Standard LSE Plan

LANCASTER CHOICE ENERGY

2022 INTEGRATED RESOURCE PLAN

NOVEMBER 1, 2022

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I. Introduction and Executive Summary

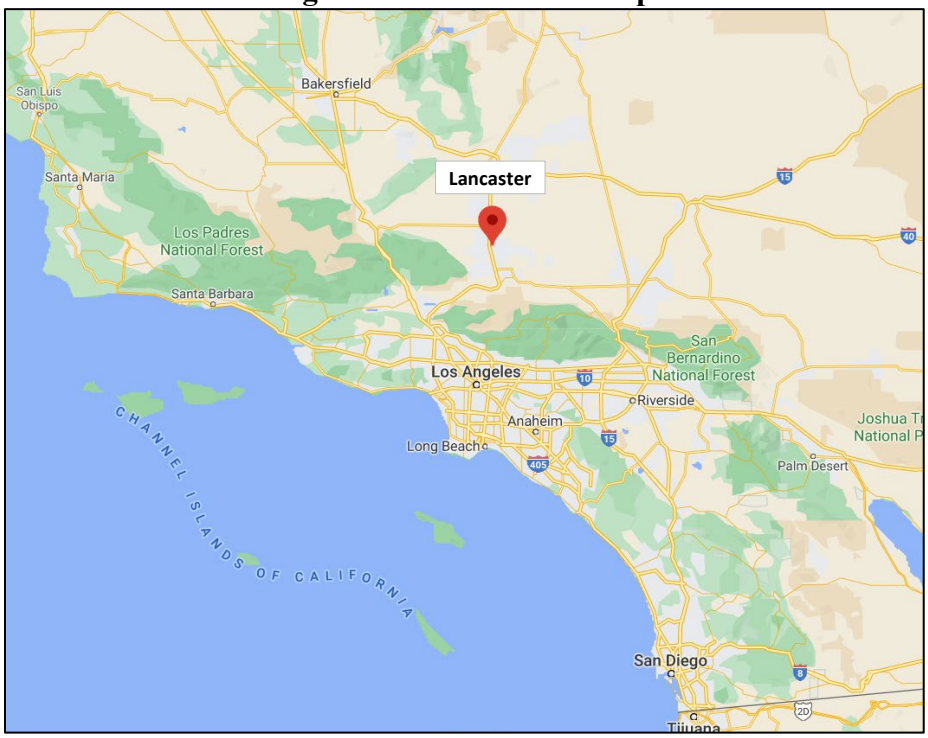
a. Introduction

Description of LCE

The City of Lancaster is a municipal corporation and charter city organized and operated under the laws of the State of California. The City of Lancaster is governed by, and accountable to, representatives elected by its citizens. The City of Lancaster operates numerous programs for the benefit of its citizens, including Lancaster Choice Energy ("LCE").

LCE was formed by the Lancaster City Council on August 9, 2016, through Ordinance 997 and began serving load in May 2015. LCE currently provides retail electric generation services and complementary energy programs to customers within the municipal boundaries of the City of Lancaster. LCE launched as the City's Community Choice Aggregation ("CCA") program for the purposes of promoting local control and local economic benefits as well as offering participating customers competitive and stable rates.

Figure 1: Service Area Map



LCE currently serves approximately 45,900 residential accounts and 5,860 commercial and industrial accounts. LCE 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. LCE's service area has a population of approximately 174,000, the majority of which live in households or work at businesses that receive generation service from LCE. In 2021, LCE had a peak load of 210 MW, and a total 2021 energy usage of 615 GWh.

LCE has pursued CCA implementation activities under a shared service model, which means LCE has joined together with other, regionally located and city specific CCA programs to promote administrative efficiencies by outsourcing many operational and technical services typically required for CCA administration and operation. The California Choice Energy Authority, or CalChoice, is the organization selected by LCE to provide requisite services, including resource planning and procurement activities. Key decisions of LCE, including rate setting, retail supply portfolio composition, disposition of financial reserves, and administration of complementary programs, are addressed by the Lancaster City Council with supporting input from LCE staff and CalChoice personnel. Due to the relatively small size of the Lancaster (both in terms of population and retail sales), meaningful administrative efficiencies have been achieved through joint solicitation/procurement administration through CalChoice. By partnering with CalChoice, LCE has been able to establish and pursue objectives and key parameters that are directly responsive to the unique constituents and interests within the City of Lancaster.

LCE's Mission

LCE was formed for the express purpose of empowering the city to choose the generation resources that reflect its specific values, needs and cost preferences. More specifically, LCE seeks to provide reliable electric service, within the city, at competitive rates when compared to those rates offered by the incumbent electric utility and also prioritizes local control, economic development and environmental stewardship within the Lancaster. Consistent with Public Utilities Code Sections 366.2(a)(5) and 454.52 (b)(3),[1] all procurement by LCE, including the portfolios set forth in this Integrated Resource Plan ("IRP"), must comply with policy direction provided from LCE's governing board, which is comprised of the Lancaster City Council.

Introduction to LCE'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], LCE 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, LCE's IRP includes the following documents:

- LCE's 2030 38 MMT & 2035 30 MMT Resource Data Template and Clean System Power Calculator

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

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

As directed in D.22-02-004[4] and the *Final Ruling*, LCE 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 LCE expects changes over time. The future resources identified in LCE's IRP represent LCE'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, LCE policy, resource availability and other key considerations. The resources identified in future iterations of LCE's IRP may change due to new information and evolving circumstances, and the ultimate resource mix that LCE 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] the implementation of the Central Procurement Entity ("CPE"),[6] as well as structural, programmatic changes to the IRP program.[7] 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 LCE's future procurement decisions. Through its involvement and membership in the California Community Choice Association ("CalCCA"), LCE will continue to monitor and engage in Commission proceedings and incorporate pertinent planning and procurement adaptations as necessary.

City Council Approval of IRP

In compliance with Public Utilities Code Section 454.52(b)(3), this IRP was formally submitted to the Lancaster City Council 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 LCE's governing council. On October 25, 2022, the Lancaster City Council issued a Resolution which formally approved this IRP and adopted LCE's 30 MMT and 25 MMT Preferred

[4] D.22-02-004 at 2.
[5] Decision 22-06-050.
[6] See Decisions 20-06-002, 22-03-034.
[7] See Rulemaking 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.

Conforming Portfolios ("PCPs"). LCE's Resolution also made the following determinations regarding LCE's PCPs:

- LCE'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).
- LCE's PCPs include a diversified procurement portfolio consisting of both short-term and long-term electricity and electricity-related and demand reduction products.
- LCE's PCPs achieve the resource adequacy requirements established pursuant to Public Utilities Code Section 380.
- LCE's PCPs are consistent with the procurement timing, resource mix, and operational attributes of both the Commission's Preferred System Portfolio ("PSP").[8]
- LCE's PCPs are compliant with all LCE board-adopted procurement directives.

A copy of the final Resolution is available on the City's website.

Request for Certification

LCE 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."[9] Likewise, the Legislature has granted CCAs autonomy in setting their own rates and managing interactions with their customers.[10] LCE 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.[11]

[8] In Decision 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.

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

[10] 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…").

[11] 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 . . .").

