**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

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| Order Instituting Rulemaking to Continue Implementation and Administration, and Consider Further Development, of California Renewables Portfolio Standard Program. | ) ) ) ) ) | Rulemaking 24-01-017 |

# FINAL 2024 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN OF LANCASTER CHOICE ENERGY

Trolis Niebla
City Manager
City of Lancaster
44933 Fern Avenue
Lancaster, CA 93534
(661) 723–6010
tniebla@cityoflancasterca.org

Dated: January 23, 2025

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# FINAL 2024 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN OF LANCASTER CHOICE ENERGY

In accordance with the California Public Utilities Commission's ("Commission") May 17, 2024 *Assigned Commissioner and Assigned Administrative Law Judges' Ruling Identifying Issues and Schedule of Review for 2024 Renewables Portfolio Standard Procurement Plans* ("ACR") and the *Decision on 2024 Renewables Portfolio Standard Procurement Plans* ("D.24-12-035"), the City of Lancaster, doing business as Lancaster Choice Energy ("LCE" or "the City"), hereby submits this Final 2024 Renewables Portfolio Standard Procurement Plan ("RPS Procurement Plan"). As directed by the ACR, this RPS Procurement Plan includes responses for the issues expressed in ACR sections 6.1-6.17.

## I. Summary of Major Changes to RPS Plan

This Section describes the most significant changes between LCE's Draft 2023 (which was accepted and deemed as final by Decision 23-12-008) RPS Procurement Plan and its Final 2024 RPS Procurement Plan. A redline of this Final 2024 RPS Plan against LCE's Draft 2024 RPS Plan is included as Appendix A. The table below provides a list of key differences between the 2023 and 2024 RPS Procurement Plans:

| Plan Reference | Plan Section | Summary/Justification of Change |
|---|---|---|
| RPS Procurement Plan: Section II | Executive Summary | Updated to reflect the changes made throughout other sections of this RPS Plan. |

| | | |
|---|---|---|
| RPS Procurement Plan: Section IV | Portfolio Optimization | Updated to describe ongoing RPS planning and procurement efforts impacting portfolio optimization through 2034. Updated to describe procurement undertaken to comply with D.21-06-035 and D.23-02-040, the Mid-Term Procurement Decisions. |
| RPS Procurement Plan: Section IV.B.1 | Long-term Procurement | Updated long-term RPS procurement discussion. |
| RPS Procurement Plan: Section VI | Potential Compliance Delays | Updated narrative to incorporate changing renewable energy procurement marketplace. |
| RPS Procurement Plan: Section VII | Risk Assessment | Updated risk assessment and related narrative to address extended planning period (through 2034) and outstanding RPS deliveries between 2024 and 2034 |
| RPS Procurement Plan: Section VIII | Renewable Net Short Calculation | Updated Appendix C to reflect recent procurement efforts and prescribed changes to the planning period, which now extends through 2034. |
| RPS Procurement Plan: Section XIV | Cost Quantification | Updated Appendix E to reflect recent procurement efforts and prescribed changes to the planning period, which now extends through 2034. |

**II. Executive Summary Key Issues**

LCE is a CCA organization serving residential and business customers located within the City of Lancaster. LCE initiated customer service in May 2015 and currently serves approximately 73,000 retail electric accounts, which are expected to consume about 620 gigawatt hours per year. To streamline CCA program administration and create procedural efficiencies through jointly administered planning and procurement functions, LCE continues to engage CalChoice for requisite planning and procurement support. This is particularly helpful when addressing the requirements of California's RPS compliance program. To facilitate the achievement of applicable mandates, LCE regularly participates in jointly administered

solicitations for long-term RPS-eligible renewable energy supply and other products, as administered by CalChoice.

The City, through its relationship with CalChoice, participated in a solicitation for long-term RPS supply and incremental resource adequacy capacity (to fulfill certain portions of its assigned mid-term reliability and supplemental mid-term reliability purchase obligations). This solicitation, which was issued in cooperation with Clean Energy Alliance ("CEA"), was distributed on January 17, 2024 with responses due February 21, 2024. After evaluating numerous responses, CalChoice and CEA identified two well-suited long-term renewable energy supply opportunities, one of which will also support compliance with LCE's incremental capacity procurement obligations. Both suppliers will be entering into exclusive negotiating agreements with CalChoice and CEA. During the 90-day period established by these agreements, CalChoice, CEA and these suppliers will be working to develop, approve and execute agreements that will augment LCE's long-term renewable energy supply in 2026 and beyond.

Irrespective of the outcomes related to these negotiating efforts, the City's current contractual commitments are expected to address the CCA's long-term RPS needs through Compliance Period 6. In addition to these long-term supply agreements, LCE has also executed numerous short-term RPS supply commitments to address ongoing RPS compliance mandates and related planning reserves. LCE has also entered into certain surplus RPS sales agreements to balance procured volumes with procurement targets of the CCA program – it is important to note that certain RPS sales agreements reflect "seller's option" volumetric ranges, which allow LCE to sell zero volume, some volume or the maximum sales volume reflected in such agreements; this flexibility allows LCE to more closely balance RPS supply with actual portfolio needs. The

results of these sales are reflected in LCE's Renewable Net Short template, Appendix C. LCE anticipates participating in various other solicitation efforts (administered by CalChoice and, possibly, the IOUs). These procurement processes are expected to address LCE's remaining RPS open positions (both short- and long-term, as appropriate) and the increasing renewable procurement targets reflected in California's RPS Program. LCE's RPS open positions will be periodically evaluated – such evaluations will generally occur: 1) prior to solicitation administration (for purposes of quantifying renewable energy volumes to be addressed in the upcoming solicitation); 2) after bid receipt (to determine potential impacts to LCE's RPS open position); 3) after execution of any RPS contract (to quantify expected reductions to LCE's open position associated with successful procurement activities); 4) throughout each operating year as the relationship between actual and expected renewable energy deliveries is periodically monitored relative to retail electricity sales (to determine if additional procurement or surplus sales may be necessary to promote portfolio balance); and 5) following any updates to LCE's quantitative risk analysis, as further described in Section VII. This process will remain ongoing and will be utilized to guide LCE participation in future renewable energy procurement processes. Based on the results of this ongoing exercise, LCE may evaluate the need to adjust renewable energy planning reserves, the manner in which project development and performance risk will be assessed during LCE's ongoing renewable energy procurement efforts, and various other considerations related to the RPS Program as further described in this RPS Procurement Plan.

Since joining CalChoice, LCE has increased its access to support resources, analytical insight and operational expertise as well as increased coordination with a community of member organizations, which are able to create efficiencies through the administration of joint

procurement processes and other inter-agency coordination. Going forward, joint procurement efforts, including participation in various CalChoice renewable energy RFPs, will enhance LCE's ability to efficiently and cost effectively identify and procure necessary renewable energy supply. LCE also believes that joint procurement activity will provide access to larger, lower-priced procurement opportunities that would otherwise be unavailable to its individual CCA Program (due to sizing limitations), resulting in reduced overall renewable energy costs for its customers as well as general improvements in procedural efficiency.

Considering the success of its ongoing renewable energy procurement efforts, the City is confident in its ability to identify sufficient levels of renewable energy supply and will work diligently to secure such supply during ongoing operations. Expected VAMO deliveries from SCE have solidified LCE's achievement of applicable long-term RPS contracting mandates through Compliance Period 6. The City does not take for granted that proposed RPS procurement/project opportunities will result in finalized/executed contractual commitments. With this in mind, LCE is prepared to exhibit flexibility in administering future RPS solicitations and will continue to engage the market until contractual commitments closely align with or exceed anticipated resource needs.

**III. Compliance with Recent Legislation and Impact of Regulatory Changes**

This RPS Procurement Plan addresses the requirements of all relevant legislation and the Commission's regulatory framework. This Section describes the relevant statutory and regulatory requirements and how this RPS Procurement Plan demonstrates that LCE meets these requirements.

Senate Bill ("SB") 100 was signed by the Governor on September 10, 2018 and became effective on January 1, 2019. SB 100 increased the RPS procurement requirements to 44 percent

by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. On June 6, 2018, the Commission issued D.18-05-026, which implemented changes made by SB 350 (2015) to the RPS waiver process and reaffirmed the existing RPS penalty scheme. In July of 2018, the Commission instituted Rulemaking 18-07-003 to continue the implementation of the RPS. On June 28, 2019, the Commission issued D.19-06-023, which continues to use a straight-line method to calculate compliance period procurement quantity requirements.

The current RPS procurement targets are incorporated into LCE's Renewable Net Short Calculation Table as described in Section VIII below and attached as Appendix C. LCE's current and planned procurement, as reflected in LCE's Renewable Net Short Calculation Table and described in Sections IV and V, is expected to be sufficient to exceed these targets, including a minimum margin of over-procurement based on LCE's quantitative risk assessment, as further described in Sections VII and IX. LCE is also positioned to meet the SB 350 long-term procurement requirement, as described in Sections V and VII.

SB 901, signed by Governor Brown on September 21, 2018, added Public Utilities Code section 8388, which requires any IOU, publicly owned electric utility, or CCA with a biomass contract meeting certain requirements to seek to amend the contract to extend the expiration date to be five years later than the expiration date that was operative as of 2018. LCE does not have a contract with a biomass facility that is covered by Public Utilities Code section 8388.

SB 255 (stats. 2020, ch. 407) amended Public Utilities Code section 366.2 to require certain CCAs to annually submit to the Commission the following: (i) a plan for "increasing procurement from small, local, and diverse business enterprises in all categories, including, but not limited to, renewable energy, energy storage system, and smart grid projects," and (ii) a report regarding the CCA's "procurement from women, minority, disabled veteran, and LGBT

business enterprises in all categories, including, but not limited to, renewable energy, energy storage system, and smart grid projects." CalChoice submitted the *Supplier Diversity 2023 Annual Report and 2024 Annual Plan* on behalf of its members, including the City, in compliance with SB 255 and General Order 156.[1]

Assembly Bill ("AB") 843, signed by the Governor on September 23, 2021, authorizes CCAs to participate in the Bioenergy Market Adjusting Tariff ("BioMAT") program if capacity is available under the program cap. The City does not have any immediate plans to participate in the BioMAT program but may reevaluate this decision as part of its future planning for additional renewable procurement, which may also focus on locally-situated biomass and/or biofuel resources outside of the BioMAT program.

SB 1020, referred to as "Clean Energy, Jobs, and Affordability Action of 2022," sets a statewide goal of one hundred percent zero-carbon electricity by 2045. SB 1020 also directed every state agency to ensure that zero carbon resources and eligible renewable energy resources supply one hundred percent of the electricity procured on its behalf by 2035. These state agencies are specifically directed to meet this 2035 target through any or all of the following options: (i) installing behind the meter resources, (ii) procuring zero-carbon or eligible renewable energy resources through the POU, IOU, CCA, or ESP that is providing retail service to that state agency, or (iii) participating in a qualifying voluntary shared renewable or green pricing program. Based on anticipated service delivery to state agency accounts located within the City, CalChoice and the City are in the early stages of assessing annual energy loads (to determine

[1] *See* CalChoice *Supplier Diversity 2023 Annual Report and 2024 Annual Plan*, March 1, 2024, available at: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/bco/cca-procurement-reports/2022/calchoice-supplier-diversity-2022-report-and-2023-plan.pdf?sc_lang=en&hash=7A7C416435B3E04B343D7A5A11F6EF70https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/bco/cca-procurement-reports/2023/calchoice-supplier-diversity-2023-report-and-2024-plan_final-1.pdf.

potential, incremental procurement impacts) and coordinating with those customers to determine how such state agencies plan to meet SB 1020 obligations. To the extent that CalChoice receives feedback during such coordinative efforts, it will provide a more detailed update on the impacts of SB 1020 to its RPS procurement planning efforts in a subsequent RPS Procurement Plan. LCE may also consider enhancements to its 100% renewable service offering to provide portfolio characteristics that will enable state agency accounts to meet the requirements of SB 1020. Such changes would likely follow coordination with any state agencies served by the City.

## IV. Assessment of RPS Portfolio Supplies and Demand

### IV.A. Portfolio Supply and Demand

As previously noted, LCE is California's third operating CCA program, which began serving customers in May 2015. LCE currently provides retail electric generation service to approximately 73,000 customer accounts, which are expected to consume about 620 gigawatt hours per year. LCE has now entered into several power purchase agreements (both short- and long-term) with various suppliers, certain of which have contributed to LCE's RPS compliance during early-stage CCA operation as well as in the near-term planning horizon. Over the mid- and longer-term planning horizons, LCE expects that the contract stemming from CalChoice's previously administered long-term renewable energy solicitations will contribute to LCE meeting pertinent RPS compliance obligations during Compliance Periods 4, 5 and 6 (and beyond). LCE also expects that further solicitations will be necessary over time, as additional supply commitments will be required to fulfill the City's growing renewable energy requirements that are expected to increase in concert with California's escalating RPS mandate. The exact portfolio characteristics selected may vary depending on direction received from the City's Governing Council, advice provided by CalChoice, renewable resource availability, procurement

costs, legislative and policy changes, technological improvements, preferences of the City, or other developments, such as the procurement ordered in Mid-Term Reliability decision, D.21-06-035 and, later, D.23-02-040. The City's RPS supply portfolio is expected to become increasingly diverse in the future as the City continues to pursue additional RPS supply agreements and awaits deliveries from its new geothermal facility, which is expected to commence operations in mid-2026. LCE examines and estimates supply and customer demand and will structure its future procurement efforts to balance customer demand with requisite resource commitments. This examination of customer demand and other market developments will help reduce costs and assist in meeting planned procurement for the period addressed in this RPS Procurement Plan.

LCE continues to monitor regulatory proceedings related to direct access and will evaluate the impacts of any developments that may result in future adjustments to LCE's load forecast and related renewable energy procurement obligations, which would be expected to decrease if LCE loads migrate to direct access providers – in theory, such a change would push LCE's renewable energy content higher unless surplus supply was sold to other market participants; this would be similar to the impacts experienced by California's IOUs as a result of ongoing CCA implementations and expansions. To the extent that any adjustments to the City's retail sales forecast are made, it will reflect such adjustments in a subsequent RPS Procurement Plan. Through the ongoing evaluation of customer demand and other market developments, LCE hopes to influence reduced overall costs while meeting planned procurement objectives for the period addressed in this RPS Procurement Plan.

### IV.A.1. Portfolio Optimization

The City's goal is to meet its locally adopted policies and statewide mandates in a manner that is both cost effective and that supports a well-balanced resource portfolio. Portfolio optimization strategies can help reduce costs and should facilitate alignment of the City's portfolio of resources with its forecasted load needs. In order to support this goal, the City regularly considers the following strategies:

**Joint Solicitations:** Joint solicitations can expand the procurement opportunities available to a CCA and may provide better contract terms. The City participated in the CalChoice, Desert Community Energy Authority and Clean Energy Alliance solicitation for Mid-Term Reliability (MTR) resources and long-term renewable energy supply as well as the March 2023 solicitation administered by CalChoice to address additional long-term RPS supply and incremental capacity. The City is also participating in CalChoice's January 2024 solicitation (focused on long-term renewable energy and incremental capacity products) – this multi-participant process has transitioned to contract negotiations with two prospective suppliers. Going forward, the City intends to continue participating in such joint solicitation activities as part of the shared services arrangement that it has in place with CalChoice. LCE is also evaluating and participating in joint solicitations through CalChoice with other CCAs.

**Purchases from Retail Sellers:** Purchases of RPS-eligible renewable energy (via resale) from other retail sellers can provide a cost-effective way of meeting short term resource needs or filling in gaps in procurement while long term projects are under development. The City will evaluate solicitations offered by other retail sellers on-case by-case bases.

**Sales Solicitations:** As the City's portfolio of resources continues to develop, it will also consider offering solicitations of sales to other retail sellers, if the disposition of surplus is deemed desirable or necessary to balance larger than anticipated reserve positions that may be accrued during each compliance period.

**Optimizing Existing Procurement:** As the City considers its long-term resource needs beyond 2030, it may evaluate options in its future power purchase agreements to increase the output of existing generating facilities through technological upgrades or by adding new capacity to an existing generator. Expanding existing facilities may provide additional generation at reduced costs with a lower risks of project failure because the need for distribution system upgrades and permitting may be reduced – such opportunities may be developed, as deemed appropriate by the City.

On June 24, 2021, the Commission adopted D.21-06-035, which directed all retail sellers to procure 11,500 MW of new net qualifying capacity ("NQC") between 2023 and 2025, and requiring the procurement of long-lead-time ("LLT") resources by 2026. Each retail seller was assigned a specific procurement responsibility based on its share of peak demand. The City's total obligation is 37 MW, which must include minimum amounts of procurement from certain subcategories: (1) 8 MW from firm, zero-emitting capacity by 2025; (2) 3 MW from long duration storage resources by 2026; and (3) 3 MW from firm, non-fossil fueled baseload generating resources by 2026. On February 23, 2023, the Commission adopted D.23-02-040, which directs load serving entities to procure 2,000 MW of additional new NQC in both 2026 and 2027 and extends the deadline for LLT resources from 2026 to 2028. Similar to D.21-06-035, each load serving entity's portion of this total supplemental capacity procurement obligation is allocated based on load share. The City's supplemental capacity procurement obligation, as directed in D.23-02-040 is 13 MW, comprised of 7 MW that must be online in 2026; another 7 MW must be online in 2027.

LCE already entered into various supply agreements that will address portions of its noted incremental capacity procurement obligations and is currently finalizing a term sheet with a supplier that is expected to develop a new solar-plus-battery storage project that will further the City's progress in meeting these procurement obligations. Certain portions of this procurement requirement were also addressed through the request for proposals conducted jointly by CalChoice, Desert Community Energy Authority, and Clean Energy Alliance, described elsewhere in this RPS Procurement Plan, which resulted in the execution of a supply agreement that will meet portions of its incremental capacity procurement obligations as well as additional RPS supply. As described above, the City also participated in CalChoice's March 2023

solicitation for long-term RPS supply and incremental capacity. Two projects were shortlisted, but CalChoice was unable to reach agreement on pertinent commercial terms, so discussions were discontinued. If the City does meet additional incremental capacity procurement obligations with renewable generation, then that generation would augment the planning and forecasting described in this RPS Procurement Plan. The City will try to optimize its RPS procurement with the requirements from D.21-06-035 and D.23-02-040 and hopes to harmonize these procurements to reduce costs, improve resource dispatchability (to better align renewable resource delivery profiles to the City's load profile) and avoid any need to over-procure resources.

