*

Nonstandard LSE Plan*: type of integrated resource plan that an LSE may be eligible to file if it serves load outside the CAISO balancing authority area.*

Optimization*: an exercise undertaken in the CPUC's Integrated Resource Planning (IRP) process using a capacity expansion model to identify a least-cost portfolio of electricity resources for meeting specific policy constraints, such as GHG reduction or RPS targets, while maintaining reliability given a set of assumptions about the future. Optimization in IRP considers resources assumed to be online over the planning horizon (baseline resources), some of which the model may choose not to retain, and additional resources (candidate resources) that the model is able to select to meet future grid needs.*

Planned resource: *any resource included in an LSE portfolio, whether already online or not, that is yet to be procured. Relating this to capacity expansion modeling terms, planned resources can be baseline resources (needing contract renewal, or currently owned/contracted by another LSE), candidate resources, or possibly resources that were not considered by the modeling, e.g., due to the passage of time between the modeling taking place and LSEs developing their plans. Planned resources can be specific (e.g., with a CAISO ID) or generic, with only the type, size and some geographic information identified.*

Qualifying capacity*: the maximum amount of Resource Adequacy Benefits a generating facility could provide before an assessment of its net qualifying capacity.*

Preferred Conforming Portfolio*: the conforming portfolio preferred by an LSE as the most suitable to its own needs; submitted to CPUC for review as one element of the LSE's overall IRP plan.*

Preferred System Plan: *The Commission's integrated resource plan composed of both the aggregation of LSE portfolios (i.e., Preferred System Portfolio) and the set of actions necessary to implement that portfolio (i.e., Preferred System Action Plan).*

Preferred System Portfolio: *the combined portfolios of individual LSEs within the CAISO, aggregated, reviewed and possibly modified by Commission staff as a proposal to the Commission, and adopted by the Commission as most responsive to statutory requirements per Pub. Util. Code 454.51; part of the Preferred System Plan.*

Short term*: 1 to 3 years (unless otherwise specified).*

Staff*: CPUC Energy Division staff (unless otherwise specified).*

Standard LSE Plan*: type of integrated resource plan that an LSE is required to file if it serves load within the CAISO balancing authority area (unless the LSE demonstrates exemption from the IRP process).*

Transmission Planning Process (TPP)*: annual process conducted by the California Independent System Operator (CAISO) to identify potential transmission system limitations and areas that need reinforcements over a 10-year horizon.*

Appendix A

Table 1: 30 MMT Resources

30 MMT	Existing Resources (Owned/ Contracted)	Existing Resources (Planned Procurement)	Existing Resources (CAM, VAMO, GHG-free Allocation, DR Allocation)	New Resources (CAM, VAMO, GHG-free Allocation, DR	New Resources (In Development)	Future New Resources	Total
Nuclear	-	-	-	-	-	-	-
CHP	-	-	-	-	-	-	-
Natural Gas	-	-	-	-	-	-	-
Coal	-	-	-	-	-	-	-
Hydro (large)	-	-	-	-	-	-	-
Hydro Import	-	-	-	-	-	-	-
Biomass	-	50	-	-	-	-	50
Geothermal	-	75	-	-	-	225	300
Hydro (small)	-	15	-	-	-		15
Wind	-	275	20	-	-		295
Out-of-State Wind on New Transmission	-	-		-	-	250	250
Off Shore Wind	-	-	-	-	-	275	275
Solar	-	350	31	-	-	-	381
Customer Solar	-	-		-	-	-	
Battery Storage	-	-	23	82	60	-	165
Hybrid	-	-	-	-	-	-	-
Solar	-	-	-	-	-	320	320
Storage	-	-	-	-	-	160	160
Pumped (long-duration) storage	-	-	-	-	-	271	271
Shed Demand Response	-	-	-	-	-	-	-
RPS Custom Profile	-	-	-	-	-	-	-
Capacity Only	-	-	-	-	-	-	-
Natural Gas	-	219	-	-	-	-	219
Battery Storage	-	-	-	-	-	-	-
Long Duration Storage	-	-	-	-	-	-	-

Table 2: 25 MMT Resources

25 MMT	Existing Resources (Owned/ Contracted)	Existing Resources (Planned Procurement)	Existing Resources (CAM, VAMO, GHG-free Allocation, DR Allocation)	New Resources (CAM, VAMO, GHG-free Allocation, DR	New Resources (In Development)	Future New Resources	Total
Nuclear	-	-	-	-	-	-	-
CHP	-	-	-	-	-	-	-
Natural Gas	-	-	-	-	-	-	-
Coal	-	-	-	-	-	-	-
Hydro (large)	-	-	-	-	-	-	-
Hydro Import	-	-	-	-	-	-	-
Biomass	-	50	-	-	-	-	50
Geothermal	-	75	-	-	-	225	300
Hydro (small)	-	15	-	-	-		15
Wind	-	275	20	-	-		295
Out-of-State Wind on New Transmission	-	-		-	-	250	250
Off Shore Wind	-	-	-	-	-	275	275
Solar	-	350	31	-	-	-	381
Customer Solar	-	-		-	-	-	
Battery Storage	-	-	23	82	60	-	165
Hybrid	-	-	-	-	-	-	-
Solar	-	-	-	-	-	320	320
Storage	-	-	-	-	-	160	160
Pumped (long-duration) storage	-	-	-	-	-	271	271
Shed Demand Response	-	-	-	-	-	-	-
RPS Custom Profile	-	-	-	-	-	-	-
Capacity Only	-	-	-	-	-	-	-
Natural Gas	-	213	-	-	-	-	213
Battery Storage	-	-	-	-	-	-	-
Long Duration Storage	-	-	-	-	-	-	-