- Ensuring that CCAs' current and planned procurement is consistent with the RA requirements established pursuant to PUC Section 380.5.[12]
- 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.[13]

LCE 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 LCE's IRP.

b. Executive Summary

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

LCE developed its IRP through the following steps:

- LCE compiled data for its existing energy contracts, RA capacity contracts, and its share of capacity for allocated Cost Allocation Mechanism ("CAM") resources.
- For each IRP planning year, LCE identified its short positions relative to known planning targets and its assigned load forecast.
- LCE populated the Resource Data Template with all current contracts.
- LCE compiled detailed information on projects for which it is currently negotiating power purchase agreements, including information regarding project status and timing.
- LCE identified future contracts it expects to secure for new solar, storage, geothermal and wind generation. LCE prioritized the selection of future resources to ensure that LCE's overall portfolio of new resources is varied, meets all regulatory goals, meets the goals expressed by LCE's City Council, and is estimated to minimize costs to customers, subject to applicable mandates. LCE added generic future contracts with existing resources, including large hydroelectric generators, to help fill its remaining open positions.
- LCE 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 equivalent to, or slightly less than, LCE's assigned share of the 30 MMT benchmarks; LCE added planned purchases of RPS qualifying renewable and large hydroelectric energy in sufficient volume to ensure that portfolio emissions were equal to, or slightly less than, LCE's assigned share of the 30 MMT GHG benchmark.
- LCE identified the resulting portfolio as its 30 MMT PCP.

[12] Section 454.52(b)(3)(C).
[13] Section 454.51.

- Using the 30 MMT PCP as a starting point, LCE replaced planned system energy purchases with hydroelectric energy] procurement until the portfolio reflected emissions equal to, or slightly less than, LCE's assigned share of the 25 MMT GHG benchmark.
- LCE identified the resulting portfolio as its 25 MMT PCP.
- LCE checked both its 30 MMT PCP and its 25 MMT PCP for reliability by comparing the total portfolio capacity against LCE's RA requirements as shown in the Reliability tab and adding in sufficient RA capacity to ensure reliability. LCE further established that its planned incremental capacity procurement met or exceeded its pro rata share of the related incremental capacity procurement obligation.

LCE reached the following findings regarding its 30 MMT portfolio:

- LCE's 30 MMT portfolio includes the procurement of the following new resources:
    - New hybrid resources totaling 22 MW solar/10 MW battery storage
    - New wind resources totaling 29 MW
    - New geothermal resources totaling 12 MW
    - New long duration storage of 33 MW
- LCE's 30 MMT portfolio provides for the following overall resource mix in 2035:
    - 121 GWh of Large Hydro
    - 5 GWh of Biomass
    - 116 GWh of Geothermal
    - 10.5 GWh of Small Hydro
    - 225 GWh of Wind
    - 161 GWh of Solar
    - 126 MWh of Short Duration Battery Storage
    - 266 MWh of Long Duration Storage
    - 100 MW of Natural Gas/Baseload/Other (Capacity-Only)
- LCE's 30 MMT portfolio conforms to the procurement timing, resource quantities, and general resource attributes identified in the PSP.
- LCE's 30 MMT portfolio would have 2035 emissions of 0.0576 MMT. This is equivalent to LCE's assigned share of 2035 emissions.
- LCE's 30 MMT portfolio meets all relevant reliability metrics.
- LCE's 30 MMT portfolio provides approximately LCE's load-proportional share of renewable integration resources.

LCE reached the following findings regarding its 25 MMT Portfolio:

- LCE's 25 MMT Portfolio includes the procurement of the following new resources:
    - New hybrid resources totaling 22 MW solar/10 MW battery storage
    - New wind resources totaling 29 MW
    - New geothermal resources totaling 12 MW
    - New long duration storage of 33 MW
- LCE's 25 MMT Portfolio provides for the following overall resource mix in 2035:
    - 134 GWh of Large Hydro
    - 5 GWh of Biomass

- 116 GWh of Geothermal
- 10.5 GWh of Small Hydro
- 224 GWh of Wind
- 161 GWh of Solar
- 126 GWh of Short Duration Battery Storage
- 266 GWh of Long Duration Storage
- 98 MW of Natural Gas/Baseload/Other (Capacity-Only)

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

- LCE's 25 MMT portfolio would have 2030 emissions of 0.0566 MMT and 2035 emissions of 0.0456 MMT, which is less than LCE's assigned share of 2030 and 2035 emissions.
- LCE's 25 MMT portfolio meets all relevant reliability metrics.
- LCE's 25 MMT portfolio provides approximately LCE's load-proportional share of renewable integration resources.
- LCE's 25 MMT portfolio is also consistent with the Commission's PSP and can be used in either a 25 MMT or 30 MMT consolidated statewide portfolio.

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

- LCE will periodically solicit offers for new renewable generation and storage projects. These resources are typically secured through long-term power purchase agreements. LCE expects to secure power purchase agreements for new projects in multiple solicitations conducted over the next several years.
- Periodically throughout the year, LCE 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 LCE's risk management policy and practices. These solicitations may take the form of formal request for offers processes, bilateral discussions, and/or transactions arranged through broker markets.
- LCE 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

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

1. Identify a 30 MMT PCP with emissions equal to or slightly less than LCE's proportional share of the 30 MMT GHG reduction benchmark, as determined using the Commission's emissions calculator.

2. Identify a 25 MMT PCP with emissions equal to or slightly less than LCE's proportional share of the 25 MMT GHG reduction benchmark, 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 LCE's share of system reliability and renewable integration resources.
6. Identify portfolios that comply with all of LCE's Board-adopted procurement directives.
7. Identify portfolios that are compliant with LCE's obligations under the Renewables Portfolio Standard ("RPS") program.
8. Identify portfolios that are cost-effective and minimize rate impacts on LCE's customers.

b. Methodology

i. Modeling Tool(s)

In developing its planned portfolios, LCE 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, LCE consulted with CalChoice, leveraging its extensive experience and expertise in the areas of resource planning and procurement, to construct LCE'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 LCE's currently effective risk management policies and business practices.

LCE also utilized its commercial energy trading and risk management system to monitor positions, market exposure, credit exposure, value-at-risk, and other risk management metrics. LCE 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.

LCE 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 LCE's resource portfolio. LCE 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, LCE 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, LCE relied upon the modeling and assumptions in the Preferred System Portfolio, LCE's ongoing and recent procurement experience, and consultation with CalChoice, which helped shape assumptions related to resource availability and cost. In addition, LCE's new resource selection reflected the preferences of its City Council, 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

LCE developed this IRP using its assigned load forecast from the file 2022 Final GHG Emission Benchmarks for LSEs[14] (also contained in the CSP templates), as directed in the *Final Ruling*.

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

Year	Load Forecast
2023	589.26
2024	595.74
2025	599.86
2026	603.66
2027	608.98
2028	613.16
2029	617.43
2030	621.33
2031	625.23
2032	627.58
2033	630.28
2034	632.71
2035	635.45

Load Shape

In developing its portfolio LCE 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.[15]

[14] 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.
[15] *Final Ruling* at 3.