### IV.B. Responsive to Local and Regional Policies

(i) Responsiveness to Policies of LCE's City Council

LCE is a local governmental agency that is subject to the control of the City's Governing Council and is directly accountable to the community that it serves. LCE generally supports and is committed to meeting the state's GHG reduction and renewable procurement goals. Furthermore, and as noted elsewhere in this RPS Procurement Plan, the City has adopted near-term renewable portfolio targets that closely align with RPS mandates. As a result, the City's supply portfolio will be structured to achieve and sustain RPS compliance at the lowest possible cost (which is a key objective of the City's CCA program).

(ii) Responsiveness to Regional Policies

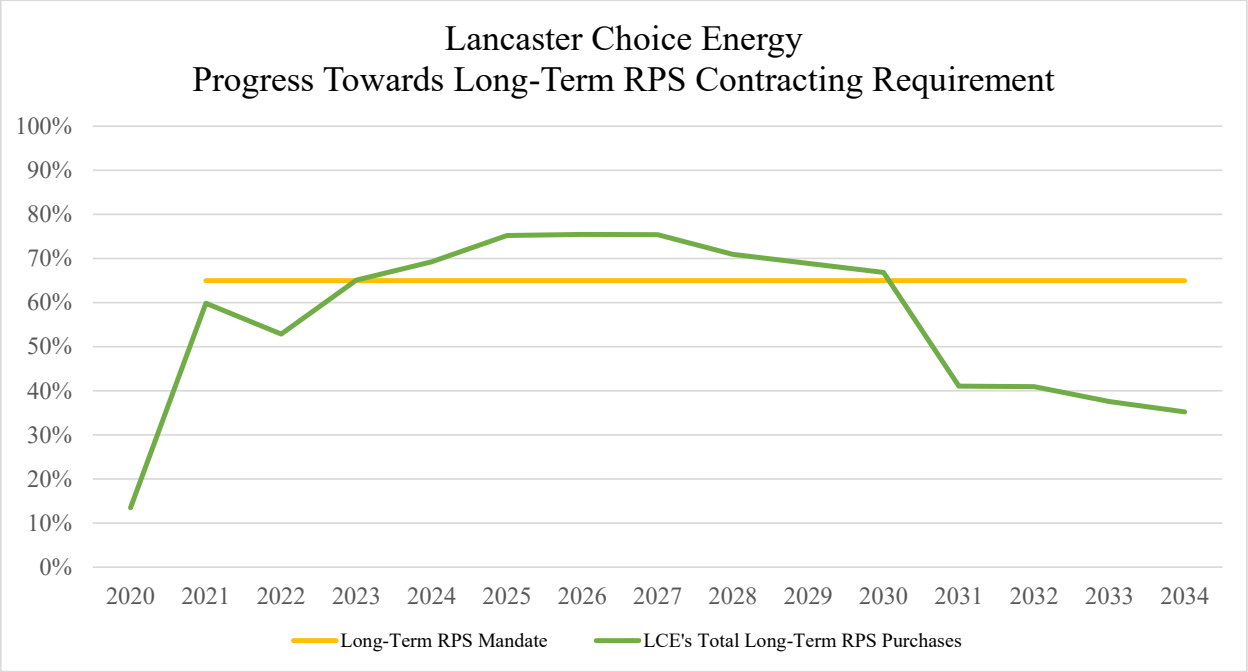
As noted in the previous sub-section, the City is overseen by its governing council, which also serves as the governing board/authority for its CCA program. As such, the policies adopted by the City's governing council (related to CCA operations) serve as guiding directives for CCA

operations, including the determination of renewable energy planning targets that are intended to support local policy preferences.

### IV.B.1. Long-term Procurement

Pursuant to Public Utilities Code section 399.13(b), from 2021 onwards, 65 percent of mandated renewable energy purchases must be sourced from contracts of 10 years or more. The City has been conscientiously planning and procuring to meet this requirement and is making good progress in this regard. Based on existing procurement efforts, the City believes it has already purchased sufficient long-term supply to ensure that it stays at or above the 65% long-term procurement mandate through Compliance Period 6.

The following chart reflects the City's current and anticipated progress in meeting California's long-term RPS contracting mandate in Compliance Period 4 and beyond.




The City is also providing the following tabular breakout focused on expected long-term RPS compliance to facilitate the Commission's review of information reflected in the chart above.

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Projected Retail Sales (MWh)** | 615,369 | 616,864 | 596,907 | 599,891 | 602,891 | 605,905 | 608,935 | 611,979 | 615,039 | 618,114 | 621,205 | 624,311 | 627,432 | 627,432 |
| **Total RPS Procurement Requirement (% of Retail Sales)** | 36% | 39% | 41% | 44% | 47% | 49% | 52% | 55% | 57% | 60% | 60% | 60% | 60% | 60% |
| **Total RPS Procurement Requirement (MWh)** | 219,995 | 237,492 | 246,224 | 263,952 | 281,369 | 298,893 | 316,646 | 334,569 | 352,602 | 370,869 | 372,723 | 374,587 | 376,459 | 376,459 |
| **Long-Term Contracting Mandate (%)** | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% |
| **Long-Term Contracting Mandate (MWh)** | 142,996 | 154,370 | 160,046 | 171,569 | 182,890 | 194,280 | 205,820 | 217,470 | 229,191 | 241,065 | 242,270 | 243,481 | 244,699 | 244,699 |
| **Long-Term PCC1 Deliveries (Expected, per Contract)** | 131,718 | 110,303 | 215,997 | 212,427 | 211,657 | 226,170 | 238,767 | 237,452 | 235,810 | 234,296 | 153,135 | 152,768 | 116,440 | 105,931 |
| **Net Position (negative = short)** | (11,278) | (44,067) | 55,951 | 40,858 | 28,767 | 31,890 | 32,947 | 19,982 | 6,618 | (6,768) | (89,135) | (90,713) | (128,259) | (138,768) |
| **Net Position by Compliance Period (negative = short)** | | | | 41,464 | | | 93,604 | | | 19,832 | | | (308,107) | |
| **Long-Term RPS Coverage Ratio (%, relative to 65% mandate)** | | | | 107% | | | 116% | | | 103% | | | 58% | |

As reflected in the previous chart, the City expects to exceed applicable long-term RPS procurement mandates through Compliance Period 6. More specifically, for Compliance Period 4, the City expects to procure 107% of its required long-term RPS mandate (which means that the City expects to procure 69% of total statutorily mandated RPS purchases from long-term contracts), based on expected long-term RPS deliveries of 670 GWh, relative to a projected long-term procurement obligation of 629 GWh. Similarly, in Compliance Period 5, which includes calendar years 2025 through 2027, the City expects to procure 116% of its required long-term RPS mandate (which means the City expects to procure 75% of total statutorily mandated RPS purchases from long-term contracts), based on expected long-term RPS deliveries of 677 GWh, relative to a projected long-term procurement obligation of 583 GWh. In Compliance Period 6, which includes calendar years 2028 through 2030, the City expects to procure 103% of its required long-term RPS mandate (which means the City again expects to procure 67% of total statutorily mandated RPS purchases from long-term contracts), based on expected long-term RPS deliveries of 708 GWh, relative to a projected long-term procurement obligation of 688 GWh. These projections are based on estimated annual deliveries to be received under the City's current long-term RPS supply agreements, including its long-term VAMO supply agreement with SCE.

Based on expected long-term RPS deliveries, as well as its early-stage negotiations with two additional suppliers of long-term PCC1 supply, the City believes it will be able to successfully achieve compliance with long-term RPS procurement mandates through 2030 under

a variety of adverse scenarios in which delivery shortfalls could occur. This noted, the City expects to strategically pursue additional long-term RPS supply, via solicitations administered by CalChoice and bilateral contracting discussions, to increase long-term planning reserves, promoting increased compliance certainty in advance of future operating periods.

LCE understands that the pursuit of other long-term RPS opportunities will be somewhat iterative and may be based on the success of existing supply commitments, the extent to which additional new-build project opportunities timely achieve commercial operation, potential legislative and regulatory changes, City preferences and various other considerations. In the event that the City enters into other contracts with new-build renewable generating facilities, it will closely monitor project development progress and contract/project performance to ensure that actual long-term deliveries meet or exceed pertinent requirements. Any future long-term contracting efforts will be described in subsequent RPS Procurement Plans.

### IV.C. Portfolio Diversity and Reliability

LCE has considered and will continue to consider the deliverability characteristics of its future generating resources placed under contract (such as the resource's dispatchability, available capacity, and typical production patterns) and will review the respective risks associated with short- and long-term purchases as part of its forecasting and procurement processes. These efforts will lead to a more diverse resource mix, address grid integration issues, and provide value to the local community. A quantitative description of this forecast is attached to this RPS Procurement Plan in Appendix C.

While the City is not opposed to considering emerging renewable generating technologies, it is unlikely that upcoming supply agreement(s) will focus on such resources – the City has yet to receive credible and cost-competitive proposals from emerging renewable

generating technologies, but if such proposals arrive in the future, they will be closely considered alongside other viable options. Based on the City's renewable energy planning goals, its renewable supply commitments must result in reliable, cost-effective supply to promote compliance with applicable RPS mandates without bearing the risks typically associated with newer technologies. Until compelling proposals for emerging renewable generating technologies are received, the City will likely exhibit preferences for "tried and true" generating technologies that will minimize delivery risk during ongoing operation while allowing for re-shaping of certain renewable generating profiles to better align supply with demand. The City will procure renewable and other energy products, as necessary, to ensure that the future energy needs of its customers are met in a manner that promotes reliability and cost-effectiveness, consistent with applicable compliance mandates and general objectives of the CCA Program. The City has established procurement targets for requisite renewable energy supply, including subcategories for various renewable energy products, and has also established targets for related planning reserves as described elsewhere in this document. Presently, the City's internally established renewable energy procurement target generally mirrors California's RPS mandate. To the extent that the City's energy needs are not fulfilled through the use of renewable generating resources, it should be assumed that such supply will be sourced from conventional energy resources, such as natural gas generating technologies or system power purchases, as well as any clean energy resources that may be necessary to further progress in meeting California's greenhouse gas emission reduction goals.

LCE currently utilizes a portfolio risk management approach as part of the power purchasing program that is administered by CalChoice on its behalf, seeking low-cost supply (based on prevailing market conditions at the time of solicitation administration) as well as

diversity amongst technologies, production profiles, project sizes and locations, counterparties, lengths of contract, and timing of market purchases. It is reasonable to assume that LCE's supply portfolio will increase in complexity over time, utilizing an increasing number of supply contracts and related supplier relationships by emphasizing the principles of resource and counterparty diversity.

A key component of LCE's planning process relates to the analysis and consideration of expected load obligations with the objective of closely balancing supply/demand, cost/rate stability and overall budgetary impacts. Similar to the experiences of most CCAs, the City learned that historical data was not a perfect predictor of future customer energy requirements, so LCE and CalChoice actively monitor actual customer usage, relative to projections, refining such forecasts as well as the ability to minimize variances between procured energy quantities and actual usage – while this process may not eliminate such variances, it should significantly reduce them, minimizing exposure of the CCA Program and its customers to unexpected cost spikes that may occur within California's power market. The City is committed to developing an accurate understanding of the manner in which its customers use electric power to promote an efficient and cost-effective procurement process.

The City forecasts its future load growth by applying a fixed annual increase of approximately 0.76% in retail sales as compared to the prior year. This forecast value was derived based on the CEC 2023 Integrated Energy Policy Report ("IEPR") demand forecast for the CEE service area.[2]. The load forecast reflects assumed increases in customer energy usage due to transportation electrification consistent with the CEC IEPR forecast assumptions, and this results in a higher rate of load growth than the 0.5% annual baseline increases historically

[2] Forecast data available at: https://www.energy.ca.gov/data-reports/california-energy-planning-library/forecasts-and-system-planning/demand-side-1.

observed by the City.

because state and local transportation goals are likely to result in significant increases in transportation electrification in the future, the City is evaluating if its load forecasts should be refined based on local electrification changes that are expected to occur. This evaluation considers personal light duty vehicles, electrification of fleets and local targets for electrification of public transit systems. Future forecast adjustment may also include any applicable local policies related to transportation electrification, locally available incentives focused on transportation electrification, and/or data related to electric transportation adoption/conversion occurring within the City.

With regard to the City's anticipated renewable energy requirements, LCE maintains portfolio coverage targets of up to 100 percent in the near-term (0 to 2 years) but leaves larger open positions in the mid- to long-term, consistent with generally accepted industry practices. At this point in time, the City has no explicit preference for specific renewable generating technologies and considers all resource types with the goal of assembling a diversified, cost-effective renewable energy supply portfolio that will deliver energy in a profile that is generally consistent with the anticipated load shape of LCE customers. LCE is also aware that future reliance on intermittent renewable generating technologies has the potential to create occasional misalignments between customer energy consumption and power production as well as variances between the actual and expected quantity of renewable energy received from such projects. In order to better align the quantities of renewable energy with load, and help reduce variances between actual and expected quantities of renewable energy, LCE is considering both stand-alone storage and hybrid or co-located storage and renewable energy projects. LCE has also applied its minimum margin of over procurement for renewable energy (tentatively set at

3.6% of retail sales), which was based on the quantitative risk assessment described below. To the extent that significant, prolonged variances are observed between LCE's actual and expected energy use, staff may propose increased planning reserves (beyond the current 3.6% of retail sales metric reflected herein).

The City is aware that use of energy storage infrastructure in combination with renewable generating assets can mitigate integration impacts typically associated with increased use/development of intermittent renewable generating technologies. The extent to which such configurations will be successful in alleviating conditions of over-supply and misalignments between energy production and customer use will be evaluated during future solicitation processes to ensure that any resultant contractual commitments will promote desired outcomes.

### IV.D. Lessons Learned

In communicating with and reviewing the RPS Procurement Plans of California's most mature CCA organizations as well as considering its own experiences in developing an RPS portfolio, the City observes that geographic diversity remains an important element in selecting renewable energy resources/contracting opportunities. The City observes that certain areas of the state have been overbuilt with renewable generating infrastructure, which has created challenges related to depressed market prices and increasing levels of resource curtailment. The City has kept this observation in mind when assembling its own renewable resource portfolio, avoiding overcommitment to resources within a narrowly defined geographic area. Based on communications with CalChoice and other CCAs, the City also continues to evaluate historical pricing trends, which have materially changed in the wake of increased renewable energy buildout. Due to these transitions and suppressed (and oftentimes

negative) market pricing, the City will likely avoid contracting with generators located in certain areas or require substantial storage capacity (operated in parallel with renewable generating infrastructure) to mitigate market price risk when considering renewable generating resources located in such areas. Based on increased levels of wind and solar curtailment in California, the "traditional" two-to-one ratio of nameplate renewable generating capacity to battery storage may be insufficient to satisfactorily mitigate exposure to market price volatility. In recent solicitations, the City has strongly considered project configurations that have proposed higher nameplate capacity to battery storage ratios (such as a one-to-one ratio) but has found that the relative high costs associated with battery storage capacity serve as a deterrent to this configuration. Nonetheless, the City will continue to evaluate such configurations as the increased dispatch flexibility of a one-to-one project configuration may prove to be a more desirable long-term asset to manage market price risk. The City is also aware of the shift in California's renewable energy market that has occurred over the past 18 to 24 months. Increased supply tightness has contributed to pricing increases approximating 400% in short-term renewable energy markets, which has, in turn, affected credit expectations within certain supplier organizations. In general terms, short-term RPS supply is more difficult to find, is more costly to procure and may, in certain cases, require less favorable payment and/or credit terms during contracting. The City believes that this situation will eventually improve but over the next few years there will likely be increased challenges addressing RPS open positions should such exist. The City appreciates the substantial financial risks that are created by California's long-term renewable contracting requirements and will continue to explore opportunities to manage such risks during its contracting efforts.

## V. Project Development Status Update

As described in Section IV.B above, LCE's current and planned procurement is expected to be sufficient to meet both the applicable RPS procurement requirements and is expected to support the state's GHG reduction targets. Further, LCE's current and planned procurement supports system reliability by considering both portfolio diversity and alignment with LCE customers' load curve. Specifically, LCE's selected projects fit within and support LCE's plans for meeting these goals.

LCE's ongoing contracting efforts have resulted in supply commitments with new/repowered generating assets and related (updated) details are included in the Project Development Status Update Report, Appendix D. At this time, the lone renewable generating resource under contract that has yet to achieve COD is the Cape Generating Station 1 project. This project is expected to achieve commercial operation in mid-2026 and regularly provides project status updates to ensure that the City stays apprised of ongoing development activities; at this time, the project does not anticipate any delays to its expected commercial operation date. In its most recent update, the project developer indicated the following:

<u>Engineering and Procurement</u>

1. Worked towards finalization of ORC generator design and purchase agreement with Turboden
2. Issued POs for transformers with Virginia Transformer Company
3. Executed POs for high voltage breakers with Wholesale Electric Supply Co
4. Seconded Fervo engineer to Burns and McDonnell's Kansas City HQ to support project team
5. Amended the Jacob's Professional Services Agreement to increase Owner's

Engineering scope

Permitting and Land

1. Completed Stormwater Pollution Prevention Plan (SWPPP) for Utah Division of Water Quality
2. Received confirmation well construction approvals from Utah DWRi for next four well pads (Gold, Belknap, Granite, and Signal)
3. Conducted biological species survey for confirmation wells pads (Gold, Belknap Granite, Signal)
1. Received approval from DWRi to expand Bearskin well pad to an 8-well configuration

Drilling and Completions

1. Completed drilling of horizontal Winkler 4-I well, Winkler 3-P well, Bearskin 1-IA
2. Completed temperature well logging on Winkler 4-I
3. Completed drilling of second and third water wells
4. Completed infrastructure and brought first and second water wells online
5. Completed third water storage pit
6. Completed well workover work on Frisco 1-I, 2-P, and 3-I and wireline imaging on Frisco 3-I, in preparation for reservoir stimulation
7. Completed stimulation process of Frisco 1-I, initial data indicates successful connection between Frisco wells

Interconnection

1. Received all engineering assessment information and have progressed to alignment on material terms with private transmission owner for LGIA and TSA.

As the City's contracting efforts continue, any additional information related to the City's future renewable energy contracting process(es) will be included in future iterations of its Project Development Status Update Report (and submitted within a subsequent RPS Procurement Plan).

**VI. Potential Compliance Delays**

LCE does not anticipate any compliance delays for the current compliance period (Compliance Period 4, which includes calendar years 2021-2024). Ongoing contracting processes have resulted in the identification and execution of numerous renewable energy supply commitments, and LCE's attention to annual balancing of requisite renewable energy purchases relative to retail sales is expected to put the CCA program in a position where actual renewable energy deliveries closely align with (but slightly exceed) applicable compliance mandates during the current compliance period. LCE is also making good progress in meeting the state's 65% long-term contracting requirement, having executed numerous long-term supply commitments in the recent past – LCE will continue assessing projected long-term open positions relative to expected deliveries and intends to participate in future CalChoice-administered solicitations, as necessary, to ensure compliance with this element of the RPS Program – based on current long-term commitments, however, the City appears to be well situated to meet related compliance obligations through Compliance Period 6. The City's recent decision to accept certain long-term allocations made available through the VAMO process is expected to solidify the achievement of applicable long-term RPS contracting mandates.

As a small CCA, the City recognizes that its portfolio of resources will be more limited than larger LSEs and that delays in online dates and reduced generation from the RPS contracts may have significant impacts on both its level of RPS and its progress to achieving 65% from long term contracts. The City has discussed this topic with CalChoice, which continues to manage such risk through the screening and evaluative processes associated with its renewable energy solicitations. In particular, a key element of proposal evaluation focuses on the identification and selection of highly experienced and financially viable renewable energy sellers – by pursuing supply commitments from such sellers, the City and CalChoice believe that the substantial majority of future delivery risk is avoided. This will be accomplished by completing a rigorous review of each prospective supplier's development and operational experience, track record of success (in terms of developing and/or operating renewable energy projects), financial standing and credit rating, familiarity with pertinent development milestones as well as the state of completion for such items, customer references and various other considerations. During the completion of this process, the field of respondents will be significantly narrowed, leaving only the best qualified suppliers to undergo further consideration. If a future compliance issue is identified or the City encounters challenges in securing requisite renewable energy supply, then the City will address such issue(s) in a subsequent RPS Procurement Plan.

As the Commission is aware, successful renewable energy markets depend upon international supply chains, substantial labor commitments, robust financial markets, timely interactions with governmental planning authorities and various other considerations. With numerous disruptions caused by the COVID-19 pandemic and various other challenges the City is closely monitoring potential fallout related to supplier/developer effectiveness in fulfilling mandated renewable energy needs, project completion and overall supplier viability. The City is

aware that many supply chains were disrupted during the pandemic (with some slower to recover than others) with a variety of material/component shortages occurring throughout the industry; concerns regarding the application of tariffs on certain imported renewable infrastructure have also provoked certain supplier to request "reopening" of previously executed contracts and/or the negotiation of terms that allow for price adjustments in the event of unexpected costs (such as the noted tariff). While the tariff issue seems to be temporarily resolved, concerns of this nature have introduced a measure of instability in the long-term contracting efforts of many retail sellers. With these concerns in mind, the City encourages the Commission to closely monitor and potentially reconsider certain elements of the RPS Program as this situation evolves, particularly if there are widespread, well-documented challenges as California retail sellers attempt to fulfill pertinent procurement requirements.

## VII. Risk Assessment

### VII.A. Compliance Risk

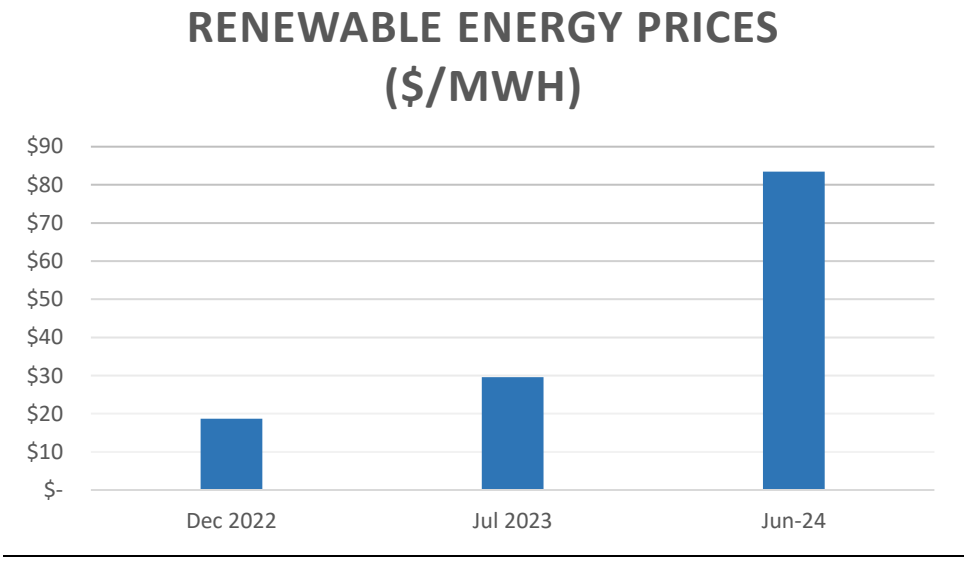
An important element of the City's RPS risk assessment process is determining potential vulnerabilities related to procurement and/or delivery shortfalls that could trigger deficits relative to the City's anticipated compliance obligations. Considering the City's internally adopted renewable energy procurement targets and existing contractual commitments, this risk, as internally determined by the City in consultation with CalChoice, appears to be very low in Compliance Period 4 and beyond. As discussed elsewhere in this planning document, the City has established a MMoP that informs RPS procurement efforts and insures against compliance-related shortfalls. A prior letter from Commission staff supports this assessment. More specifically, this letter, which was sent by the Commission's Deputy Executive Director for Energy and Climate Policy in early December 2022, provided an assessment of the City's

perceived RPS compliance risk for Compliance Period 4 (calendar years 2021 through 2024). According to the letter, the assessment was based on information included in the City's 2021 RPS Compliance Report, as submitted in the summer of 2022. Risk levels were assigned by the Commission and identified as low, medium or high based on reported progress towards applicable RPS procurement mandates. In its letter, the City's risk level was categorized as "low."

Following submittal of its 2021 RPS Compliance Report, the City coordinated with SCE regarding its acceptance of long-term RPS volumes made available under the VAMO process. As indicated (above) in Section IV.A.1. of this plan, the City accepted 50% of its available long-term VAMO allocations, which meaningfully increased its anticipated RPS deliveries in Compliance Period 4 and beyond. With these incremental RPS volumes now included in the City's planning assumptions, the City expects that it will receive renewable energy volumes in excess of its procurement quantity requirement in Compliance Period 4. On a projected basis, this not only satisfies the City's compliance obligations but also a significant portion of its MMoP, providing additional flexibility in the event that retail sales surpass expectations or variable RPS deliveries (such as those related to VAMO) fall below projections. Again, the City believes that its internally adopted renewable energy procurement targets (reflective of statutory RPS mandates, plus its MMoP), as well as existing contractual commitments, leave the City very well positioned to meet its ongoing RPS compliance obligations in Compliance Period 4 and beyond. *Based on the City's assessment of compliance risk associated with its renewable energy contract portfolio, this risk category was assigned a rating of low.* If anything happens to change in terms of the City's internal assessment of RPS compliance risk, it will inform the CPUC accordingly in a future RPS Procurement Plan.

### VII.B. Risk Modeling and Risk Factors

The City will make reasonable efforts to minimize the risk of renewable procurement shortfalls for purposes of complying with applicable RPS mandates established in SB 100, but it cannot definitively predict the scope or magnitude of circumstances that may impact annual retail energy sales, renewable energy markets or individual project performance. The extent of the recent increase in short-term RPS product pricing, for example, was largely unexpected and has imposed significant financial burdens on California retail sellers when addressing incremental RPS procurement, particularly for product volumes delivering in 2024 and throughout Compliance Period 5. The City has prepared the following chart, which depicts recent RPS pricing movement – again, an approximately 400 percent price increase has been observed over the past 18 to 24 months; and RPS prices in calendar years 2025 through 2027 continue to rise.




The City responsibly assesses RPS compliance risk by considering three key planning elements: 1) retail sales variability; 2) renewable energy production/delivery variability; and 3) impacts to overall system reliability associated with the City's planned RPS purchases and other

influences. These topics will be generally considered in the noted sequence with observed risks informing potential adaptations to the City's planning process, potential adaptations to planning reserves and, ultimately, refinements to the City's renewable energy procurement (or sales) processes and quantities. As described elsewhere in this RPS Procurement Plan and in consideration of City-adopted RPS planning targets, the City expects to be well-positioned to meet its RPS compliance requirements in Compliance Period 4 (and beyond). Additional procurement will be necessary to fulfill anticipated RPS compliance obligations in Compliance Period 5 and beyond, but the City is actively addressing such needs by identifying new supply opportunities (such as those identified through its January 2024 solicitation for long-term RPS supply and incremental capacity) and negotiating power purchase agreements for this supply. Therefore, the City's self-determined risk of non-compliance is low. Nevertheless, the City will continue to assess demand-side and supply-side risks to better understand potential areas of concern and to promote achievement of organizational compliance objectives. If the City's self-determined risk of non-compliance happens to change in the future, it will accordingly advise the Commission of such assessment, related causes and anticipated remedial actions.

Regarding demand-side risk, the City continues to evaluate prospective retail sales during the planning period through 2034, including but not limited to new development projects (that could increase retail energy consumption) and business closures, expected customer attrition (or growth) and changes to behind-the-meter generating capacity. From a practical perspective, the greatest demand-side risk with regard to the City's anticipated customer base is that retail sales are meaningfully higher than anticipated during Compliance Period 5 and beyond. As the Commission is aware, CCAs provide an opportunity for customer choice, allowing customers to voluntarily participate in the City's program or remain bundled customers of the incumbent

utility, SCE. To the extent that customers choose to leave the City's CCA program, or "opt out", the City's retail sales will decrease, resulting in related increases to the ratio of renewable energy serving such customers (and improving the City's position relative to applicable RPS compliance mandates) – it is unlikely that the City's renewable supply commitments will provide volumetric flexibility/options (to increase contracted supply at the City's election) in the event of higher-than-anticipated retail sales volumes; as such, and if retail sales happen to exceed the City's expectations, it would need to pursue additional procurement opportunities to address unanticipated open positions. Based on its own experience as well as input from other CalChoice members, the City believes that its customer base is relatively stable and, barring any unforeseen circumstances, substantial year-over-year variations in retail sales are not expected to occur. Also, considering the City's ongoing coordination with its planning department, the City expects to be well informed regarding upcoming development projects or other customer changes that could materially increase retail sales. For this reason, the City believes that demand-side RPS compliance risk is manageable.

Regarding supply-side risks, the City is aware of the generation variability/intermittency associated with certain renewable technologies as well as the possibility of curtailment (based on pricing considerations or market directives) during certain times of day/year. In the case of new-build renewable projects, the City is also aware of the possibility of project delays and, potentially, project failure. Such circumstances can materially diminish renewable energy deliveries, jeopardizing the achievement of RPS compliance and exposing the CCA program to unexpected financial consequences, if such circumstances impact larger (or multiple) supply sources. Based on the City's relatively modest RPS planning reserve, it will need to be highly selective in identifying its renewable energy suppliers, particularly those offering supply from

new-build generating facilities, and will generally focus on organizations that have well-documented track records of successfully fulfilling RPS delivery obligations.

To the best of the City's knowledge, few early-stage CCAs have experienced difficulties with generalized renewable energy procurement, but long-term RPS contracting has been more challenging – typical lead times (between contract execution and project completion) associated with new-build renewable energy projects are often 2-3 years or longer, and related power supply contracting efforts are rarely initiated so far in advance of service commencement. With this observation in mind, early-stage CCAs must either: 1) focus RPS contracting efforts on existing renewable generating resources; or 2) accept failure/delay risks associated with new-build renewable projects placed under contract near the time of CCA launch by incorporating reasonable planning reserves to mitigate such risks. In the case of the City, a balanced approach has been pursued, which will focus on contracting efforts with both new and existing renewable generating resources, thereby minimizing, but not eliminating, risks associated with compliance shortfalls. The City expects to pursue long-term RPS contracts that will yield delivery surpluses relative to applicable compliance mandates and such surpluses are expected to mitigate concerns related to project development delays and or failures during Compliance Period 4.

The City also anticipates mitigating supply-side risk by incorporating fixed-volume and index-plus pricing structures amongst its portfolio of RPS supply agreements. These procurement mechanisms serve to mitigate the risk of delivery variability (typically associated with intermittent renewable resources and/or renewable resources that may be subject to periodic curtailment) and exposure to negative market pricing (which could prompt economic curtailment). Fixed volume arrangements, in particular, also mitigate risk associated with commercial operation delays and facility failure; these structures also provide buyers with

financial protections (via penalty payments) for under-delivery (which could be used, as a last resort, to offset compliance penalties in the event that the supplier or the City are unable to identify replacement volumes).

As part of the City's approach to managing supply-side risk (which will be carried out through its relationship with CalChoice), it has also adopted what it believes to be a CCA best practice related to RPS contracting: structuring solicitations to identify proven renewable generating technologies in prime resource locations to be developed and/or operated by the most experienced available suppliers (with strong, well-documented track records of successful project completion and operational reliability).

This noted, there is always a possibility that future renewable energy supply will not be delivered as required, which is why the City, based on discussions with CalChoice, has incorporated a 3.6% minimum margin of procurement in its renewable energy planning process. The 3.6% minimum margin of procurement, or "planning reserve", has been determined to be sufficient, as discussed below, but this metric will undergo regular review and, if necessary, revision during future planning discussions and in consideration of ongoing procurement efforts.

The City has compiled information about curtailments of renewable energy in CAISO over the last four years. This information is presented below. The data shows that renewable curtailment has been consistently under 1% of load. The City also analyzed the occurrence of negative prices within the SP-15 area of the CAISO. These studies, combined with the analysis of other risk discussed below, indicate that the 3.6% minimum margin of procurement adopted by the City should be sufficient. These past results are obviously not indicative of what might occur in the future, and indeed the data shows that the trend of renewable curtailment has generally been increasing.

LCE utilizes a quantitative risk assessment that estimates the energy impacts related to potential supply side losses. This approach organizes prospective risks into four general categories which pose the greatest possible supply-side impacts to the delivery of expected RPS energy: 1) curtailment risk; 2) counterparty risk; 3) intermittency risk; and 4) project cancellation risk. As part of its quantitative risk assessment, the City examines hourly forward-looking data that could lead to curtailment risk, specifically the likelihood that an hour within the forward energy market exhibits pricing below negative $40/MWh beginning in 2024 through the end of the current planning period. This price was selected in consideration of recent PCC1 market value during the 2023 and 2024 calendar years, but the City is cognizant of the fact that such pricing is incredibly high relative to historical norms. Further, the City is aware that PCC1 prices have continued to increase over the past several months, reaching levels around $90/MWh for deliveries occurring in calendar year 2025. The recent volatility in regional renewable energy markets imposes challenges in determining market price benchmarks that ought to be applied when evaluating prospective curtailment risk, particularly over an extended planning horizon such as the one contemplated in this planning process. Nonetheless, the noted price of negative $40/MWh seems appropriate for the time being, particularly over the 10-plus-year planning horizon contemplated herein, but will be reevaluated in the future to ensure that risks associated with ongoing curtailment are appropriately evaluated in the future. Unfortunately, this is a somewhat precarious analysis when considered over a 10-plus-year planning horizon, as RPS pricing levels are expected to change (possibly significantly) between 2024 and 2034. Over the upcoming two to three years, the City has limited opportunity to direct curtailments through its existing supply agreements, and much of the risk of actual curtailment seems limited to deliveries related to the City's long-term VAMO contract with SCE. While the City has no

visibility with regard to the curtailment provisions reflected in SCE's VAMO contract portfolio, it has proactively reflected an eight percent "conservatism adjustment" for such deliveries to address possible resource curtailments and/or general delivery shortfalls – again, because the City has no visibility with regard to the contracting provisions that may allow for SCE to curtail/reduce deliveries, it does not want to risk overstating VAMO volumes within its planning process and, after evaluating one year of VAMO deliveries, has observed that actual deliveries did fall below forecasted deliveries in 2023. The likelihood of curtailment is thus calculated by dividing the number of hours where prices fall below the noted bid floor by the number of hours in a year. While we expect that instances of negative pricing below the bid floor will be relatively infrequent, we also expect that all possible renewable energy production from the affected generating facility will be curtailed during such instances, resulting in proportionate delivery reductions that are relatively high during these periods of time. Though instances of hourly pricing below the noted floor are very low (below 1.0% of all hours), portfolio risks (as measured by volumetric shortfalls) can be more substantial, so the City has increased this risk factor to 5% of expected deliveries (or 8%, as previously noted, for forecasted VAMO deliveries from SCE) to ensure a measure of conservatism in evaluating this potential risk. Note that curtailment risk has only been evaluated for renewable supply agreements under which curtailment may occur – for example, a fixed, firm delivery obligation would not be subject to curtailment risk, so expected delivery shortfall related to curtailment would be zero in this example.

When anticipating impacts related to curtailment, the City assumed that it would be financially beneficial to curtail potential generation at prices below the noted bid floor while pursuing alternative renewable energy supply via short-term purchases from the market (in place

of curtailed output from the affected generating source).

The figures presented in the column quantifying curtailment risk are calculated by aggregating expected renewable energy deliveries from each contract then multiplying such volumes by the City's assigned risk factor for curtailment (5.0% for non-VAMO deliveries and 8% for VAMO deliveries, as noted above). When considering the potential magnitude of all possible curtailments associated with the City's RPS supply portfolio through 2034, the conservatively estimated curtailment impact was determined to be 4.0% of all RPS deliveries. The City expects actual delivery reductions related to curtailment to be much lower. The City's decision to pursue a diverse mix of fixed-volume and as-available RPS purchases helps mitigate portfolio risk related to curtailment. *Based on the City's assessment of curtailment risk associated with its renewable energy contract portfolio, this risk category was assigned a rating of low.*

Counterparty risk is the risk posed by a counterparty being unable or unwilling to honor its total RPS delivery obligations, as reflected in related contract documents. The City has quantified this likelihood by considering S&P Global's, Global Corporate Annual Default Rates by Rating Category (%) as a measure of organizational viability and financial stability. While this rate considers industries beyond the energy sector, it provides relevant insights into the correlation and potential impacts of dealing with counterparties that do not exhibit strong credit profiles. The likelihood of default by assigned credit rating was averaged over the six-year period between 2014 to 2019. These years were chosen to remove irregularities in default rates during the Covid-19 pandemic. If a counterparty was found to be unrated, then the contract was reviewed to identify specified credit assurances; based on such assurances, an approximate rating was derived based on the City's experience and risk tolerance. *Based on the City's assessment of*

*counterparty risk associated with its renewable energy contract portfolio, this risk category was assigned a rating of low.*

Intermittency risk has become increasingly prevalent in the wake of ongoing renewable infrastructure buildout, which has been heavily biased towards the photovoltaic solar generating technology. Such risks ought to be accounted for as part of a thoughtful quantitative risk assessment to ensure the identification of sufficient planning reserves. The City assumed a two percent intermittency adjustment for all as-available RPS supply agreements, including its VAMO agreement with SCE, to promote additional conservatism while it continues to learn more about the actual performance of the intermittent resources that it has within its RPS supply portfolio. When considered in concert with the City's assumed eight percent curtailment risk adjustment for VAMO contracts, the total risk adjustment – curtail plus intermittency – that has been imputed for future VAMO deliveries is 10 percent. As 2023 was the first year in which VAMO deliveries occurred, the City wanted to observe a highly conservative forecasting approach but will continue to evaluate its assumed risk adjustments relative to actual contract performance to determine if adjustments will be necessary in the future.