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

Load-Proportional GHG Emissions Benchmark

LCE'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: LCE's Assigned Shares of GHG Reduction Benchmarks[16]

2035 Load (GWh)	Proportion of 2035 Load within IOU Territory	2035 GHG Benchmark – 30 MMT Scenario	2035 GHG Benchmark – 25 MMT Scenario
635.45	0.72%	0.058	0.046

Compiling Existing Resources

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

- Energy Contracts.
- Capacity (Resource Adequacy) Contracts.
- LCE's assigned share of capacity for CAM resources, taken from Energy Division's *Aggregated CAM Resources for LSEs Plan Development* (September 29, 2022).
- LCE's selected Voluntary Allocation and Market Opportunities ("VAMO") allocation of RPS resources from Southern California Edison Company ("SCE")
- LCE's allocation of GHG-free resources from SCE

Selecting New Resources

To identify its new resource procurement opportunities, LCE 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. LCE 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

LCE'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

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

included a 14% Perfect Capacity ("PCAP") Planning Reserve Margin.[17] LCE 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, LCE added sufficient short-term RA capacity in each year. LCE'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

LCE 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, LCE is submitting two conforming portfolios – a 30 MMT Conforming Portfolio that achieves LCE's share of the 38 MMT by 2030 and 30 MMT by 2035 GHG targets; and a 25 MMT Conforming Portfolio that achieves LCE's share of the 30 MMT by 2030 and 25 MMT by 2035 GHG targets. LCE is not submitting alternative portfolios.

LCE's 30 MMT Conforming Portfolio

The following table provides a summary of LCE's 2035 30 MMT Portfolio, identifying resources by type and distinguishing between the following procurement categories:

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

In summary, to meet LCE's projected 2035 energy demand of 635 GWh, LCE has selected a 2035 30 MMT Conforming Portfolio composed primarily of the following resources:

[17] 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.

Table 3: Resources for 2035 30 MMT Conforming Portfolio

Resource Category	Under Development	Owned or Contracted	Planned Existing	Planned New	Under Review	Total
Battery Storage (MWh Energy Capacity)	18.77	7.83	0	306.4	60	393.01
Biomass (GWh)	0	0	5	0	0	5
Geothermal (GWh)	0	0.99	25	65.7	24.01	115.7
Hybrid or Paired Solar and Battery (GWh)	0	0	0	56	0	56
Large Hydro (GWh)	0	13.27	108	0	0	121.27
Small Hydro (GWh)	0	0.5	10	0	0	10.5
Solar Existing California (GWh)	0	75.33	30	0	0	105.33
Wind Existing California (GWh)	0	69.11	40	0	0	109.11
Wind New Mexico(GWh)	0	15.3	0	0	0	15.3
Wind Wyoming (GWh)	0	0	0	35	0	35
Wind Offshore Morro Bay (GWh)	0	0	0	65	0	65

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

- CAM, Demand Response and Energy Efficiency Allocations – 38 MW
- Existing natural gas, baseload, and other (planned procurement) – 290 MW

LCE's portfolio includes a mix of existing and new resources. Approximately 97 MW of LCE's 30 MMT portfolio is composed of new resources, reflecting LCE's role as an active player in the State's development of new renewable and storage resources. Furthermore, LCE's 30 MMT portfolio is comprised of a mix of resources in which LCE can minimize customer rate impacts while still achieving the State's GHG-reduction targets.

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

The new resources included in LCE'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.[18]

[18] 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, LCE understands the Decision to be referencing Tables 5 and 6.

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

Table 4: Comparison of LCE's 30 MMT Conforming Portfolio vs PSP

Resource Category	PSP (MW)	LCE's Proportional Share of PSP New Resources (MW)	LCE's 30 MMT Conforming Portfolio (MW)
Gas	-	-	-
Biomass	134	0.51	0
Geothermal	1,135	4.34	12
Wind	3,562	13.61	29
Wind On New OOS Transmission	4,636	17.72	10
Offshore Wind	4,707	17.99	19
Utility-Scale Solar	17,418	66.57	30
Battery Storage	17,350	66.31	73
Pumped (Long-Duration) Storage[19]	1,000	3.82	33
Shed Demand Response	977	3.73	10

LCE's proportional share of the PSP New Resources and the resources reflected in LCE's 30 MMT Portfolio are relatively aligned. However, LCE's 30 MMT Conforming Portfolio reflects a lower level of new resource procurement due to LCE's relatively early-stage development, size and related cost/rate considerations while still ensuring LCE meets its prescribed portfolio targets. LCE may need to engage in further resource development, which would likely include additional solar and storage resources. LCE's current portfolio includes a greater proportion of higher capacity factor geothermal, which produces a higher volume of energy per MW of capacity.

LCE's 25 MMT Conforming Portfolio

The following table provides a summary of LCE's 25 MMT Conforming Portfolio (by 2035), identifying resources by type and distinguishing between the following procurement categories:

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

[19] LCE 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.

- Future new resources (energy and capacity) that LCE is planning to procure.

In summary, to meet LCE's projected 2035 energy demand of 635 GWh, LCE has selected a 2035 25 MMT Conforming Portfolio composed primarily of the following resources:

Table 5: Resources for 2035 25 MMT Conforming Portfolio

Resource Category	Under Development	Owned or Contracted	Planned Existing	Planned New	Under Review	Total
Battery Storage (MWh Energy Capacity)	18.77	7.83	0	306.4	60	393.01
Biomass (GWh)	0	0	5	0	0	5
Geothermal (GWh)	0	0.99	25	65.7	24.01	115.7
Hybrid or Paired Solar and Battery (GWh)	0	0	0	56	0	56
Large Hydro (GWh)	0	13.27	121	0	0	134.27
Small Hydro (GWh)	0	0.5	10	0	0	10.5
Solar Existing California (GWh)	0	75.33	30	0	0	105.33
Wind Existing California (GWh)	0	69.11	40	0	0	109.11
Wind New Mexico(GWh)	0	15.3	0	0	0	15.3
Wind Wyoming (GWh)	0	0	0	35	0	35
Wind Offshore Morro Bay (GWh)	0	0	0	65	0	65

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

- CAM, Demand Response and Energy Efficiency Allocations – 38 MW
- Existing natural gas, baseload, and other (planned procurement) – 288 MW

LCE's portfolio includes a mix of existing and new resources. Approximately 97 MW of LCE's 2035 portfolio is composed of new resources, reflecting LCE's role as an active player in the State's development of new renewable and storage resources. Furthermore, LCE's 2035 portfolio is comprised of a mix of resources in which LCE can minimize customer rate impacts while still achieving the State's GHG-reduction targets.

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

The new resources included in LCE'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.[20] 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.[21]

The Decision identifies planned use of 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, LCE's 25 MMT portfolio is generally consistent with LCE's proportional share of new procurement for each of the "resource types" identified in D.22-02-004:

Table 6: Comparison of LCE's 25 MMT Conforming Portfolio vs. PSP New Resources

Resource Category	PSP (MW)	LCE's Proportional Share of PSP New Resources (MW)	LCE's 25 MMT Conforming Portfolio (MW)
Gas	-		
Biomass	134	0.51	0
Geothermal	1,135	4.34	12
Wind	4,270	16.32	29
Wind On New OOS Transmission	4,828	18.45	10
Offshore Wind	4,707	17.99	19
Utility-Scale Solar	21,794	83.30	30
Battery Storage	17,742	67.81	73
Pumped (Long-Duration) Storage[22]	1,000	3.82	33
Shed Demand Response	767	2.93	10

LCE's proportional share of the PSP New Resources and the resources reflected in LCE's 25 MMT Portfolio are relatively aligned. However, LCE's 25 MMT Conforming Portfolio reflects a lower level of new resource procurement due to LCE's relatively early-stage development, size and related cost/rate considerations while still ensuring LCE meets its prescribed portfolio targets. LCE may need to engage in further resource development, which would likely include additional solar and storage resources. LCE's current portfolio includes a greater proportion of higher capacity factor geothermal, which produces a higher volume of energy per MW of capacity.

[20] 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, LCE understands the Decision to be referencing Tables 5 and 6.
[21] *Final Ruling* at 9-10.
[22] LCE 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 4 above, LCE's IRP, LCE's 30 MMT PCP consists of a combination of:

- Natural Gas
- Biomass
- Geothermal
- Wind
- Wind on New-Out-of-State Transmission
- Offshore Wind
- Utility-Scale Solar
- Hybrid Solar Plus Storage
- Battery Storage
- Pumped (Long-Duration) Storage
- Shed Demand Response

As stated above, in accordance with Section 454.51(b)(3), LCE'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. [LCE prefers the 30 MMT PCP over the 25 MMT PCP, discussed in the next section. The 30 MMT PCP continues LCE toward substantial emissions reductions, but also provides a diverse and reliable portfolio, while moderating cost impacts to customers. These benefits and characteristics are discussed in the following sections.]

GHG Reduction Goals

LCE'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).[23] The 2035 emissions from LCE's 30 MMT PCP are equivalent to LCE's load-proportional share of the 30 MMT by 2035 emissions target. LCE's proportional share of the 30 MMT GHG target is 0.0758 MMT in 2030 and 0.0578 MMT in 2035. According to the Commission's emissions calculator, LCE's 30 MMT PCP would account for 0.0756 MMT in 2030 and 0.0576 MMT in 2035 emissions, which is less than or equal to the GHG Benchmarks for LCE.

Renewable Energy

LCE'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

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

renewable resources. In 2035 LCE's 30 MMT PCP portfolio would consist of 60.2% eligible renewable generation, which exceeds the 60% requirement.

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

As detailed in Section III.e., below, LCE is committed to serving its customers at reasonable rates. In addition to setting rates that are competitive with SCE, LCE works to minimize rate volatility by constructing a balanced and conservatively hedged power supply portfolio, building prudent financial reserves, and minimizing rate changes to once per year, whenever possible.

Minimizing Bill Impact

LCE'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. LCE's 30 MMT PCP portfolio consists primarily of renewable resources that generally support a least-cost, best-fit procurement strategy. LCE's planned use of large hydro resources is expected to minimize costs associated with lowering GHG emissions because the cost premiums associated with large hydro energy is less than those associated with RPS qualifying renewable energy.

LCE prioritizes cost competitiveness, reliability, use of renewable energy and local economic development amongst its primary concerns. LCE 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. LCE 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, LCE 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, LCE'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

LCE'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. With the adoption of the Central Procurement Entity structure, LCE no longer has local resource adequacy requirements since the CPE has taken over the procurement of local resource adequacy capacity within LCE's service area, pursuant to D.20-06-002. LCE's portfolio assumes CAM allocations and CAM resources, which incorporate CPE system and flexible capacity allocations, consistent with what

is described in the most recently issued CPE procurement allocations. At this point, uncertainties and initial implementation issues with the CPE make it difficult for LCE to estimate how the CPE structure will change LCE's RA needs over time.

As it has done in the past, and as shown in most state planning studies, LCE anticipates that it will meet a portion of its reliability needs through capacity-only contracts with natural gas plants. LCE has contracted with demand response resources to fulfill some of its RA needs and is exploring other opportunities for demand response. LCE 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 LCE'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), LCE 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, LCE has procured 81% from long-term contracts. Additionally, the majority of the resources shown in LCE's 30 MMT PCP are expected to be acquired through long-term contracts. LCE 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

LCE'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). LCE's 30 MMT PCP relies on procurement from a variety of resource types as well as significant storage resources incorporated in hybrid solar and storage configuration. LCE believes that the complementary nature of the solar and storage in hybrid resources makes better use of the existing transmission system. LCE 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, LCE 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, LCE has recently procured demand response capacity resources, providing additional system diversity.

Demand-Side Energy Management

LCE'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. LCE 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 LCE's procurement toward

D.21-06-035, as discussed in more detail in Section IV.a.ii., LCE has contracted for demand response resources to meet a portion of its requirements.

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

LCE'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. LCE's 30 MMT PCP relies primarily on renewable generation and hydroelectric generation, and this portfolio is expected to exhibit relatively low GHGs and localized air pollution emissions. LCE's 30 MMT PCP minimizes LCE'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 LCE's 30 MMT PCP in 2035:

- NOx: 8 tonnes/year
- PM 2.5: 4 tonnes/year
- SO2: 1 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 LCE portfolio by the CSP tool. In evaluating new use of biomass resources, LCE will prioritize those located outside of DACs to the greatest practical extent.

iii. 25 MMT Preferred Conforming Portfolio

As demonstrated in Table 6 above, LCE's 25 MMT Preferred Conforming Portfolio consists of a combination of:

- Utility-Scale Solar
- In-State Wind
- Out-Of-State Wind
- Short-Duration Storage
- Long-Duration Storage
- Small and Large Hydrogeneration
- Biomass
- Natural Gas/Baseload/Other (capacity only)

As stated above, in accordance with Section 454.51(b)(3), LCE's governing board has determined that the resource mix in its 20 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

LCE'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).[24] The 2035 emissions from LCE's 25 MMT PCP are equivalent to LCE's load-proportional share of the 25 MMT by 2035 emissions target. LCE's proportional share of the 25 MMT GHG target is 0.0569 MMT in 2030 and 0.0459 MMT in 2035. According to the Commission's emissions calculator, LCE's 25 MMT PCP would account for 0.0566 MMT in 2030 and 0.0456 MMT in 2035 emissions, which is less than or equal to the GHG Benchmarks for LCE.

Renewable Energy

LCE'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 LCE's 25 MMT PCP would consist of 60.1% 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

As detailed in Section III.e., below, LCE is committed to serving its customers at reasonable rates. In addition to setting rates that are competitive with SCE, LCE works to minimize rate volatility by constructing a balanced and conservatively hedged power supply portfolio, building prudent financial reserves, and minimizing rate changes to once per year, whenever possible.

Minimizing Bill Impact

LCE'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. LCE's portfolio consists primarily of renewable resources that are well suited to a least-cost, best-fit procurement strategy. LCE's planned use of large hydro resources is expected to minimize costs associated with lowering GHG emissions because the cost premiums associated with large hydro energy is less than those associated with RPS qualifying renewable energy.