As new intermittent facilities are developed to meet the procurement burdens of increasing regulatory requirements, the risk of variances between projected and actual energy deliveries will be amplified. Quantifying intermittency risk is largely dependent on available data, as each generating facility is unique (geographically, operationally, etc.). As data is gathered from facilities comprising an RPS supply portfolio, planning adjustments can be incorporated to account for variances between actual and expected historical deliveries, allowing the retail seller to incorporate adjustments in its resource planning and procurement assumptions to counteract such risk. During the early stages of any delivery period, however, data is often

lacking so planning adjustments are more challenging to quantify and must be based on reasonable estimates derived by observing similar projects. Over time, as meaningful amounts of historical data are compiled, the purchaser should be able make increasingly accurate adjustments to its planning assumptions to ensure that procured RPS volumes more accurately align with anticipated needs. This noted, resource intermittency risk is limited across the balance of the City's RPS supply portfolio, as several of the City's RPS contracts specify fixed delivery quantities.

When evaluating intermittency risk in the future, the City believes such risk can be reasonably quantified when available operating history reaches two years or more. Before substantive historical data becomes available, input from the asset owner/operator, insight derived from the operating history associated with similar facilities and limited historical data can be applied to generate an intermittency impact assessment. Once a generating facility has established steady-state operations, intermittency risk can be quantified by dividing the amount of actual energy received by the amount of expected energy for each year of a given contract, then averaging observed variances across each year of the available operating history. The resulting percentage is multiplied by the remaining expected energy deliveries under the contract to approximate potential delivery deficits related to intermittency. Employing this intermittency analysis is helpful in identifying especially risky contracts, which in turn assists the City in determining facility-specific intermittency risk values. As alluded to above, as more data becomes available the intermittency risk metric can be updated to more accurately reflect the performance of certain generating facilities over time. *Based on the City's assessment of intermittency risk associated with its renewable energy contract portfolio, this risk category was assigned a rating of low.*

The final category reflected in the City's quantitative risk analysis is project/contract cancellation risk. This category is distinct from counterparty risk because the risk of project/contract cancellation may only affect a single project under a counterparty's portfolio. Projects may be cancelled for a variety of reasons, but in today's market, significant pricing volatility can present unforeseen risks for both buyers and sellers, depending on the timing of such transactions. This risk is particularly prevalent for generator-specific supply commitments related to new-build facilities. These projects were an area of focus within this category because they have a single point of failure unlike RPS energy purchased from a pool of resources (under a portfolio-style purchase agreement in which there is generally more diversity amongst the sources of supply). Based on discussions with various counterparties, other load serving entities and its own experience, the City has assessed that this risk affects roughly 1 in 20 deals. *Based on the City's assessment of project failure/contract cancellation risk associated with its renewable energy contract portfolio, this risk category was assigned a rating of low.*

Considering these categories holistically, the City was able to derive a cumulative energy percentage at risk. In consideration of the City's relatively conservative risk tolerances, a top-level risk of non-delivery offset at 0.25% of renewable energy procurements was added to the calculated energy at risk percentage. This adder will help to account for risks that the City cannot foresee and will help to guarantee the sufficiency of the City's planned RPS purchases in meeting both compliance-related and internally adopted renewable energy procurement targets. The percentage of renewable energy and error is the percentage of total renewable energy procured that was determined to be at risk, while the percentage of retail load is the energy at risk as a percentage of retail load. These "at risk" percentages reflect possible losses which, through no fault of the City, may occur by virtue of being a market participant. These losses pose

a risk for non-compliance relative to the City's RPS goals and targets. Since this number is not a guaranteed loss, the City will implement the previously mentioned mitigation strategies to give the greatest chance of meeting its adopted renewable energy procurement targets. Note that the Energy to be Delivered to Market reflected in the following table has been updated since submittal of the City's Final 2023 RPS Procurement Plan. The following table now reflects those forecasted energy deliveries occurring during the current planning horizon: 2024 through 2034. Expected deliveries beyond 2034 have been omitted from the City's analysis.

| | | Energy | Delivery & Market Risks | | | |
|---|---|---|---|---|---|---|
| ID | Contract | Energy to be Delivered to Market (MWh) | Curtailment Risk (MWh) | Counterparty Risk (MWh) | Intermittency Risk (MWh) | Project Cancellation Risk (MWh) |
| 1 | Contract 1557 | 276,546 | 13,827 | 5,315 | 5,531 | - |
| 2 | Contract 1561 | 192,185 | 9,609 | 3,694 | 28,828 | - |
| 3 | Contract 1575 | 122,500 | - | 2,354 | - | - |
| 4 | Contract 1627 | 168,000 | - | 3,229 | - | - |
| 5 | Contract 1687 | 237,716 | 11,886 | 4,569 | 23,772 | - |
| 6 | Contract 2100 | 81,340 | - | 1,563 | 4,067 | - |
| 7 | Contract 2683 | 119,961 | - | 2,306 | - | - |
| 8 | Contract 2794 | 63,083 | - | 1,212 | 12,617 | - |
| 9 | Contract 4382 | 235,128 | 11,756 | 4,519 | - | - |
| 10 | Contract 4630 | 369,925 | 29,594 | 104 | 7,399 | - |
| 11 | Contract 4643 | 258,488 | 20,679 | 72 | 5,170 | - |
| 12 | Contract 5043 | 175,000 | - | 3,024 | - | - |
| 13 | Contract 5222 | 50,000 | - | - | - | - |
| Total | | 2,349,871 | 97,352 | 31,962 | 87,382 | - |

| Energy | |
|---|---|
| Total Renewable Energy | 2,349,871 |
| Total Renewable Energy at Risk | 216,696 |
| % of Renewable Energy at Risk | 9.22% |
| % of Unknown Error at Ris | 0.25% |
| % of Renewable Energy & Error at Risk | 9.47% |
| % of Retail Load | 3.15% |

Based on the City's analysis, the City assessed that approximately 9.47% percent of its expected future RPS deliveries (from both online generation and facilities under development) may be at risk, which equates to 3.15% of its retail load. These percentages reflect average risk throughout the study period, which suggests that actual risk could fall somewhat above or below these percentages. In light of this updated risk assessment, the City has adjusted its prior 4%

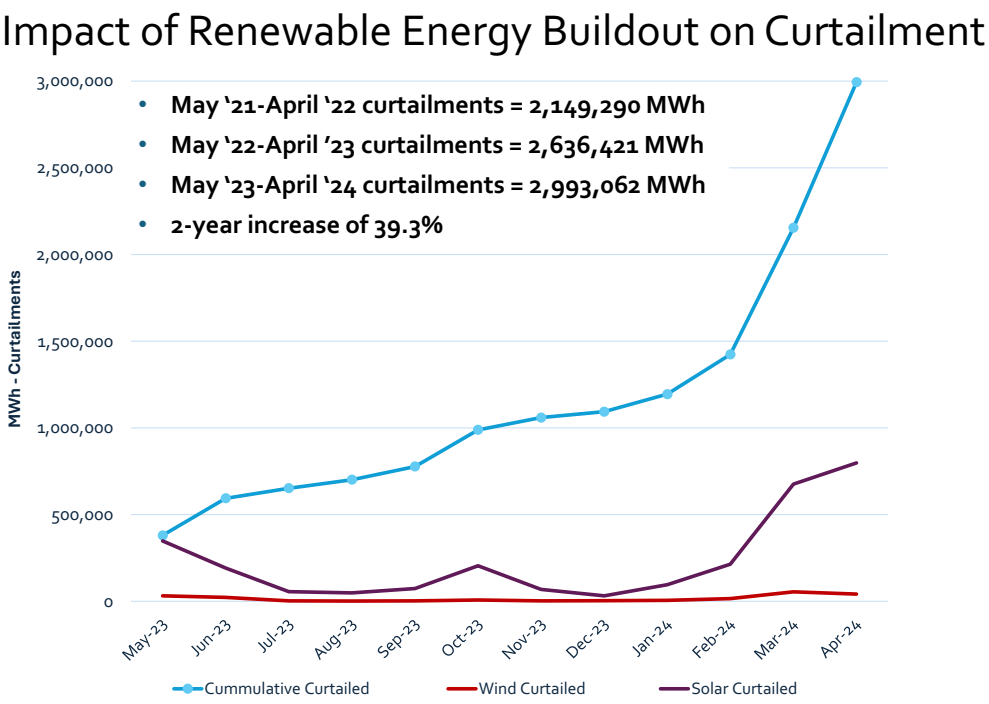
MMoP (of retail load) to 3.15%.

The City is also aware of other risk categories, including supply chain risk and technology risk which have been considered qualitatively as part of the City's risk assessment. At this point in time and in consideration of the City's existing contractual commitments, the risks within these categories are generally low with the exception of supply chain risk.

Technology risk, meaning the risk that future technological enhancements will result in the maintenance of a renewable supply portfolio that is meaningfully comprised of obsolete resources (based on ongoing technological enhancements that reduce the incremental cost of future renewable energy purchases relative to existing technologies), is a legitimate concern, but the City has thoughtfully constructed a diverse portfolio of renewable generating resources, which includes solar, wind, geothermal, small hydro, biomass and hybrid resources as well as temporal differences across contract start and end dates. With these considerations in mind, the City believes it has mitigated technology risk to the greatest practical extent, acknowledging, of course, that not all technology risk can be mitigated given the minimal flexibility provided on California's RPS compliance program. While technological risk could be aptly categorized as medium or high, it is substantially unavoidable when assembling an RPS-compliant supply portfolio. Over time, however, the City will continue staggering contract delivery terms and will continue pursuing technological diversity to reduce such risks to the greatest practical extent. The City will also thoughtfully consider any new renewable generating technologies that may surface in the future. *In consideration of the results of the City's risk analysis, the composite risk assessment, which considers all of the previously described risk categories, results in an overall risk rating of low.*

As previously mentioned, the City has also analyzed historical data on curtailments in the CAISO energy markets. In the CAISO energy markets, much of renewable resource curtailment is achieved through voluntarily submitted bids that are directly responsive to very low (or negative) pricing conditions. In such instances, generator operators will cause such resources to "shut down," reducing associated production and related deliveries to contracted off-takers. Because of this structure, historical curtailment data is also indicative of negative pricing. The City recognizes this connection and the likely point of inflection that is expected to exist in curtailment activities (based on the previously described analysis). Contrary to the perspective reflected in its Final 2023 RPS Procurement Plan (in which the City indicated that it did not expect there to be ongoing increases in curtailment activities and also expected more moderated incidences of negative pricing), the City's recent evaluation of ongoing curtailment trends within the CAISO market suggests that California's current resource composition and general market dynamics have not developed to a point that will allow resource curtailment to subside. In the following graphic and table, the City has assessed curtailment trends, as compiled by CAISO for wind and solar resources, over the most recent 36-month period beginning May 2021 through April 2024. During this 36-month period, curtailments have increased by more than 39 percent, approaching three million megawatt hours in the 12-month period ending April 2024 (up from 2.1 million megawatt hours in the 12-month period ending April 2022). Increased solar curtailment appears to be the largest component of this dynamic, and the City anticipates that the trend may continue until additional storage, load shifting and/or other technologies can be developed to mitigate ongoing trends. The City has also updated its previous compilation of curtailment statistics, which now extends from 2018 through May 2024. This data set also supports the City's observations regarding increasing curtailment and further justifies the high

level of conservatism that the City is observing in proactively addressing this risk in its planning assumptions.



| **Annual Curtailment (MWh)** | | |
|---|---|---|
| | Wind | Solar |
| 2018 | 28,686 | 432,357 |
| 2019 | 43,557 | 921,684 |
| 2020 | 90,276 | 1,497,220 |
| 2021 | 78,477 | 1,426,326 |
| 2022 | 128,990 | 2,320,258 |
| 2023 | 150,604 | 2,508,916 |
| 2024 (Partial Year*) | 174,475 | 2,420,655 |
| **Annual Curtailment (% of Specific Generation)** | | |
| 2018 | 0.17% | 1.56% |
| 2019 | 0.27% | 3.22% |
| 2020 | 0.56% | 4.99% |
| 2021 | 0.41% | 4.19% |
| 2022 | 0.70% | 6.26% |
| 2023 | 0.72% | 6.10% |
| 2024 (Partial Year*) | 1.77% | 13.13% |
| **Average** | 0.66% | 5.64% |
| **Annual Curtailment (% of Load)** | | |
| 2018 | 0.013% | 0.190% |
| 2019 | 0.020% | 0.420% |
| 2020 | 0.041% | 0.680% |
| 2021 | 0.036% | 0.650% |
| 2022 | 0.057% | 1.030% |
| 2023 | 0.069% | 1.148% |
| 2024 (Partial Year*) | 0.212% | 2.939% |
| **Average** | 0.064% | 1.008% |
| *Through May 2024 | | |

In reconsidering its prior assessment of curtailment trends, the City seems to have been overly optimistic in its assumptions regarding the resolution of issues and complementary infrastructure buildout that were expected to mitigate curtailments, as curtailments within the CAISO footprint appear to be rising. After evaluating more recent data, as presented above, the City believes that California's existing infrastructure composition is not yet prepared to substantially mitigate these curtailment trends, which is why the City has incorporated increased curtailment assumptions in its quantitative risk assessment.

After examining the data from the risk assessment, CAISO curtailment and a study of negative prices in section XIII, LCE remains confident that the 3.15 percent minimum margin of procurement that it has now adopted provides the correct balance of risk and cost management;

the noted MMoP is also reflective of the City's current RPS contract portfolio, which includes a mix of facility-specific transactions with photovoltaic solar resources and biomass resources as well as fixed-quantity transactions (that eliminate risks associated with energy curtailment and/or negative pricing). In consideration of the City's exposure to solar and wind production variability (as a percentage of its total RPS supply) relative to the average historical curtailments for the solar generating technology (as reflected in the previous table), the noted 3.15 percent minimum margin of procurement conservatively addresses the City's risk related to delivery shortfalls that may result from solar and wind generating technologies (reflected in its current RPS supply portfolio). The City will continue to monitor trends in California's energy market, especially the curtailment levels of renewable resources represented within the City's RPS supply portfolio, and, if necessary, will adjust its minimum margin of procurement. Furthermore, the City has minimal exposure to delivery shortfalls related to project failure and/or delays due to the fact that only one of its current RPS supply contracts will rely on production from a generating resource that has yet to achieve commercial operation; the City has also incorporated provisions in certain RPS contracts to allow flexibility (to the seller) in identifying alternative resources for purposes of mitigating the potential of delivery shortfalls.

### VII.C. System Reliability

With respect to system reliability, the City is aware of the need to pursue a portfolio of renewable resources with diverse and complementary delivery profiles as well as complimentary infrastructure (namely, energy storage infrastructure) that will support the reshaping of renewable energy deliveries to better align with load. For example, renewable energy procurement efforts that may initially focus on relatively low-cost solar resources will often necessitate subsequent investments in co-located energy storage infrastructure and/or higher-cost

baseload renewable generating technologies, such as those using geothermal, biomass and landfill gas fuel sources. These baseload renewable technologies are often priced at three-to-four times the level of in-state photovoltaic solar generation but generally provide increased capacity value (due to the more predictable, baseload generating profiles of such resources) and related reliability enhancements. By ensuring a better match of energy and load, as well as procuring resources more capable of providing ancillary services than intermittent renewable resources alone, the City seeks to mitigate potential negative system impacts such as rolling outages or violations of current standards for ancillary services. Certain of the resources that may be procured to satisfy recent capacity mandates are also expected to support grid reliability and may include baseload renewable energy resources, renewable energy plus storage configurations or stand-alone battery storage configurations, all of which would be expected to improve grid reliability by some measure. Over time, the City will balance the often -competing interests of cost and reliability to support reasonably close alignment between supply and demand (reducing the need for pronounced resource ramping on the system), cost-effective procurement and overall grid reliability. The City is aware that low-cost, long-term solutions are incredibly challenging to identify but will remain committed to pursuing a conscientious planning process that balances grid reliability, compliance demonstration and customer cost impacts.

The City is willing to engage in discussions with SCE and the California Independent System Operator regarding reliability and other system impacts related to its portfolio. The City is further willing to consider the feedback provided by these organizations in its planning and procurement processes going forward, so long as such suggestions generally conform with organizational objectives and Council-adopted policies. *In consideration of the City's increasingly diverse contractual commitments for requisite renewable energy supply and the*

*organization's intent to focus on the identification of RPS-eligible and complementary technologies that will mitigate reliability impacts associated with increased use of intermittent generating resources throughout the state, overall risks to system reliability associated with the City's RPS Procurement Plan were determined to be low.*

### VII.D. Lessons Learned

In terms of lessons learned related to risk management, the City observes that internally adopted, above-RPS planning targets generally serve as effective mitigation measures related to RPS compliance. While setting lofty RPS targets is not a viable or desirable option for all retail sellers, the City will continue to evaluate (in the period leading up to program launch) the sufficiency of its adopted planning reserves (MMoP) to reduce the risk of RPS compliance shortfalls. If future RPS contracting activities impose larger than anticipated risks (on project failure and/or under-delivery), the City may increase its noted planning reserve to provide additional protection against such risks. The extent to which such adjustments may occur is not known at this time but will be discussed, as necessary, in a future RPS Procurement Plan.