LCE prioritizes cost competitiveness, reliability, use of renewable energy and local economic development amongst its primary concerns. LCE 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. LCE 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, LCE 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

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

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, LCE'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

LCE'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. With the adoption of the Central Procurement Entity structure, LCE no longer has local resource adequacy requirements since the CPE has taken over the procurement of local resource adequacy capacity within LCE's service area, pursuant to D.20-06-002. LCE's portfolio assumes CAM allocations and CAM resources, which incorporate CPE system and flexible capacity allocations, consistent with what is described in the most recently issued CPE procurement allocations. At this point, uncertainties and initial implementation issues with the CPE make it difficult for LCE to estimate how the CPE structure will change LCE's RA needs.

As it has done in the past, and as shown in most state planning studies, LCE anticipates that it will meet a portion of its reliability needs through capacity-only contracts with natural gas plants. LCE has contracted with demand response resources to fulfill some of its RA needs and is exploring other opportunities for demand response. LCE 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 LCE'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), LCE 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, LCE has procured 81% from long-term contracts. Additionally, the majority of the resources shown in LCE's 25 MMT PCP are expected to be acquired through long-term contracts. LCE 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

LCE'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). LCE's 25 MMT PCP relies on procurement from a variety of resource types as well as significant storage resources, incorporated in hybrid solar and storage configuration. LCE believes that the complementary nature of the solar and storage in hybrid resources makes better use of the existing transmission system. LCE 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, LCE 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, LCE has recently procured demand response capacity resources, providing additional system diversity.

Demand-Side Energy Management

LCE'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. LCE 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 LCE's procurement toward D.21-06-035, as discussed in more detail in Section IV.a.ii., LCE has contracted for demand response resources to meet a portion of its requirements.

Minimizing Localized Air Pollutants with Emphasis on DACs

LCE'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. LCE's 25 MMT PCP relies primarily on renewable generation and hydroelectric generation, and this portfolio is expected to exhibit relatively low GHGs and localized air pollution emissions. LCE's 25 MMT PCP minimizes LCE'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 LCE's 25 MMT PCP in 2035:

- NOx: 8 tonnes/year
- PM 2.5: 3 tonnes/year
- SO2: 1 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 LCE portfolio by the CSP tool. In evaluating use of new biomass resources, LCE will prioritize those located outside of DACs to the greatest practical extent.

c. GHG Emissions Results

LCE 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. LCE's assigned load proportional share of the 30 MMT benchmark in 2030 is 0.0758 MMT and in 2035 is 0.0578 MMT. Based on the 30 MMT version of the CSP calculator, LCE's 30 MMT PCP would result in total 2030 GHG emissions of 0.0756 MMT and 2035 GHG emissions 0.0576 MMT, which is slightly less than LCE's assigned share of the 30 MMT GHG reduction benchmark.

LCE's assigned load proportional share of the 25 MMT *GHG Benchmark* in 2030 is 0.0569 MMT and in 2035 is 0.0459 MMT. Based on the 25 MMT version of the CSP calculator, LCE's 25 MMT PCP would result in total 2030 GHG emissions of 0.0566 MMT and 2035 GHG emissions of 0.0456 MMT, which is slightly less than LCE'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 LCE's 30 MMT portfolio:

Table 7: 30 MMT Portfolio Air Pollutants

Emissions Total	Unit	2024	2026	2030	2035
CO_2	*MMT/yr*	0.14	0.12	0.0756	0.0576
PM 2.5	*tonnes/yr*	5	6	4	4
SO_2	*tonnes/yr*	1	1	0	1
NO_X	*tonnes/yr*	10	11	7	8

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

Table 8: 25 MMT Portfolio Air Pollutants

Emissions Total	Unit	2024	2026	2030	2035
CO_2	*MMT/yr*	0.14	0.13	0.0566	0.0456
PM 2.5	*tonnes/yr*	5	5	3	3
SO_2	*tonnes/yr*	1	1	0	1
NO_X	*tonnes/yr*	10	11	6	8

LCE's contribution to air pollutants is a result of a combination of electricity procured from biomass and system power exclusively from reliance on system power. 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 9: 30 MMT Portfolio Demand, Fossil Fuel Resources and System Power

	2024	2026	2030	2035
Demand	596	604	621	635
Net System Power	299	263	145	119
% of Load Served by System Power	50%	44%	23%	19%

Table 10: 25 MMT Portfolio Demand, Fossil Fuel Resources and System Power

	2024	2026	2030	2035
Demand	596	604	621	635
Net System Power	300	264	101	89
% of Load Served by System Power	50%	44%	16%	14%

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

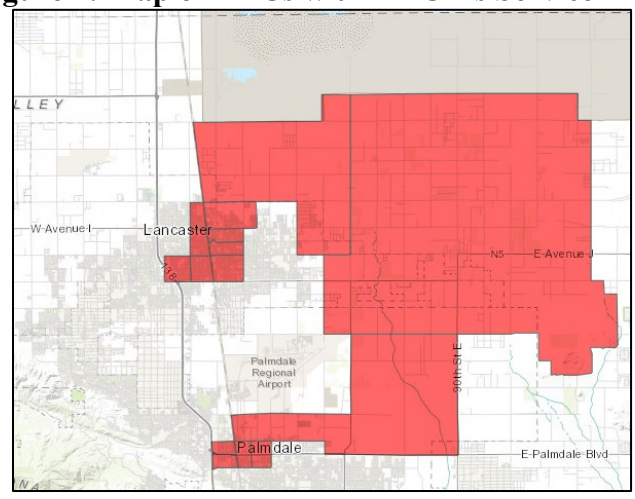
ii. Focus on Disadvantaged Communities

LCE'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.

LCE serves customers in the following DACs:

Figure 2: Map of DACs within LCE's Service Area



LCE's service area includes the following DAC census tracks:

- Among the highest 15% of census tracts
  - 6037900602: CalEnviroScreen 4.0 score of 51
  - 6037900701: CalEnviroScreen 4.0 score of 51
  - 6037900804: CalEnviroScreen 4.0 score of 49

    - 6037900806: CalEnviroScreen 4.0 score of 48
- Among the highest 20% of census tracts
    - 6037900501: CalEnviroScreen 4.0 score of 47
    - 6037900607: CalEnviroScreen 4.0 score of 45
    - 6037900606: CalEnviroScreen 4.0 score of 44
- Among the highest 25% of census tracts
    - 6037900703: CalEnviroScreen 4.0 score of 41

Power Procurement in DACs

LCE does not currently procure electricity directly from any natural gas or other fossil fuel power plants. However, LCE 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.

LCE additionally evaluated its indirect impacts on disadvantaged communities throughout the state. LCE relies on 64% of system power, which represents a reduction since the 2020 IRP was prepared and submitted. Looking forward, LCE's 30 MMT PCP will reduce reliance on system power from the current 64% to 19% in 2035. While LCE strives to reduce its dependence on resources that emit GHGs and other local pollutants, LCE must also balance that goal against reliability and affordability, which is what LCE has strived to do in its PCPs.

LSE Activities and Programs Impacting DACs

Additionally, LCE provides a California Alternate Rates for Energy ("CARE") and Family Electric Rate Assistance ("FERA") to customers, which includes approximately 10,000 customers. CARE customers save approximately 30-35% on their total bill.

LCE 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.