The City has also observed the value of resource diversity across a broad spectrum of considerations, including resource location, generating technology, suppliers/developers, and contract structures, amongst other concerns. Long-term renewable supply commitments are inherently risky in the sense that such commitments expose the buyer and/or seller to a variety of unknown circumstances, including but not limited to evolving market prices and policy changes. Throughout a long-term contract relationship, it seems evident that areas with initially low levels of negative pricing (and related curtailment of energy production) can materially change as new project development activity occurs, creating (or exacerbating) conditions of over-supply and related incidents of energy curtailment. This risk is particularly challenging to manage, as

California's escalating RPS procurement mandates necessitate ongoing investment in new renewable generating infrastructure, which is often sited in resource-rich areas that become oversaturated with similar generating technologies (and related delivery profiles). These circumstances seem inevitable and, over the course of a long-term supply relationship, may expose the contracted parties to unexpected risks, including negative prices (and related budgetary impacts) and curtailed deliveries (which may compromise the fulfillment of mandated procurement targets by the buyer). The City will reevaluate its current renewable energy planning reserve to address anticipated curtailment and/or underperformance risk associated with specific projects placed under contract.

The City is also aware that risk can be diversified through various contract structures. For example, an "index-plus" pricing structure is useful in transferring nodal/market price risk to the seller – in such structures, the buyer pays a fixed renewable premium, while the seller assumes risk associated with market price fluctuations but also receives market revenues (which could be higher or lower than anticipated) – even though the buyer receives the energy, renewable attribute and (in certain instances) capacity value as part of such a transaction, the buyer's financial risk is generally limited to the payment of the renewable premium. For buyers who are averse to market price risk, the index-plus pricing structure effectively eliminates this concern but may result in higher overall contract costs (which may be acceptable, as a form of insurance, to mitigate market price exposure). In other structures, such as the "fixed-price" or "aggregate pricing" structure, the renewable energy premium and energy commodity (and oftentimes, capacity value) are reflected in a single price paid by the buyer – this structure deliberately allocates market price risk to the buyer, but the buyer may also pay a lower imputed renewable premium in instances where market revenues (realized when the energy commodity is

delivered to the grid) closely approximate (or exceed) the aggregate renewable energy price. In evaluating potential contract structures, decisions can be made in consideration of risk allocation preferences, and the City intends to pursue contracting structures that balance such risks over time. To date, the City has pursued many renewable contracts that allocate market price risk to its renewable energy sellers – this was determined to be a desirable approach while the City worked to accrue financial reserves while promoting budgetary certainty. With time, however, the City expects to increasingly use aggregate pricing structures that could lower overall procurement costs but may expose the CCA program to increased market risk. Any changes to this approach will be articulated in future iterations of the RPS procurement planning process.

## VIII. Renewable Net Short Calculations

LCE has provided an updated quantitative assessment, which is attached hereto as Appendix C, to support the qualitative descriptions provided in this RPS Procurement Plan. More specifically, the City previously described (above, in Section VII, Risk Assessment) its quantitative risk assessment methodology and the results of such analysis, which suggested that 9.47% of future renewable energy deliveries (from both online facilities and facilities under development) were at risk, meaning that the City reasonably anticipates that this portion of expected renewable energy deliveries will not be received. This 9.47% risk factor of future RPS deliveries equates to 3.15% of future retail load, which is equivalent to the City's recently updated MMoP. The City's determination was based on an assessment of the risk categories reflected in the City's analysis, which included: 1) curtailment risk; 2) intermittency risk; 3) counterparty risk; and 4) project failure/contract cancellation risk. The City applied its 3.15% MMoP (which equates to 9.47% of future RPS deliveries) as a conservative failure rate for both facilities under development and online generation when preparing its Renewable Net Short calculations. This 9.47% figure can be seen in rows 14 and 16 of the RNS reporting template.

Such an (upward) adjustment was deemed appropriate to insure against unexpected renewable energy delivery shortfalls that could not be reasonably quantified through the aforementioned assessment. The City will actively monitor actual RPS deliveries under VAMO, and to the extent such deliveries fall short of expectations, it may adjust the noted failure rate for operational generating facilities to more accurately reflect the performance of this contract. If such adjustments are deemed necessary or appropriate in the future, the City will reflect such adjustments in a future planning document.

**IX. Minimum Margin of Procurement (MMoP)**

The City is developing an electricity supply portfolio that will further the achievement of state mandates. The following table displays the City's intended margin of RPS over-procurement based on the differential between the SB 100 procurement targets and the City's internally adopted RPS procurement targets – this differential is defined as the City's voluntary margin of over-procurement, or VMoP. It is readily apparent that the City has decided to forgo voluntary incremental purchases of RPS-eligible renewable energy, which is reflective of the prevailing priorities of the City's customer base and leadership: these priorities place an emphasis on rate competitiveness and local control, rather than heightened levels of RPS procurement. This decision should not be construed as a reflection of the City's commitment to fulfilling statewide RPS mandates. As further described below, the City has incorporated an RPS planning reserve, described as its minimum margin of procurement, or MMoP, to do just that.

## State & Internally Adopted Renewable Energy Requirements

| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SB 100 RPS Procurement Requirement (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Minimum Internally Adopted RPS Procurement Target (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Voluntary Margin of Procurement (% of Retail Sales)** | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

As previously noted, the City's core goals and objectives emphasize the important of rate competitiveness and, therefore, the organization has adopted prudent RPS planning reserves without a VMoP. To address RPS compliance risk, the City uses its risk assessments, including its renewable net short calculations and curtailment analysis, to establish a Minimum Margin of Procurement to guide RPS compliance procurement planning. The City calculated the minimum margin of procurement, or MMoP, using a 3.15% risk adjustment (or planning reserve) that was applied to the City's annual retail sales estimates in each year of the planning period. Based on the manner in which the City has established its MMoP, as a 3.15% planning risk adjustment relative to retail sales, the effective MMoP percentages observed by the City range from 5.2% to 7.2%, relative to the City's projected RPS compliance need, over the current planning horizon (through 2034). The following chart provides additional detail regarding the effective MMoP percentages observed by the City.

| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SB 100 RPS Procurement Requirement (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Minimum Internally Adopted RPS Procurement Target (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Minimum Margin of Procurement (% of Retail Sales)** | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% |
| **Lancaster Choice Energy's Minimum Margin of Procurement (% buffer relative to RPS Mandate)** | 7.2% | 6.7% | 6.4% | 6.1% | 5.8% | 5.5% | 5.2% | 5.2% | 5.2% | 5.2% | 5.2% |

The City's MMoP is intended to address potential delivery variability for intermittent resources, curtailment risk, project delays and other operational peculiarities that may cause

actual renewable energy deliveries to deviate from projections. Note that certain of the City's renewable energy deliveries are not subject to variability – such agreements reflect minimum fixed delivery quantities (or quantities with limited volumetric variability) with corresponding financial penalties (paid to the City by related sellers in the event of delivery shortfalls).

Presently, the renewable energy procurement targets reflected in the City's planning process reflect moderate, but prudent, planning reserves to allow for certain demand- and supply-side variability that could impact RPS compliance achievement. The targets reflected within this RPS Procurement Plan reflect state mandated RPS procurement targets as well as the previously described planning reserve. Staff assumes that future renewable procurement targets (inclusive of planning reserves necessary to meet RPS mandates) will consider a variety of factors, including but not limited to, the operational status of prospective renewable energy facilities to be placed under contract, the experience and general development track record of each project development team (associated with new resources), resource size (capacity), the location of prospective generating resources (for new facilities) and impacts of over-procurement to the CCA program's procurement budget and customer rates. Such considerations, amongst others, will be evaluated by the City in determining whether the current margin of over-procurement should be adjusted in the future. To the extent the City anticipates planning risk related to its renewable energy contract commitments, it will likely adjust its margin of over procurement accordingly.

### IX.A. MMoP Methodology and Inputs

The City's MMoP is intended to address an RPS failure rate at or above that which is reflected in the renewable net short reporting template. In the event of contract under-deliveries, commercial operation delays and/or project failures, the MMoP should be sufficient to ensure

the City is compliant with the RPS procurement requirements. As shown in Section VII above, the City's MMoP of 3.15% exceeds the historical level of curtailments in the CAISO grid (shown as below 1.0% for wind and just over 1.0% for solar, expressed as percentages of load), and also exceeds the City's risk assessment of RPS contracts (shown as 3.15% of retail load). The City's VMoP is the annual RPS-eligible minimum portfolio content identified in the City's internally adopted planning targets, which is currently equivalent to California's statewide RPS mandate.

As discussed in Section VIII, the City has incorporated risk adjustments to certain renewable energy delivery estimates associated with existing generating facilities. Achieving the City's MMoP necessitates higher levels of renewable energy procurement (3.15% of retail sales throughout the planning period), which accommodate the potential for delivery shortfalls (due to a variety of circumstances) while still allowing the City to meet prescribed RPS mandates.

| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SB 100 RPS Procurement Requirement (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Minimum Internally Adopted RPS Procurement Target (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Voluntary Margin of Procurement (% of Retail Sales, based on difference between SB 100 mandate and Lancaster Choice Energy's** | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| **Lancaster Choice Energy's Minimum Margin of Procurement (% of Retail Sales)** | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% |
| **Lancaster Choice Energy's Minimum Margin of Procurement (% buffer relative to RPS mandate)** | 7.2% | 6.7% | 6.4% | 6.1% | 5.8% | 5.5% | 5.2% | 5.2% | 5.2% | 5.2% | 5.2% |
| **Lancaster Choice Energy's Aggregate Planning Reserve: MMoP + VMoP (% buffer relative to RPS mandate)** | 7.2% | 6.7% | 6.4% | 6.1% | 5.8% | 5.5% | 5.2% | 5.2% | 5.2% | 5.2% | 5.2% |

The City will effectively ensure its compliance with applicable RPS mandates by procuring in consideration of applicable RPS mandates, plus the City's adopted MMoP. The City offers participating customers a portfolio comprised of renewable energy products which

minimally meet statewide RPS procurement mandates (44.0% in 2024). Staff understands that the City Council may periodically consider changes to the level of renewable energy included within the City's default retail service offering but also understands that such content would not fall below statutory RPS mandates. If the City Council considers and adopts changes to its internal renewable energy procurement targets, the organization will accordingly update future RPS planning documents to reflect such changes.

Presently, the renewable energy procurement policy that has been adopted by the City Council specifies a renewable energy target that mirrors similar targets reflected in California's RPS Program, plus the previously described 3.15% planning reserve. As such, the City plans to gradually increase its procurement of RPS-eligible renewable energy over time, inclusive of the aforementioned planning reserve, which is intended to mitigate risks associated with under delivery and/or failed (or delayed) project development.

### IX.B. MMoP Scenarios

The City plans to meet the annual program renewable goals reflected in the table presented in Section IX (above), including the MMoPs reflected therein. As reflected in this table, the City's anticipated MMoP percentage is 3.15% of retail load (or 5.2% to 7.2%, relative to applicable RPS procurement mandates throughout the planning period). During its bid evaluation and supplier selection processes, the City considers a variety of risks and believes that such risks are sufficiently addressed within its MMoP calculation – in consideration of the City's considerable reliance on fixed-volume renewable supply commitments, it has no reason to doubt the sufficiency of the MMoP reflected in its internally adopted RPS planning targets. This noted, if the City's resource planning and contract management processes happen to identify substantive concerns with the limited new-build renewable projects included/to be included in its supply portfolio, delivery shortfalls or other issues potentially impacting the proportionate level

of renewable energy reflected in its aggregate supply portfolio, the City will engage in expedited procurement processes to address such shortfalls (as a near-term solution) and also reevaluate the sufficiency of its MMoP (as a longer-term solution). As demand- and supply-side data are monitored in each year, the City may adjust planned short-term purchases and/or pursue surplus sales arrangements if actual renewable energy deliveries are tracking above its anticipated needs. By the end of each calendar year, the City hopes to manage the level of its internal planning reserve so that actual renewable energy deliveries are closely aligned with California's RPS Procurement Target.

The City will also model demand-side sensitivities that may impact MMoP calculations. In addition to load variability resulting from ongoing (minor) fluctuations in customer participation, the City will also monitor electric vehicle penetration rates, net energy metering participation rates and other considerations that may impact overall customer energy requirements and related MMoP calculations.

## X. Bid Solicitation Protocol

### X.A. Solicitation Protocols for Renewables Sales

When developing future solicitations for renewable energy products, the City will coordinate with CalChoice to develop solicitation protocols that: 1) ensures the City remains compliant with applicable RPS procurement mandates; 2) minimizes overall portfolio costs to the greatest extent practical; and 3) provides sufficient flexibility to accommodate reasonably anticipated supply-side and demand-side changes that could impact the City's overall renewable energy requirements.

### X.B. Bid Selection Protocols

Consistent with Section 399.13(a)(6)(C), CalChoice, on behalf of LCE, shall conduct bid solicitations for requisite energy resources that are intended to identify available eligible renewable energy resources (reflecting locational preferences, when applicable, for such resources), generating capacity, and required online dates to assist in determining what resources fit best within LCE's desired supply portfolio. CalChoice continues to assist the City with such processes with oversight and input from member communities. Since CCA program governing boards are comprised of local elected officials, these solicitations and, in particular, related procurement decisions are overseen by elected representatives of the community with guidance provided by CalChoice. Such processes seek to comply with locally-set targets that tend to exceed the RPS requirement and provide value to the community by supporting increased use of renewable energy resources. Any renewable energy supply agreements resulting from LCE's participation in CalChoice's March 2020 solicitation process will be brought to the City's Governing Council for approval prior to execution.

Through its relationship with CalChoice, the City is actively engaged in developing solicitation protocols for requisite renewable energy supply and has incorporated a variety of considerations in related bid requirements. Pursuant to Public Utilities Code 399.13(a)(6)(C)[3] and discussions with CalChoice, these considerations, which will be focused on solicitation protocols, bid evaluation and supplier selection, include:

1. Overall quality of response, inclusive of completeness, timeliness, and conformity;
2. Price and relative value within the City's supply portfolio;
3. Project location and local benefits;

[3] Cal. Pub. Util. Code § 399.13(a)(6)(C) ("Consistent with the goal of increasing California's reliance on eligible renewable energy resources, the renewable energy procurement plan shall include all of the following: A bid solicitation setting forth the need for eligible renewable energy resources of each deliverability characteristic, required online dates, and locational preferences, if any.")

4. Project development status, including but not limited to progress toward interconnection, deliverability, siting, zoning, permitting, and financing requirements;
5. Qualifications, experience, financial stability, and structure of the prospective project team (including its ownership);
6. Environmental impacts and related mitigation requirements, including impacts to air pollution within communities that have been disproportionately impacted by the existing generating fleet;
7. Potential impacts to grid reliability;
8. Potential economic benefits created within communities with high levels of poverty and unemployment;
9. Acceptance of the City's standard contract terms; and
10. Development milestone schedule, if applicable.

When evaluating future long-term renewable purchase opportunities, the City will also consider "the employment growth associated with the construction and operation of eligible renewable energy resources." More specifically, to the extent the City procures new RPS resources in solicitations where qualitative factors are considered, it will include a qualitative assessment of the extent to which proposed project development activities will support this goal. Such determinations will be based on information provided by the prospective supplier and the City's independent assessment of such information. When the City procures RPS resources, it will require bidders to submit information on projected California employment growth during construction and operation. This data will include the expected number of hires, duration of hire, and an indication of whether the bidder has entered into Project Labor Agreements or Maintenance Labor Agreements in California for the proposed project.

Pursuant to Public Utilities Code 399.13(a)(8)(A), the City will also 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."[4] To the extent that the City procures RPS resources through solicitations where qualitative factors are considered, impact on disadvantaged communities will be considered. Such 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 evaluation of responses submitted through CalChoice's 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), LCE may adapt these considerations over time.

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

As described in CalChoice's *Supplier Diversity 2023 Annual Report and 2024 Annual Plan*, the CalChoice members are assessing steps to improve the participation of small, local, and diverse business enterprises, including those owned by women, minorities, disabled veterans, and members of the LGBTQ community ("WMDVLGBTBE"), in CalChoice's renewable solicitations.[5] The City seeks to achieve this goal while complying with the competing requirements of California Proposition 209. In future RPS Procurement Plans, the City, through CalChoice, will consider revising its solicitation protocols, bid evaluation, and supplier selection consistent with this assessment.

Consistent with the direction in the ACR, LCE has provided a copy of its most recent solicitation materials to Commission Energy Division staff. LCE's most recent solicitation information is available at the following website: https://californiachoiceenergyauthority.com/rfps.

### X.C. LCBF Criteria

The Least-Cost Best Fit methodologies approved by the Commission pursuant to D.04-07-029, D.11-04-030, D.12-11-016, D.14-11-042, and D.16-12-044 are expressly only directly applicable to IOUs and the Commission does not have jurisdiction over the solicitation protocols of CCAs. However, consistent with Section 399.13(a)(9),[6] LCE considers best-fit attributes that support a balanced mix of resources to help minimize overall renewable energy procurement costs while generally supporting electric grid reliability.

In particular, the City anticipates considering "least cost best fit" ("LCBF") during the evaluation of responses to its future renewable energy solicitation(s). From the City's

[5] *See* CalChoice *Supplier Diversity 2023 Annual Report and 2024 Annual Plan*, March 1, 2024, at 11.
[6] Cal. Pub. Util. Code § 399.13(a)(9) ("In soliciting and procuring eligible renewable energy resources, each retail seller shall consider the best-fit attributes of resource types that ensure a balanced resource mix to maintain the reliability of the electrical grid.").

perspective, use of the term "costs" should appropriately include considerations beyond the basic price of renewable energy. More specifically, costs should include a broad range of considerations, such as: (1) reputational damage resulting from failure to meet state-mandated and/or internally established renewable energy procurement targets; (2) compliance penalties resulting from failed project development efforts or delivery shortfalls; (3) administrative complexities related to dealing with inexperienced suppliers (such as prolonged contract negotiation processes and uncertainties related to project milestone timing and achievement); and (4) impacts to planning certainty resulting from higher risk projects. These factors, as well as various others, will be considered by the City as components of its cost evaluation processes, which may lead to the selection of offers that are not necessarily the lowest cost option(s), as expressed on a dollar-per-MWh basis. With regard to "fit", this aspect of a prospective supply opportunity has as much to do with compatibility (between the City and its suppliers) and alignment with key local objectives as it does with balancing customer usage and expected project deliveries, particularly when considering long-term contracting opportunities that will necessitate a constructive working relationship over a period of ten years or more. The City also interprets the term "fit" to mean the general suitableness of a project opportunity in promoting grid reliability – while the City has no explicit operational or maintenance responsibilities related to the local distribution system serving its customers or the bulk electric system at large, it is aware of the profound importance of supporting grid reliability through its procurement processes. With this in mind, the City will make best efforts to balance the demands of California's rigorous RPS compliance mandates with its interest in promoting such reliability. This is no small task, and the City expects that considerations related to grid reliability will be incorporated at each stage of its planning and procurement processes but also

acknowledges that the full scope of its RPS contract/resource portfolio (including related impacts to grid reliability) will significantly evolve throughout the organizations operating history. Over time, the City expects to thoughtfully assemble a diversified portfolio of RPS contracts/resources that will not only contribute to the City's achievement of applicable compliance mandates but also to improved stability and reliability of California's electric system. As such, the City's LCBF methodology will consider a broad range of components, including those previously noted, balancing a variety of pertinent considerations at the time each renewable purchase opportunity is being evaluated.