LCE provides an Arrearage Management Plan ("AMP"), which may forgive $1/12^{th}$ of a customer's overall debt for each month a payment is made on time. Additionally, LCE 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.

Lancaster is offering a pilot program, Power Choice, to provide home developers and homeowners with a zero up-front cost option to install solar and battery systems when building a new home to meet Title 24 solar requirements in a low-risk, cost effective manner. Through its partnership with Tesla and Participant Energy, the program benefits customers with easy access to solar financing and installation, access to back-up power in the event of emergency or public safety power shut-off and provides substantial savings on electric bills.

Lancaster has partnered with OhmConnect to offer discounted smart thermostats to its customers while offering a free service that pays its customers for their energy savings during demand response energy events. Collectively, OhmConnect and their CCA partners in the program saved over 1.5GW during the September 2022 heat event.

e. Cost and Rate Analysis

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

LCE strives to keep customer costs as low as possible. This is reflected both in the resources procured and in the timing of those procurements. LCE 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 LCE'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 LCE's load profile, or serving the needs of the Lancaster community.

In general, LCE sought to balance the need to procure resources with enough lead time to meet LCE'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. LCE also recognizes that future resource costs are highly uncertain, and technological advancement can happen unexpectedly; LCE's procurement cycle is designed to take advantage of technological and cost improvements by incrementally adding new resource commitments over time.

LCE'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 LCE 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.

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

The preferred 30 MMT portfolio would result in slightly lower ratepayer costs than would the 25 MMT portfolio. LCE estimates that the 25 MMT portfolio would cost $352,000 per year more than the 30 MMT due to greater use of hydroelectric power in lieu of system power.

f. System Reliability Analysis

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

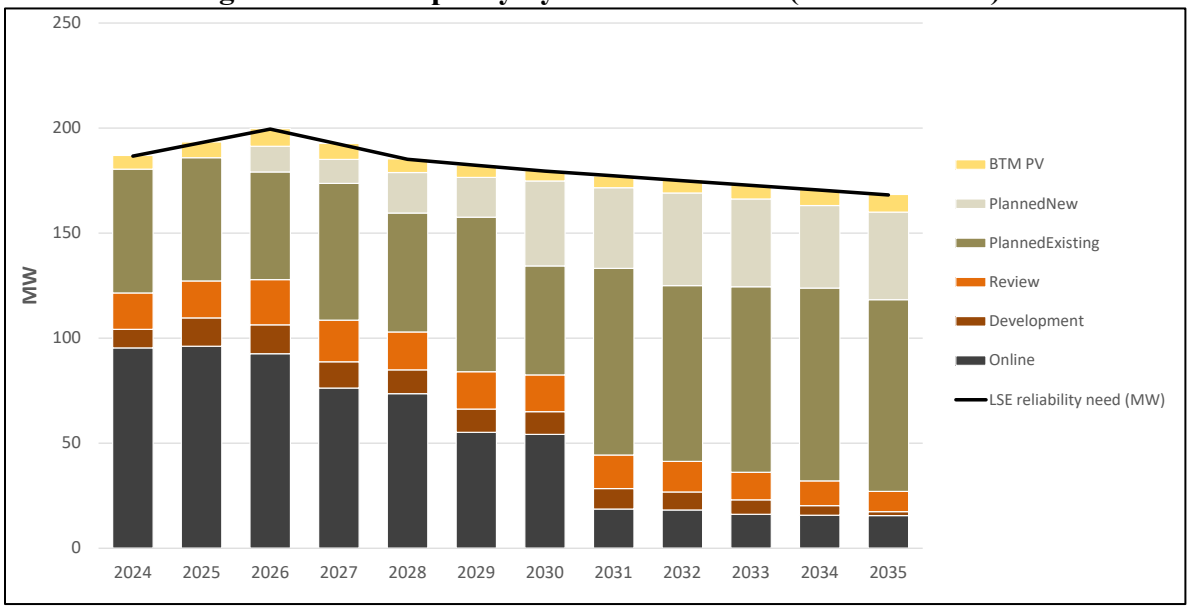
LCE 30 MMT PCP

The effective capacity of LCE'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 10: System Reliability Progress Tracking, September, 30 MMT PCP

Load and Resource Table by Contract Status													
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
LSE reliability need (MW)		**187**	**193**	**200**	**192**	**185**	**182**	**180**	**177**	**175**	**173**	**170**	**168**
ELCC by contract status (effective MW)													
Online		95	96	93	76	74	55	54	19	18	16	16	16
Development		9	14	14	13	11	11	11	10	9	7	5	2
Review		17	18	22	20	18	18	17	16	15	13	12	10
PlannedExisting		59	59	51	65	57	74	52	89	84	88	92	91
PlannedNew		-	-	12	11	19	19	40	38	44	42	39	42
BTM PV		7	7	8	8	7	6	5	6	6	7	8	8
LSE total supply (effective MW)		**187**	**193**	**200**	**193**	**185**	**182**	**180**	**177**	**175**	**173**	**171**	**168**
Net capacity position (+ve = excess, -ve = shortfall) (effective MW)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Figure 3: LSE Capacity by Contract Status (30 MMT PCP)



As demonstrated in Table 10, LCE's 30 MMT PCP contributes 160 MW of peak monthly NQC in 2035. Combined with LCE's allocation of 8 MW of behind-the-meter PV, this makes for an LSE total supply of 168 MW. As shown in the table above, this NQC meets LCE's reliability need. Of this total, 59 MW are related to new renewable and hybrid resources as well as new short- and long-duration storage resources. LCE'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 101 MW of NQC. This balanced portfolio of flexible capacity works to effectively and reliably integrate a renewables-heavy portfolio, thus exceeding LCE's share of any system-wide renewable integration resource requirements.

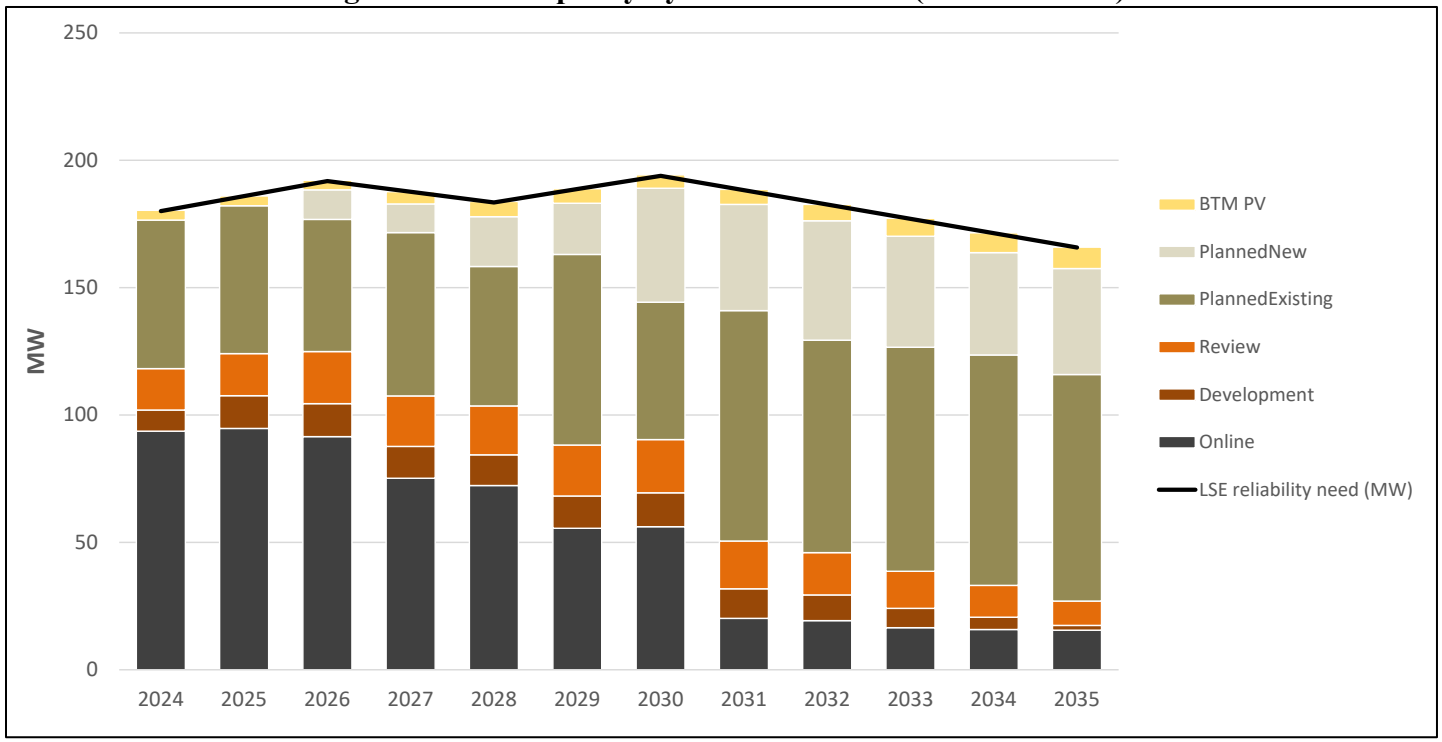
LCE 25 MMT PCP

The effective capacity of LCE'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 11: System Reliability Progress Tracking, September, 25 MMT PCP

Load and Resource Table by Contract Status													
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
LSE reliability need (MW)		**180**	**186**	**192**	**188**	**183**	**189**	**194**	**188**	**183**	**177**	**171**	**166**
ELCC by contract status (effective MW)													
Online		94	95	91	75	72	56	56	20	19	16	16	15
Development		8	13	13	13	12	13	13	12	10	8	5	2
Review		16	17	20	20	19	20	21	19	17	15	12	10
PlannedExisting		58	58	52	64	55	75	54	90	83	88	90	89
PlannedNew		-	-	12	11	20	20	45	42	47	44	40	42
BTM PV		4	4	4	5	6	6	5	6	6	7	8	8
LSE total supply (effective MW)		**180**	**186**	**192**	**188**	**184**	**189**	**194**	**189**	**183**	**177**	**171**	**166**
Net capacity position (+ve = excess, -ve = shortfall) (effective MW)		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Figure 4: LSE Capacity by Contract Status (25 MMT PCP)



As demonstrated in this Table, LCE's 25 MMT PCP contributes 158 MW of peak monthly NQC in 2035. Combined with LCE's allocation of 8 MW of behind-the-meter PV, this makes for an LSE total supply of 166 MW. As shown in the table above, this NQC meets LCE's reliability need. Of this total, 59 MW are related to new renewable and hybrid resources as well as new short- and long-duration storage resources. LCE's 25 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 99 MW of NQC. This balanced portfolio of flexible capacity works to effectively and reliably integrate a renewables-heavy portfolio, thus exceeding LCE'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 LCE, this translates into an additional 3 MW of peak demand and 23 GWh of additional load. By 2035 the impacts are higher. Peak load is now 5.8% or 13 MW higher, and load is 14.4% or 92 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, LCE expects it will have time to see how the high electrification situation impacts load before deciding on any additional procurement. LCE 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, LCE 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 LCE's projected portfolio make offshore wind the best choice for LCE.

LCE has already included 19 MW of Diablo Canyon Offshore Wind in its portfolios. For any additional offshore wind LCE would look to source from a different location in order to ensure additional diversity in its portfolio. LCE 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, LCE would consider an alternative location at Morro Bay.

Table 12: High Electrification Planning by 2035

Resource Type	MWs	Annual GWh	2035 GHG Target	Transmission Zone	Substation/ Bus	Alternative Location	Note
Humboldt Bay Offshore Wind	31	108	Both			Diablo Canyon	

h. Existing Resource Planning

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

LCE's PCP shows declining use of existing resources as LCE plans to work with developers to add new renewable generation to the LCE power mix. As demonstrated in LCE's PCP, LCE will drive significant new resource development, which will have a corresponding decrease in LCE's planned use of existing resources. About 48% of LCE's planned renewable energy purchases for this IRP planning horizon are from yet-to-be built projects. Existing resources that LCE plans to utilize are generally resources that have been available and successfully contract with in the past. Some of these contracts are for multi-year terms, which provides assurance that such resources will remain available. LCE has chosen these resources because of their lower delivery risks compared to new resources. However, LCE recognizes that there is a risk that some existing resources planned for use may not be available to meet LCE's plans. LCE's portfolios attempt to balance out these competing risks, and, as LCE will adapt its plans should energy market conditions change.

i. Hydro Generation Risk Management

In developing its portfolios, LCE took several steps to manage the risk of reduced hydro availability that may result from future in-state drought. First, LCE 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 LCE. LCE's PCP includes hydroelectric resources located within California as well as imported hydroelectric power from the Pacific Northwest. Second, LCE will prioritize hydroelectric contracts with marketers that provide firm delivery volumes, helping to reduce the planning uncertainty associated with drought and variable hydroelectric conditions within California. For its 25 MMT PCP, LCE increased its planned use of hydroelectricity, which could be at risk under certain drought conditions. However, under both portfolios, due to LCE's relatively small hydroelectric needs, LCE 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 LCE is unsuccessful in filling related shortfalls through short-term contracting opportunities, LCE would plan to substitute with renewable energy resources to ensure it meets its assigned GHG benchmark.

Table 13: Comparison of Proportional Hydrogeneration to PCPs

Hydro Resource	30 and 25 MMT PSP MW	LCE Proportionate Share	LCE 30 MMT PCP	LCE 25 MMT PCP
CAISO	7,072.77	27.03	15	16
Imports	2,851.77	10.9	15	19

j. Long-Duration Storage Planning

The Commission's PSP included 1,000 MW of new long-duration storage to be operational by 2028. LCE has begun discussions with various suppliers for capacity to meet its D.21-06-035 long-duration storage requirement of 6.4 MW. These discussions are still in the initial stages, but LCE is confident that it will be able to procure long-duration storage with a commercial online date on or before 2028.