Additionally, the requirement of Section 399.13(a)(9) to give preference to renewable projects located in certain communities is expressly only applicable to "electrical corporations" and is not mandatory for CCAs.[7] However, the City 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 as well as the need to bring economic benefits to communities with high levels of poverty and unemployment. Consistent with this recognition, the City will consider the manner in which air pollution may be impacted during its renewable energy solicitation process(es) and related project selection.

**XI. Safety Considerations**

LCE holds safety as a top priority. Since LCE does not own, operate, or control generation facilities, LCE's procurement of renewable resources does not present any unique

[7] Cal. Pub. Util. Code § 399.13(a)(8)(1) ("In soliciting and procuring eligible renewable energy resources for California-based projects, each electrical corporation shall give preference to renewable energy projects that provide environmental and economic benefits to communities afflicted with poverty or high unemployment, or that suffer from high emission levels of toxic air contaminants, criteria air pollutants, and greenhouse gases.").

safety risks. This Section describes how LCE has taken actions to reduce the safety risks posed by its renewable resource portfolio and how LCE supports the state's environmental, safety, and energy policy goals.

As the City pursues future renewable energy purchases, it will consider requiring verbiage addressing adherence (of the seller/project operator) to prudent electrical practices and applicable safety requirements, including compliance with laws and regulations relating to safety. During future contracting efforts, the City will perform an assessment of the supplier's willingness to include such provisions as well as any related impacts to pricing/cost – the City is aware that requesting more stringent processes and/or requirements may trigger requested price increases by the seller/supplier. To the extent that product pricing would meaningfully increase due to the inclusion of such provisions, the City would need to evaluate budgetary impacts and other risks before proceeding. The City is hopeful that most suppliers will be agreeable to the inclusion of such provisions and will be diligent in requesting such language in its future contracts. In addition, LCE has provided additional information below on its existing safety practices.

### XI.1. Wildfire Risks and Vegetation Management

In its existing contracts with renewable generating facilities, LCE ensures that the facility operator complies with all relevant safety requirements associated with the maintenance and operation of the facility. In these agreements, LCE includes contract provisions that require the counter party to operate and maintain the facility in compliance with all relevant laws and prudent operating practices.

At this point in time, the City has yet to adopt specific procurement policies or preferences focused on the acquisition of forest biomass resources. The City is aware of the

mitigating impacts that biomass generators, which use forestry waste as feedstock, may have on wildfire risk and will consider the adoption of a related procurement policy in the future.

In future solicitations, LCE will identify whether any of the bidding generating facilities are located within Tier 2 or Tier 3 of the Commission's Fire-Threat Map. When evaluating executing a contract with a facility located in Tier 2 or Tier 3, LCE will consider requiring the seller to demonstrate that it taken adequate precautions associated with the facility's elevated risks, including specific wildfire prevention and safety measures for any construction, operation, and maintenance activities.

### XI.2. Decommissioning Facilities

To date, the City has not developed any plans or requirements related to the disposition of generating facilities following completion of applicable delivery terms. LCE's contracts with renewable generating facilities generally require that the facility is operated in compliance with all applicable laws and prudent operating practices. The City assumes this broad terminology generally entails the safe disposition of assets following expiration of their useful life (to the extent that the useful life of such facilities expires at the same time as the noted delivery term involving LCE). This noted, the duration of LCE's renewable energy supply commitments is expected to be shorter than the useful life of most, if not all, facilities place under contract, so it will be impractical for LCE to monitor such activities after its relationship with suppliers has ended.

For future contract negotiations, LCE will evaluate requiring the seller to provide a project safety plan or a similar type of reporting document, which will include information on procedures for identifying and remediating safety hazards, as well as describing any relevant requirements (such as those associated with the permitting of the facility) for the

decommissioning of the facility.

### XI.3. Climate Change Adaptation

The City has not adopted procurement policies or preferences relating specifically to climate change risks. In future solicitations, the City will consider developing additional bid evaluation criteria based on climate change risks factors, including but not limited to risks associated with facilities located in regions that are forecasted to be impacted by higher instances of sea-level rise, flooding, wildfires, and/or elevated temperatures.

### XI.4. Impacts During Public Safety Power Shut-off (PSPS) Events

While the City does not have any specific predictions regarding future impacts related to PSPS events, it is likely that a PSPS event impacting the City would marginally reduce retail electric sales for CCA customers and, as a result, would generate a very small increase in the proportionate share of renewable energy supply accruing to the City (if renewable supply agreements continue to perform as expected during such events).

LCE is in the process of evaluating the impact of prior PSPS events on the renewable generating facilities to quantify the amount of generation that was lost due to the facility being taken offline by a PSPS event. LCE is also assessing the risk of the loss of future generation associated with PSPS events both for facilities already online and for facilities under development. LCE's assessment to date is that the total quantity of any PSPS-related reductions in RPS-eligible generation for the facilities in LCE's portfolio have been minimal and are offset by the reduction in retail sales that result from PSPS events that directly impact the City's customers. The material impact to the City's renewable energy planning process or related performance metrics is extremely low.

### XI.5. Biomass Procurement

While LCE has no specific biases (for or against) biomass resources, the prospect of procuring such resources will be dependent upon offers received during future solicitation processes. In fact, the City has already entered into a long-term PCC3 supply agreement, which will be sourced from existing biomass facilities located within California – the RPS procurement opportunity was selected in consideration of: 1) product availability and the suitability of such product in the City's overall RPS supply portfolio; 2) cost-effectiveness; and 3) volumetric predictability (due to the anticipated baseload delivery profile associated with biomass generating resources). To date, biomass procurement opportunities have been limited, relative to other available renewable energy procurement opportunities, and have been comparatively costly (often 150-200% of pricing levels associated with other renewable generating technologies). To the extent that future biomass offers/proposals are competitive (with similar offers received from other resource types) and/or in the event the City adopts policies explicitly supporting the acquisition of biomass energy resources, it will consider further inclusion of biomass energy within its future renewable energy supply portfolio.

## XII. Consideration of Price Adjustment Mechanisms

In the future, and consistent with SB 350 and SB 100, LCE will review the prospect of incorporating price adjustments in contracts with online dates more than 24 months after the date of contract execution. As noted in the ACR, such price adjustments could include price indexing to key components or to the Consumer Price Index.

## XIII. Curtailment Frequency, Forecasting, Costs

This Section responds to the questions presented in Section 6.13 of the ACR[8] and describes the City's strategies and experience so far in managing LCE's exposure to negative pricing events, overgeneration, and economic curtailment for LCE's region and portfolio of renewable resources.

### XIII.1. Factors Having the Most Impact on the Projected Increases in Incidences of Overgeneration and Negative Market Price Hours

LCE continues to learn a great deal about the California energy market, including information and considerations related to energy curtailment, potential cost impacts, contracting considerations and other concerns. The following represents LCE's understanding of this topic, which may impact future procurement processes.

Due in large part to the rapid increase in the amount of wind and solar generating facilities that have been brought online throughout the western United States, the California Independent System Operator's ("CAISO") balancing authority area has experienced an increasing frequency and magnitude of curtailment and negative pricing events. The U.S. Energy Information Agency ("EIA") estimates that as of April 2024, California has 37,507 MW of installed solar capacity, with 17,193 MW of that total being behind-the meter solar.[9] The CAISO reports that it has approximately 19,628 MW of utility-scale solar and 8,352 MW of utility-scale wind currently installed within its balancing authority area.[10] This increased capacity results in discrete periods where the generation from wind and solar resources exceeds the total load in the CAISO during those periods. The monthly maximum load served by wind

[8] ACR at 33-34.
[9] EIA, Electric Power Monthly, *Table 6.2.B. Net Summer Capacity Using Primarily Renewable Energy Sources and by State, April 2024 and 2023 (Megawatts)*, available at: https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=table_6_02_b.
[10] CAISO, What are we doing to green the grid?, updated July 10, 2024, *at* .

and solar in the CAISO has averaged 78.6% over the past 3 years (May 2021 to May 2024), and in April of 2024 the monthly maximum load served by wind and solar was 109.6 percent,[11] while the maximum 5-minute amount of all renewables serving load was 117.3 percent.[12] To address the resulting instances of over-supply, the amount of curtailment of wind and solar in the CAISO has significantly increased each year from 2015 through 2024, totaling 187,000 MWh in 2015, 308,000 MWh in 2016, 379,510 MWh in 2017, 461,043 MWh in 2018, 965,241 MWh in 2019, 1,586,500 MWh in 2020, 1,504,803 in 2021, 2,449,248 in 2022 and 2,659,527 in 2023.[13] As of July 5, 2024, the total curtailment of solar and wind year to date is 2,860,176 MWh.[14]Curtailment is typically the highest during the months of March, April, and May when hydroelectric generation is historically at its highest. Curtailment levels and percentages for the CAISO, as well as an analysis of negative prices and forecasted curtailments from those negative prices, were presented above in Section VII.

In the CAISO energy markets, much of the curtailment of renewable resources is achieved through the market process because of renewable energy resources voluntarily submitting bids into the energy markets, which cause them to shut down when market conditions create low energy prices. Because of this structure, the curtailment data provided will also be indicative of when negative prices occur. The City recognizes this connection and thus the analysis above in Section VII as to why curtailments are not expected to increase as they have over the past few years will apply to negative prices in a similar manner to curtailments. This has influenced CalChoice's ten-year negative price forecast, which mirrors the frequency of

[11] CAISO, Monthly Renewables Performance Report, May 2024, *available at* *https://www.caiso.com/documents/monthly-renewables-performance-report-may-2024.html*.
[12] CAISO, Monthly Renewables Performance Report, April 2024, *available at* .
[13] CAISO, Managing Oversupply, Wind and Solar Curtailment Totals, updated May 9, 2023, *available at* *http://www.caiso.com/informed/Pages/ManagingOversupply.aspx*.
[14] CAISO, Wind and Solar Curtailment, July 5, 2024, *available at* .

historical renewable energy curtailments. As explained elsewhere in this document, the City has taken steps through its contracting to reduce its risk exposure to low prices and curtailment of renewable resources. LCE will continue to monitor this situation to the extent such circumstances are likely to impact contract administration and/or future procurement activities. If prospective renewable generating opportunities are located in areas that are prone to frequent instances of negative market pricing, LCE will be sure to evaluate such data to better understand prospective financial impacts and/or pursue contractual pricing structures that will insulate the CCA program from such risks.

### XIII.2. Written Description of Quantitative Analysis of Forecast of the Number of Hours Per Year of Negative Market Pricing for the Next 10 Years

The City is still in the process of studying how a negative pricing forecast can and should be developed to inform its resource planning process. Considering ongoing changes to the City's RPS supply portfolio and the increased exposure to negative price risk brought about by certain generator-specific purchase commitments, it has evaluated this risk through the assessment presented above in Section VII. The completion of a negative pricing analysis that is not related to specific project operation may provide little if any value or insight to the City at this point in time. However, as described later in this section, the City has worked with CalChoice to construct an initial negative price study to demonstrate the manner in which such issues may be evaluated in the future.

The City has analyzed historical curtailment activities in CAISO and has presented the results of such analysis elsewhere in this Plan, the City has also studied the occurrence of negative prices in CAISO markets since January 2017 (through June 2024). Negative prices in the CAISO market can significantly impact the cost and overall value of renewable generating assets, particularly if such generating resources are reflected in supply agreements that apply

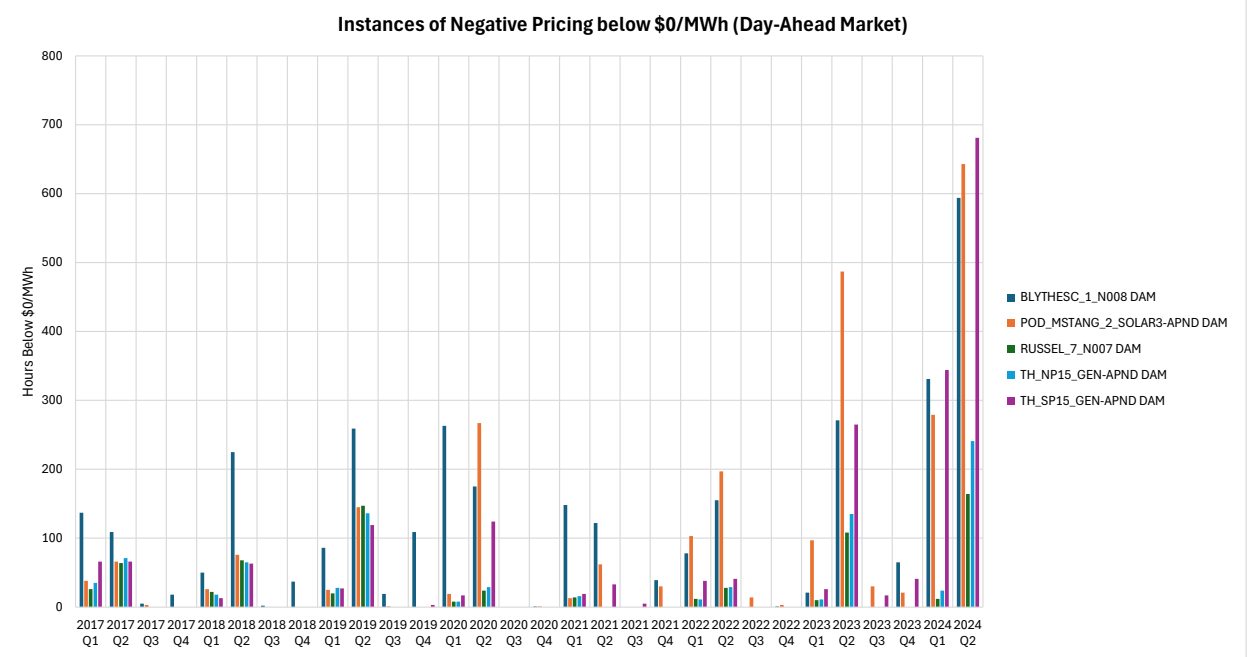
market-based settlement mechanisms to determine charges assessed to the buyer. With this in mind, it is important that the City consider the siting of prospective renewable generating resources to avoid taking on unforeseen costs or lower than expected delivered energy quantities, which may result from economic curtailments. For this reason, the City has endeavored to quantify the potential occurrence of negative pricing events within certain areas of the state that are known to include significant levels of renewable generating capacity. While the City has limited exposure to such risks (by virtue of its current RPS contract portfolio), it is expected to experience exposure to negative price risk as its RPS contract portfolio evolves with time. To improve its understanding of these risks, the City has assembled a historic negative pricing analysis. The City notes that moderately negative prices – between zero and negative $40/MWh – are not expected to trigger meaningful economic curtailments in the near term, as the cost of procuring replacement RPS supply under index-plus pricing arrangements would likely be equivalent in cost; in such instances, there would be little sense for the City to curtail renewable energy deliveries.

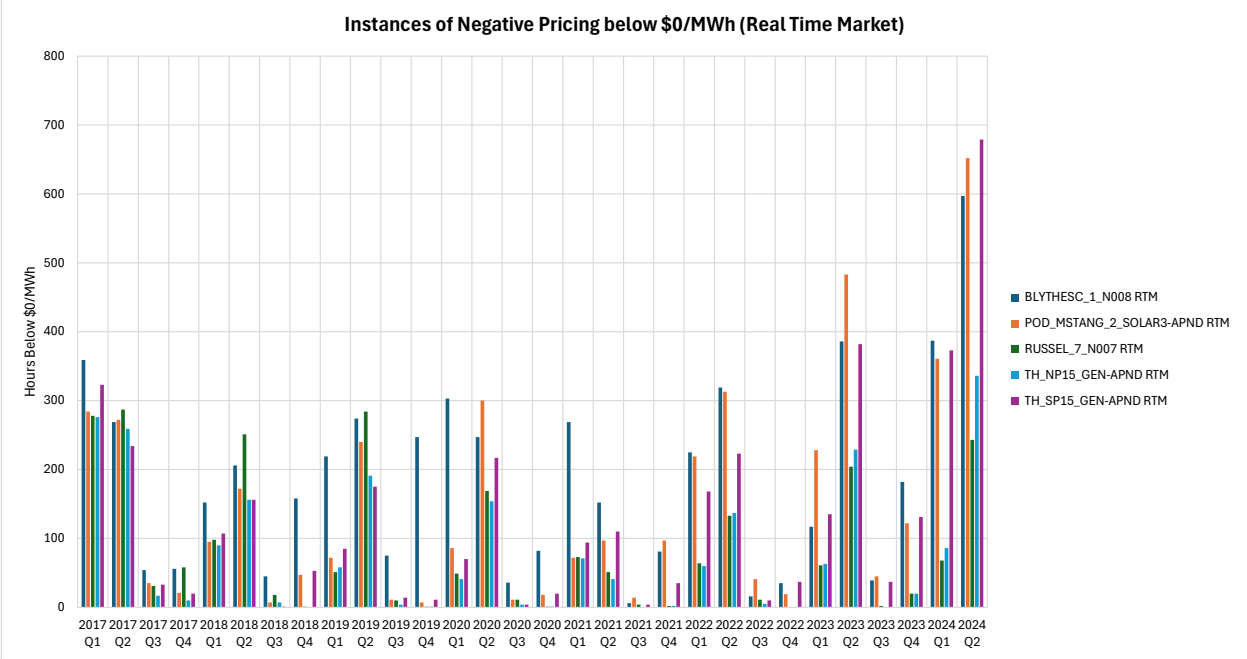
Below are several charts which illustrate the number of potential historic curtailment events that could have been triggered when nodal prices fell below zero and also negative $40/MWh (CalChoice's prescribed pricing benchmark that was applied to identify potential economic curtailment incidents under this methodology). Estimates for the real-time market 2,860,176 MWh.[15]

When reviewing the information in these charts, it is clear that instances of negative pricing are trending up in recent years with the largest frequency of "curtailable hours" occurring in Q2 of 2024 (a time of year when curtailments generally tend to increase due to moderate