In its PCPs, LCE has planned for 3.31 MW of long-duration batteries in order to achieve its D.21-06-035 long duration storage requirement of 3 MW by 2026. LCE plans to procure a total of 33 MW long-duration storage by 2035, exceeding the current requirement in the interest of adding dependable, clean capacity and renewable resource integration capability. LCE'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, but LCE believes that technological advancement and scale manufacturing will eventually provide opportunities for greater use of long-duration storage. As additional technologies are market-proven and more developers offer long-duration storage, LCE will consider further procurement of these resources. LCE 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 LCE's proportional share is 1.5 MW. LCE currently plans to procure 3.12 MW of new geothermal power to meet its D.21-06-035 requirements. By 2035, LCE expects 12 MW of new, clean, firm geothermal generation in its portfolio. Unfortunately, supply of geothermal, and clean firm resources generally, is very limited in California, and the cost of new-build resources is high. Clean firm energy imported from other balancing areas is complicated by transmission availability and the need to obtain equivalent Maximum Import Capability ("MIC") through the CAISO in order to utilize the capacity under the resource adequacy program. Despite these challenges to their expanded use, clean firm resources are important contributors to reliability and offer operational attributes that cannot be replicated by current-technology storage or other resource types.

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. LCE's proportional share of this would be approximately 18 MW, and LCE's PCPs include 10 MW of OOS Wind.

LCE understands that the transmission projects needed to connect OOS Wind to the CAISO grid require significant lead-times; however, LCE 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, LCE 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. LCE's proportional share of this would be approximately 18 MW, and LCE's PCPs include 19 MW of Offshore Wind. Since California has little experience with offshore wind development, LCE 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 Morro Bay). 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, LCE has planned conservative offshore wind procurement in both of its portfolios.

n. Transmission Planning

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

- LCE has a general preference for resources located within its service area and the community it serves, but more generally, within Southern California.
- LCE prefers projects located in areas that can utilize existing transmission infrastructure with minimal upgrade/modification costs.
- LCE 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, LCE is not a transmission and distribution ("T&D") system operator. LCE does not enjoy the benefits of a granular knowledge of Southern California Edison Company's ("SCE") T&D system or the CAISO grid, and LCE 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, LCE relies on project developers to conduct the research and technical studies necessary for siting potential generation projects. LCE 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, LCE 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 LCE's future solicitation processes. LCE 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 LCE 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, LCE 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, LCE will remain flexible with respect to identifying specific resources for its supply portfolio. If LCE'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 LCE would ultimately locate and contract for alternative resources that fall in preferred locations. LCE also remains open to attractive project opportunities, even if those locations differ from the assumptions used in this plan.

Most of the resources in the LCE's PCPs are not expected to require transmission upgrades beyond the standard interconnection process. Those resources in LCE's PCP that might require substantial transmission upgrades or new transmission lines are generally planned for much later in the plans and LCE expects that the developers will have determined that the transmission will be available before LCE enters into agreements with them. These resources in the LCE 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 LCE has considered transmission and chosen projects for which any transmission concerns should be minimized or already addressed. LCE's choice of New Mexico Wind was made because of the existing plans for transmission to bring that energy to California; LCE's choice of Morro Bay based on the extensive potential identified for this resource area in the PSP.

IV. Action Plan

a. Proposed Procurement Activities and Potential Barriers

LCE 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). LCE'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 LCE'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 LCE 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 LCE.

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

LCE has met its D.19-11-016 procurement requirements. For tranches 1 and 2, LCE met its requirements with the following resources: Calpine Sutter, Tehachapi Wind, Duran Mesa, and a portion of a new demand response resource. The demand response resource will also meet LCE's Tranche 3 requirement (August 2023). At this time, LCE does not expect there to be any barriers to meeting these requirements.

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

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

LCE's required portion of firm zero-emitting resources under D.21-06-035 are 3 MW. To meet this requirement, LCE will be utilizing a new geothermal resource located in Oregon that is under contract and in development.

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

LCE's required portion of long-duration storage resources under D.21-06-035 are 3 MW. LCE has not yet contracted with a resource to meet this need and is currently considering available options to fill this requirement. At this point, LCE expects that battery storage will supply this need, and LCE is working with potential counterparties on contractual terms to ensure eligibility. LCE 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

LCE's required portion of zero-emissions generation, generation paired with storage, or demand response resources are 8 MW. LCE will these requirements with Demand Response and Wind resources. LCE will meet these requirements with a demand response contract that is currently under negotiation and a planned solar facility paired with battery storage. While a specific project for the latter has not yet been identified, LCE is actively pursuing opportunities and hopes to finalize a contract in the next few months.

d. All other procurement requirements

LCE's overall D.21-06-035 requirements, excluding the previously discussed sub-category requirements, are 22 MW. LCE plans to meet these needs with a variety of resources including: a new wind project located in New Mexico that is already under contract and delivering energy; a new demand response resource already under contract; two new 4-hour duration battery storage contracts that are under contract and in development; and a new 4-hour duration battery storage contract that is in the final stages of negotiation.

iii. Offshore wind

As mentioned previously in this document, LCE is planning on procuring 19 MW of offshore wind, and potentially another 31 MW of offshore wind if the needs described in the High Electrification case materialize. LCE 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. LCE 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 LCE to adjust its portfolios and contract with other appropriate resources.

iv. Out-of-state wind

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

v. Other renewable energy not described above

As previously mentioned, LCE's PCPs are not set in stone. LCE continually monitors the renewable energy space through RFOs and discussions with developers, as well as monitoring various news reports, and regulatory proceedings, LCE is ready to modify its expected portfolio if new resources or specific opportunities arise. LCE 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

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

LCE has already contracted for a modest amount of demand response resources. LCE 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

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

ix. Other distributed generation not described above

LCE 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)

LCE 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)

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

xii. Other

LCE continuously explores new methods of lowering electricity demand and increasing clean energy supply. For example, LCE is exploring a potential microgrid project to deploy solar and storage system to LCE critical facilities. This program is modeled after microgrid project recently completed in Ontario. Other potential projects include affordable housing microgrid installations.

b. Disadvantaged Communities

LCE 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 LCE's service territory, or beyond – LCE 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, LCE 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, LCE 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, LCE 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 LCE anticipates completing it prior to California's next Integrated Resource Planning process in 2024 – LCE 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, LCE 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 LCE's most recent Updated Draft 2022 Renewables Portfolio Procurement Plan, as recently submitted to the Commission on August 15, 2022. In this document, LCE 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 LCE 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 the Town's resource planning and procurement decisions on sensitive communities. In addition, LCE 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). To the extent that the Town 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 LCE'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), the Town 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, LCE clearly must adapt its portfolio planning targets to ensure that sufficient quantities of clean energy are procured over time. When managing these transitions, LCE 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. LCE looks forward to updating the Commission on the success of these efforts during the next IRP cycle.

c. Commission Direction of Actions

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

For example, the Commission is currently considering a programmatic approach to the IRP, a Slice-of-Day Resource Adequacy Program, and recently implemented the Central Procurement Entity structure. 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

LCE 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. LCE believes that additional improvements in the data templates can be made, and LCE looks forward to further discussions with Energy Division staff in this regard. LCE'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 fantasy that will likely never materialize.
- There is considerable time required/spent to complete necessary templates, and this remains a concern for LCE and other LSEs. While LCE appreciates efforts in recent years to simplify the IRP templates, the narrative template has only become more burdensome. Additionally, LCE requests that Energy Division staff consider whether all requested data is necessary/critically important to the IRP process, and if not, LCE 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. LCE 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, LCE 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.*