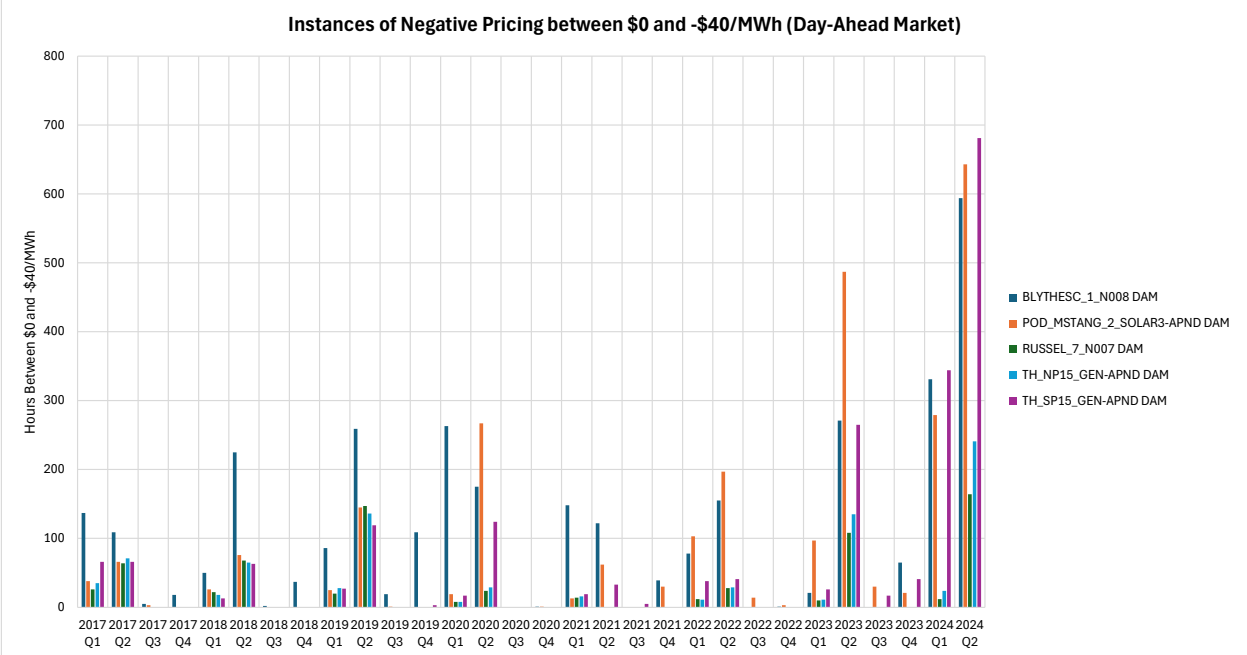
[15] CAISO, Wind and Solar Curtailment, July 5, 2024, *available at* https://www.caiso.com/documents/wind-solar-real-time-dispatch-curtailment-report-jul-05-2024.pdf.

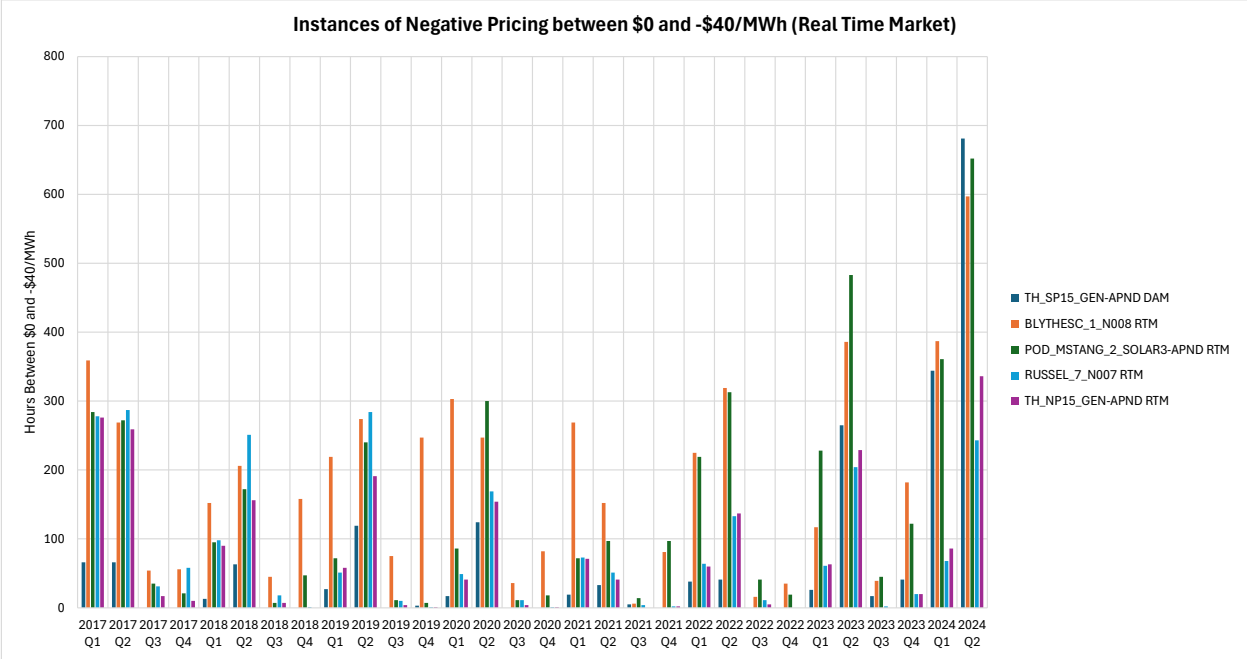
temperature, prevalent hydro runoff and relative strong production from photovoltaic solar resources). While ongoing infrastructure buildout, including increased levels of battery storage may mitigate these trends over time, the City is aware that its own renewable energy contracting efforts should emphasize the inclusion of storage to insulate the organization from such risks. The City observes that it may not be possible to avoid all possible negative price (and potential curtailment) risk, but the inclusion of battery storage infrastructure when contracting for renewables will be an important mitigating factor. The following charts summarize instances of negative pricing (below zero $/MWh) in the day-ahead and real time markets since 2017.





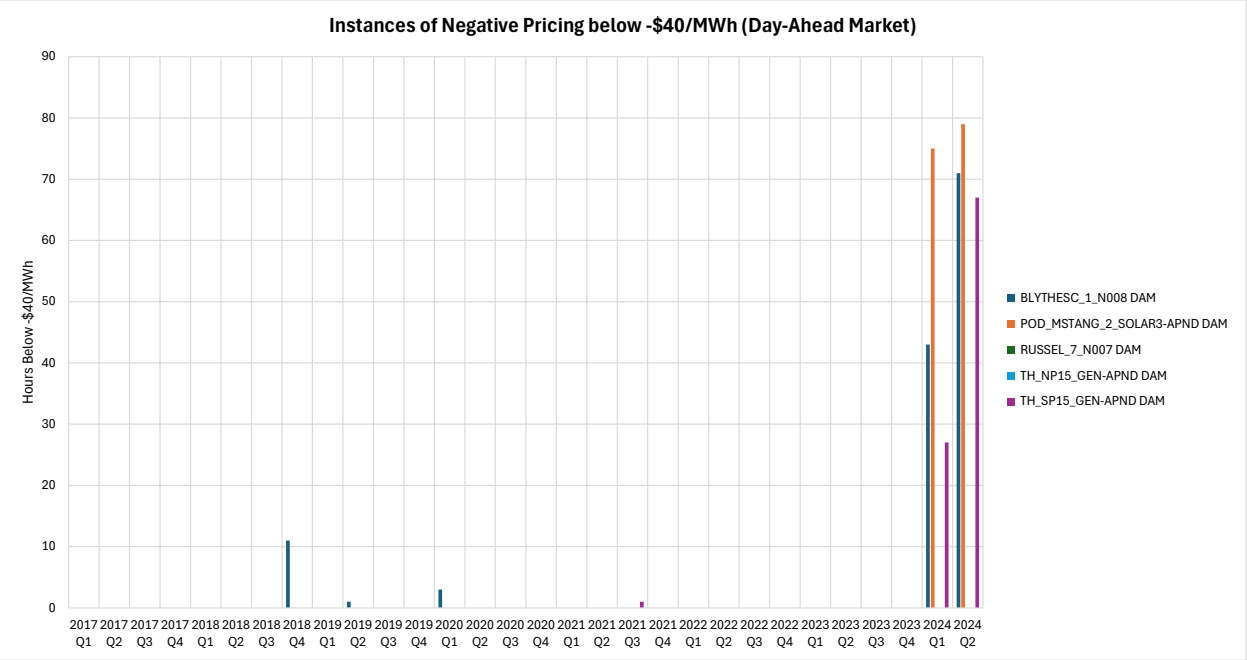

The following charts illustrate instances of negative pricing between zero and negative $40/MWh. When comparing this data to incidents of negative pricing in the previous charts (below zero $/MWh), the numbers are very similar, which suggests that instances of pricing below negative $40/MWh remain fairly rare. This observation suggests that the City's prospective bid floor of negative $40/MWh would protect the organization from most instances in which curtailment could occur – if ongoing negative pricing trends do not meaningfully differ from this historical data set, the City should be at limited risk of losing significant levels of RPS production through its curtailment decisions in the future.

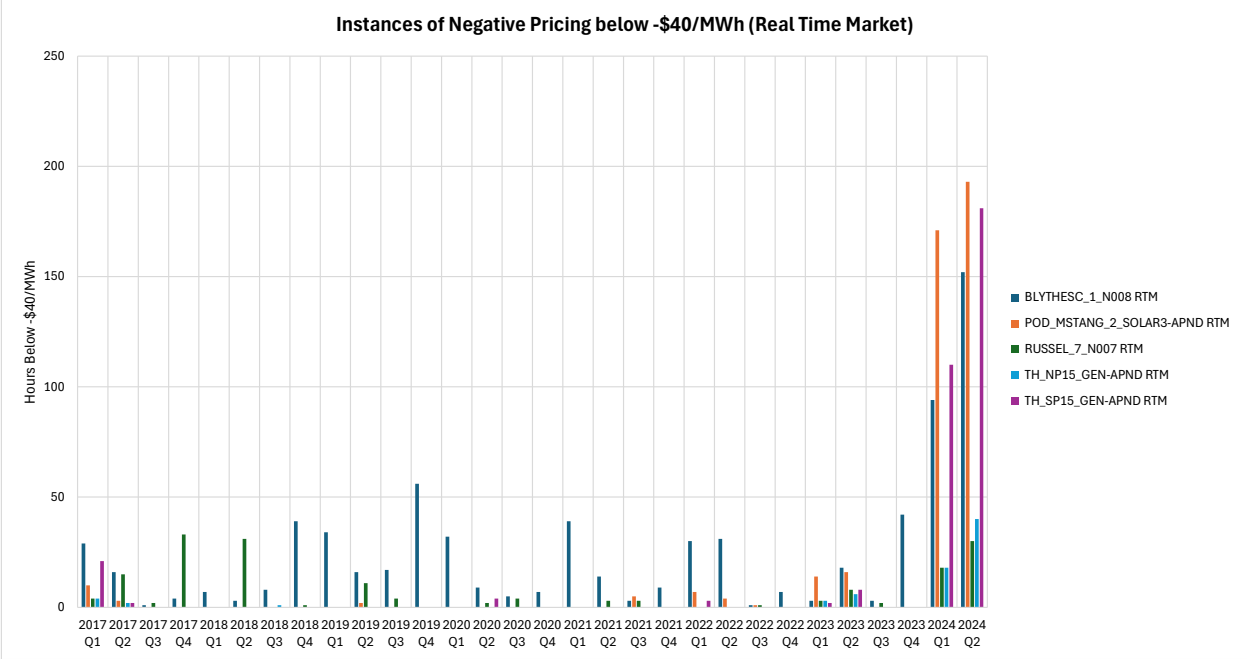



Finally, the City evaluated instances of historical negative pricing below negative $40/MWh and identified very limited instances in which such circumstances occurred. Until 2024, negative pricing below negative $40/MWh was a very rare occurrence in both the day-ahead and real time markets. It seems reasonable to assume that ongoing renewable infrastructure buildout, coupled with relatively strong hydro runoff in early 2024 has contributed

to this transition, but the City will continue to monitor these circumstances over time to determine if this trend holds or if instances of negative pricing subside. Regardless, the subject of negative pricing is an important topic for the City, and the organization will continue to monitor related market trends to determine if further action, including resource planning and procurement adaptations impacting RPS supply, may be necessary to protect against such risks (if recent trends continue into the future).





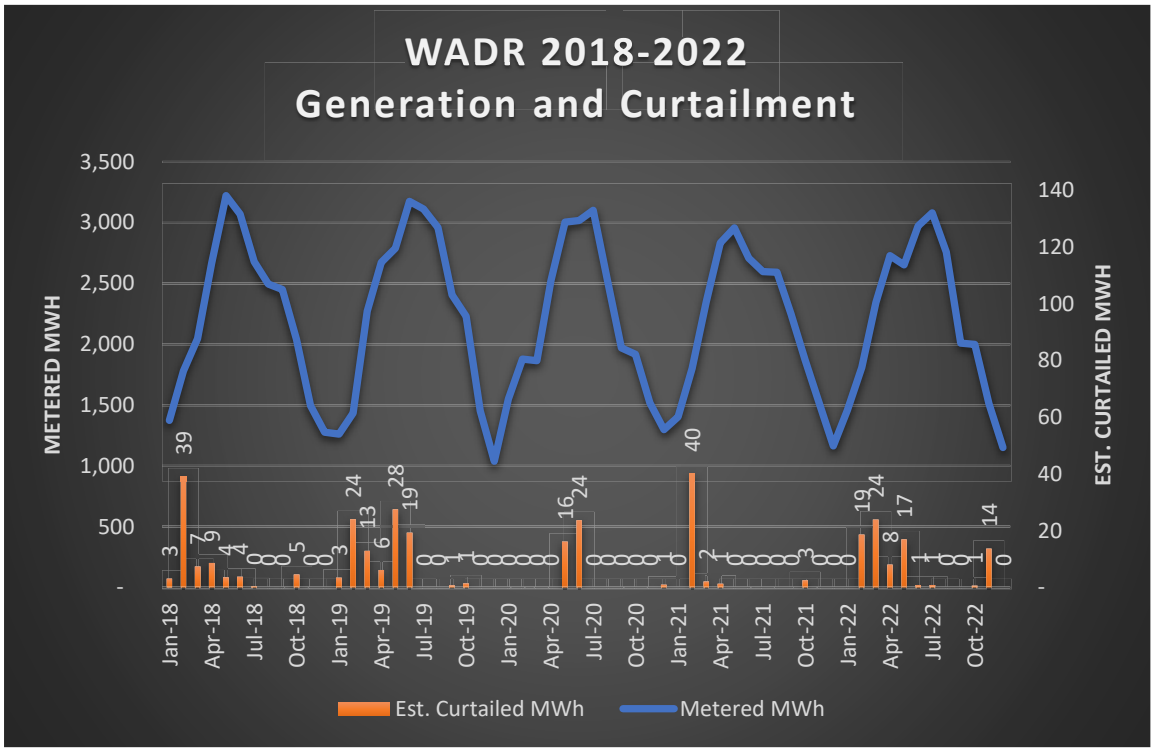

### XIII.3. Experience, to Date, With Managing Exposure to Negative Market Prices and/or Lessons Learned from Other Retail Sellers in California

Based on LCE's existing renewable energy supply agreements, historical renewable energy deliveries have utilized index-plus pricing structures and fixed/firm volumetric commitments. As such, the City has not been exposed to negative price risk (related to its renewable supply portfolio) and has not needed to manage exposure to negative market prices. This approach to renewable energy contracting was deliberate, allowing the City to build operational experience and knowledge regarding California's energy market before pursuing contract structures that required a deeper understanding of market tendencies, increased data analysis and more intensive coordination with renewable energy suppliers.

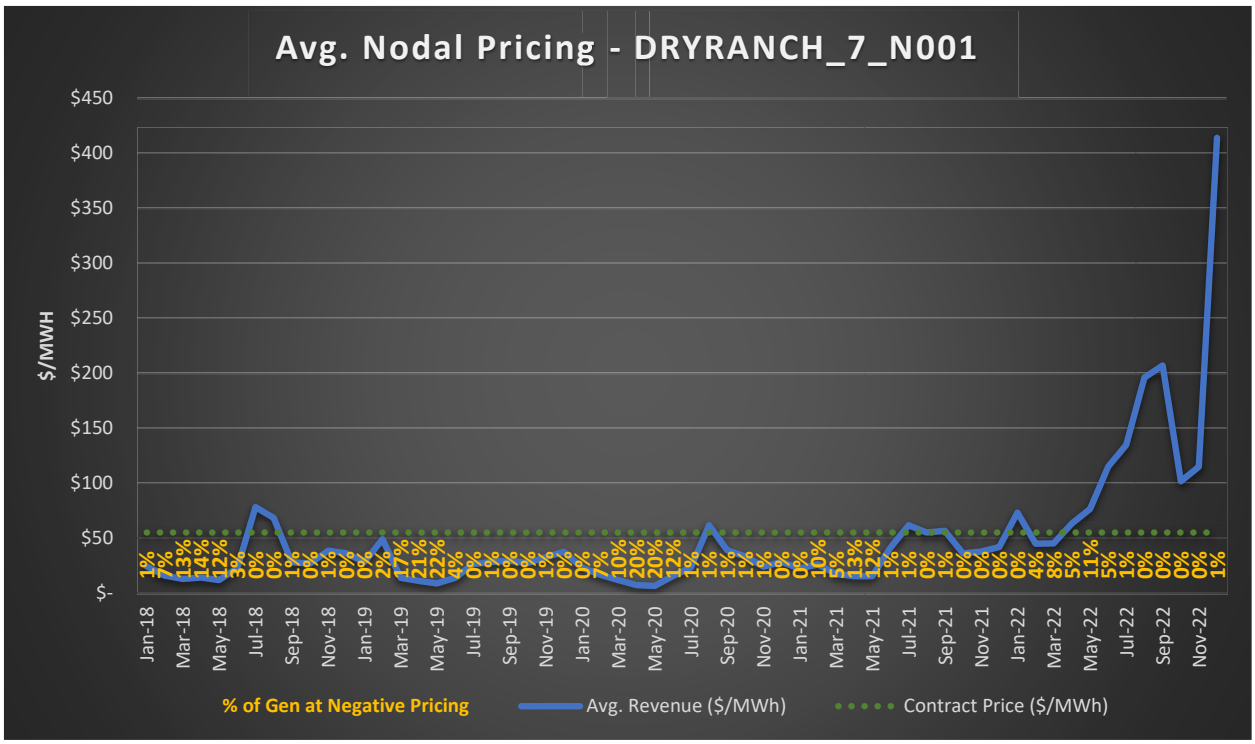
However, LCE's first long-term power purchase agreement with the 10 MW Western Antelope Dry Ranch ("WADR") photovoltaic solar facility, which is located in Lancaster, is a longer-standing supply agreement settled on a "fixed price" or "aggregated price" basis, but it has only experienced limited instances of negative pricing at certain points throughout its

operating history. Recent data suggests that such instances are more frequent during the Spring season (months of February, March, April and May) and, consistent with LCE's observations regarding curtailment reflected in Section XIII.1, indicates that suppressed pricing generally results from relatively strong solar production throughout the region, coupled with comparatively low energy usage (when moderate seasonal temperatures prevail). To the extent that California experiences strong regional hydroelectric production/imports, negative pricing pressures may be exacerbated.

Based on 2018, 2019, 2020, 2021, and 2022 historical data, CalChoice observed that negative prices have impacted facility generation during 2% to 22% of solar-producing hours during the months of February, March, April, and May. Negative pricing in other months is far less prevalent, affecting facility generation on a limited basis (occurring during zero to 10% of hours in which facility generation has occurred). In terms of curtailment, LCE has developed a bidding strategy with its scheduling coordinator that limits exposure to negative pricing based on a pre-determined bid floor (meaning, a pre-determined negative price, below which facility generation would be curtailed), but LCE has only experienced facility curtailments totaling 337 MWh over the aforementioned five-year period, or 0.3% of total potential energy production (which approximates 132,000 MWh during this same five-year period). The impacts of curtailment/negative pricing costs incurred by LCE have been similarly limited. The following chart indicates total monthly generation from the WADR facility during the 2018, 2019, 2020, 2021, and 2022 calendar years as well as estimated monthly curtailed MWh (note the differences in scale reflected on each axis).




Adjacent nodal pricing also remains relatively strong, despite substantial solar generation within the region. Average energy pricing at the DRYRANCH_7_N001 node, the basis for WADR energy settlements, continues to show limited incidents of negative pricing. Over the five-year period reflected in CalChoice's analysis, average revenues collected by LCE for WADR-generated electricity are $47.16/MWh, an average that was bolstered by incredibly high prices at the aforementioned node during 2022. The following chart reflects average nodal pricing during the 2018, 2019, 2020, 2021, and 2022 calendar years as well as the percentage of WADR generation occurring during periods of negative pricing.




Over time, CalChoice will continue monitoring pricing and curtailment data to determine if regional grid conditions are materially changing – five years is a relatively brief period of time for such an analysis, particularly when the composition of resources interconnected to California's bulk electric system continues to undergo significant changes, and while LCE finds this information to be helpful, it is also mindful that such changes may substantially alter the trajectory of pricing data at this node. To the extent that negative prices become more severe (meaning, more deeply negative), LCE may adapt its bidding strategy to limit potential financial impacts to its CCA program. Curtailed energy volumes will also be monitored over time, but based on MWh curtailed to date, LCE does not foresee any imminent concerns impacting its achievement of compliance with RPS procurement mandates.

With this information in mind, LCE has incurred limited exposure to negative price risk (related to its renewable supply portfolio) and, as a result, has been limited in its need to manage exposure to negative market prices. This approach to renewable energy contracting was

deliberate, allowing LCE to build operational experience and knowledge regarding California's energy market before pursuing contract structures that required a deeper understanding of market tendencies, increased data analysis and more intensive coordination with renewable energy suppliers. When LCE pursues future supply agreements that could expose the organization to such risk, and before such procurement opportunities are executed, LCE will consult with CalChoice to perform pertinent analyses that will be intended to bound prospective exposure (in terms of frequency and potential overall cost) related to negative pricing; such analyses will be updated over time, similar to the manner in which the aforementioned WADR analysis has been updated within successive planning documents.

Based on information/data derived through such analyses, LCE will coordinate with CalChoice and its scheduling coordinator to develop a bidding strategy, if deemed necessary, that would create desired limitations to such negative price risk, acknowledging however, that any curtailment decisions (related to negative pricing) would reduce the expected quantity of renewable energy to be received from such contracts – such circumstances could necessitate supplemental procurement, if meaningful delivery shortfalls occur.

As for lessons learned from other retail sellers, the City is aware that negative pricing can be particularly punitive in certain geographic regions, so it will need to carefully evaluate any new renewable supply opportunities in consideration of such risk or pursue contract structures – the City is aware that pursuing firm/fixed delivery quantities, as opposed to as-available supply arrangements, can meaningfully reduce, if not entirely eliminate, concerns related to negative pricing (and related decisions to pursue curtailment). If the City gains additional insight based on future experience/exposure to negative pricing, it will share such information, if required to do so, in a future RPS Procurement Plan.

### XIII.4. Direct Costs Incurred, to Date, for Incidences of Overgeneration and Associated Negative Market Prices

As described above, the index-plus structures of LCE's existing contracts have prevented LCE from incurring any meaningful direct costs related to overgeneration or negative pricing. As LCE enters into contracts with different structures and monitors existing contracts that rely on market-based settlement mechanisms, LCE will update its RPS Procurement Plan to reflect any associated change relating to costs associated with overgeneration and negative pricing.

### XIII.5. An Overall Strategy for Managing the Overall Cost Impact of Increasing Incidences of Overgeneration and Negative Market Prices

While curtailment is a viable renewable integration strategy that may be more cost-effective than other options, there are potential negative consequences from excessive curtailment. Curtailment of solar and wind represents a lost opportunity to generate zero GHG emitting electricity, and excessive curtailment could impact the ability of the state to meet its environmental and energy policy goals. Additionally, these over-supply situations expose ratepayers to increased costs because their load serving entities must either economically curtail the generating resource (and often pay for the electricity that was not generated) or generate power and be exposed to negative prices. Because these conditions are largely driven by state policy, it is appropriate to consider macro-level mitigation measures through CAISO initiatives, Commission rulemakings, and possibly even legislation. There are a number of measures and policies that have already been implemented or are currently being pursued that will have significant impacts on how substantial curtailment will be in the future. This includes the expansion of the Energy Imbalance Market, improvements to the CAISO market design and structure, enhanced forecasting capabilities, time of use rates, improved electric vehicle charging functionalities, and smart deployment of distributed energy resources. The Commission's Integrated Resource Plan ("IRP") proceeding will be an appropriate forum to measure the impact

of these policies and the effect that they will have on future curtailment. These new measures will need to be modeled and incorporated into forecasts of future curtailment.

LCE will consider the impact of curtailment and negative pricing on its individual portfolio and will factor potential curtailment into its long-term planning, as appropriate. Due to the difficulty in accurately forecasting curtailment, LCE will review available historical data on curtailment (such as the data on curtailments in the CAISO present above in Section VII) and negative pricing within regions where LCE may contract for generating resources. As the City is now taking additional renewable energy deliveries under more recently executed supply agreements, it will more closely monitor historical market prices in proximity to related generating facilities – if instances of negative pricing become more prevalent in the months leading up to delivery commencement, , LCE may impute risk-related adjustments in its planning assumptions. In future contracting efforts, LCE will remain aware of curtailment risk (stemming from instances of over-generation and related negative pricing) and will evaluate pertinent data to better understand the potential frequency of curtailment activities, including an assessment of historical pricing related to the point(s) of delivery that will be applicable in such supply agreements. While LCE has not yet developed an individualized forecast of future curtailment for any particular project opportunity or technology type, LCE will factor potential curtailment into its minimum margin of procurement (described in Section IX) and may also factor this consideration in future iterations of its Risk Assessment (Section VII). To the extent that LCE is engaged in renewable supply agreements which include curtailment provisions, it will take actions to limit the impacts of curtailment on its ratepayers and progress in meeting pertinent compliance mandates. During its current and future renewable contracting efforts, LCE will continue to pursue contract terms that recognize and limit the potential financial impacts of

negative pricing and provide LCE greater flexibility to direct economic curtailment, if this becomes necessary.

### XIII.6. Contract Terms Included in RPS Contracts Intended to Reduce the Likelihood of Curtailment or Protect Against Negative Prices.

As discussed previously, LCE has incorporated terms in its contracts to limit consequences from negative prices. These include contracts with fixed quantities of RPS resources, and contracts with penalties for failure to deliver required amounts of RPS energy. An example of such language included in LCE contracts is:

> **Guaranteed Energy Production**: Seller shall be required to deliver to Buyer no less than the Guaranteed Energy Production (as defined below) in each two (2) Contract Year block (as opposed to rolling) period during the Delivery Term ("**Performance Measurement Period**"). "**Guaranteed Energy Production**" means an amount of Product, as measured in MWh, equal to one-hundred fifty percent (150% of the average Expected Energy (as set forth on the Cover Sheet) for each Performance Measurement Period. The calculation will be performed once each Performance Measurement Period, beginning with the second anniversary of the Delivery Term Start Date.

## XIV. Cost Quantification

LCE has provided an updated Cost Quantification Table as Appendix E, which reflects renewable energy supply commitments that have been executed since submittal of its prior RPS Procurement Plan. Pursuant to direction in the ACR, the City has entered pertinent data in Appendix E.

## XV. Conformance with IRP Proceeding

The resources identified in this RPS Procurement Plan are consistent with the resources identified in LCE's most recent IRP, which was approved by LCE's governing board and

provided to the Commission for certification on November 1, 2022, which was subsequently updated on October 16, 2023. As required by the ACR,[16] LCE includes the following table that describes how LCE's RPS Procurement Plan conforms with the determinations made in the IRP Proceedings (R.16-02-007 and R.20-05-003). To the extent there are changes related to the IRP that would impact information reflected in this table or elsewhere in this RPS Procurement Plan, the City will further describe such items in a subsequent planning document, as appropriate.

| IRP Section Subsection | RPS Alignment in IRP | |
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| **III. Study Results**<br>**A. Conforming and Alternative Portfolios** | Retail sellers should explain how the RPS resources they plan to procure, outlined in their RPS Plan, will align with each of their Conforming Portfolios being developed in their IRP Plans for Commission approval and certification. This should include: | |
| | *1. Existing RPS resources that the retail seller owns or contracts.*<br>*2. Existing RPS resources that the retail seller plans to contract with in the future.*<br>*3. New RPS resources that the retail seller plans to invest in.*<br>*4. New and existing resources that will be used to meet Mid-Term Reliability obligations adopted in D.21-06-035 and the supplemental procurement ordered in D.23-02-040.* | As part of its 2022 IRP filing, LCE submitted two Preferred Conforming Portfolios that achieve its proportional share of both the 30 and 25 MMT GHG targets. LCE continues to build out its portfolio of long-term RPS supply contracts that will contribute to the achievement of its IRP-based planning goals. The new and existing resources noted below reflect those that LCE intends to contract with over time. Such procurement efforts are expected to contribute to the achievement of relevant GHG targets as well as RPS procurement requirements, including the 65% long-term contracting requirement.<br>Description of Conforming Portfolios:<br>• 30 MMT Conforming Portfolio: Portfolio that achieves LCE's proportional share of a 30 MMT statewide GHG target.<br>• This portfolio includes the following new and existing RPS resources as well as other resources required to achieve assigned emission and reliability metrics:<br>o Battery Storage (MWh Energy Capacity, |

[16] ACR at 30-33.

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| | | Under Development): 18.77<br>o Battery Storage (MWh Energy Capacity, Owned or Contracted): 7.83<br>o Battery Storage (MWh Energy Capacity, Planned New): 306.4<br>o Battery Storage (MWh Energy Capacity, Under Review): 60<br>o Biomass (GWh, Planned Existing): 5<br>o Geothermal (GWh, Owned or Contracted): 0.99<br>o Geothermal (GWh, Planned Existing): 25<br>o Geothermal (GWh, Planned New): 65.7<br>o Geothermal (GWh, Under Review): 24.01<br>o Hybrid or Paired Solar and Battery (GWh, Planned New): 56<br>o Large Hydro (GWh, Owned or Contracted): 13.27<br>o Large Hydro (GWh, Planned Existing): 108<br>o Small Hydro (GWh, Owned or Contracted): 0.5<br>o Small Hydro (GWh, Planned Existing): 10<br>o Solar Existing California (GWh, Owned or Contracted): 75.33<br>o Solar Existing California (GWh, Planned Existing): 30<br>o Wind Existing California (GWh, Owned or Contracted): 69.11<br>o Wind Existing California (GWh, Planned Existing): 40<br>o Wind New Mexico (GWh, Owned or Contracted): 15.3<br>o Wind Wyoming (GWh, Planned New): 35<br>o Wind Offshore Morro Bay (GWh, Planned New): 65<br>• In addition, LCE's 30 MMT Conforming Portfolio includes the following the capacity-only resources:<br>o CAM, Demand Response and Energy Efficiency Allocations: 38 MW<br>o Existing natural gas, baseload, and other (planned procurement): 290 MW |

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| | | • 25 MMT Conforming Portfolio: Portfolio that achieves LCE's proportional share of a 25 MMT statewide GHG target.<br>• This portfolio includes the following new and existing RPS resources:<br>o Battery Storage (MWh Energy Capacity, Under Development): 18.77<br>o Battery Storage (MWh Energy Capacity, Owned or Contracted): 7.83<br>o Battery Storage (MWh Energy Capacity, Planned New): 306.4<br>o Battery Storage (MWh Energy Capacity, Under Review): 60<br>o Biomass (GWh, Planned Existing): 5<br>o Geothermal (GWh, Owned or Contracted): 0.99<br>o Geothermal (GWh, Planned Existing): 25<br>o Geothermal (GWh, Planned New): 65.7<br>o Geothermal (GWh, Under Review): 24.01<br>o Hybrid or Paired Solar and Battery (GWh, Planned New): 56<br>o Large Hydro (GWh, Owned or Contracted): 13.27<br>o Large Hydro (GWh, Planned Existing): 121<br>o Small Hydro (GWh, Owned or Contracted): 0.5<br>o Small Hydro (GWh, Planned Existing): 10<br>o Solar Existing California (GWh, Owned or Contracted): 75.33<br>o Solar Existing California (GWh, Planned Existing): 30<br>o Wind Existing California (GWh, Owned or Contracted): 69.11<br>o Wind Existing California (GWh, Planned Existing): 40<br>o Wind New Mexico (GWh, Owned or Contracted): 15.3<br>o Wind Wyoming (GWh, Planned New): 35<br>o Wind Offshore Morro Bay (GWh, Planned New): 65 |

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| | | • In addition, LCE's 25 MMT Conforming Portfolio includes the following the capacity-only resources:<br>  o CAM, Demand Response and Energy Efficiency Allocations: 38 MW<br>  o Existing natural gas, baseload, and other (planned procurement): 288 MW<br><br>Meeting the Mid-Term Reliability obligations from D.21-06-035:<br><br>LCE participated in the Joint CalChoice, Desert Community Energy Authority, and Clean Energy Alliance Mid-Term Reliability Request for Proposals. One contract was successfully secured with a new-build geothermal resource, which is expected to achieve commercial operation in mid-2026 (additional detail provided above); in addition to its prior contracting efforts, the City, through its relationship with CalChoice, recently participated in a solicitation for long-term RPS supply and incremental resource adequacy capacity (to fulfill certain portions of its assigned mid-term reliability and supplemental mid-term reliability purchase obligations), which was issued on March 27, 2023. As a result of this solicitation process, CalChoice identified two short-listed respondents. One respondent proposed a renewable energy plus storage (co-located) project; the other proposed a stand-alone resource adequacy project. Because negotiations remain ongoing with each short-listed respondent, no further details can be provided at this time. When negotiations are complete, CalChoice will advise the Commission of pertinent details and planning impacts associated with any executed supply agreements stemming from this process. If successfully completed, both projects would promote LCE's achievement of specified incremental capacity procurement mandates. |

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| **IV. Action Plan**<br>**A. Proposed Activities** | Retail sellers should describe how they propose to use RPS resources to implement both Conforming Portfolios. Narratives should include: | |
| | *1. Proposed RPS procurement activities as required by Commission decision or mandated procurement.*<br>*2. Procurement plans, potential barriers, and resource viability for each new RPS resource identified.* | To ensure compliance with its GHG and RPS targets, LCE plans to substantially rely on GHG-free and RPS-eligible resources while contributing to statewide reliability requirements and responsibly managing overall portfolio costs. This approach is generally consistent between the 30 MMT Conforming Portfolio and 25 MMT Conforming Portfolio in the 2022 IRP Plan.<br>In its IRP, LCE also established that its planned incremental capacity exceeds its pro rata share of capacity that may be needed for replacement of Diablo Canyon. These resources are further described in LCE's 2022 IRP.<br>LCE expects to administer future solicitation processes to fill outstanding resource needs required to meet portfolio specifications reflected in its 30 MMT and 25 MMT Preferred Conforming Portfolio as well as ongoing RPS procurement obligations. As noted elsewhere in this RPS Procurement Plan, LCE will update the Commission with regard to the outcomes of its current long-term RPS contract negotiations in a future iteration of this planning process.<br>LCE does not foresee any barriers or viability concerns related to its requisite resource commitments but will advise the Commission if this impression changes over time. |
| **IV. Action Plan**<br>**B. Procurement Activities** | The retail seller should describe the solicitation strategies for the RPS resources that will be included in both Conforming Portfolios. This description should include: | |
| | *1. The type of solicitation.*<br>*2. The timeline for each solicitation.*<br>*3. Desired online dates.*<br>*4. Other relevant procurement planning information, such as* | LCE may participate in distinct solicitations for different products (for example: specific renewable energy products, generating resources or storage infrastructure), or it may choose to solicit multiple products in the same solicitation. These solicitations will be competitive and may be similar to LCE's initial long-term RPS solicitation, which was previously described in this RPS Procurement |

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| | *solicitation goals and objectives.* | Plan.<br>LCE will administer future solicitations, as necessary, to promote consistency with the resource development plan identified in the IRP (for purposes of promoting achievement with state-mandated RPS targets as well as LCE's internal targets). As noted above, LCE anticipates administering upcoming solicitation activities consistent with the process and timeline described in Section II.<br>During administration of future procurement processes, LCE will utilize the evaluative and contract management processes (further described above in Section X and elsewhere in this Plan) to promote timely project completion and improve planning certainty. |
| **IV. Action Plan**<br>**C. Potential Barriers** | Retail sellers should provide a summary of the potential barriers to implementing both Conforming Portfolios as they relate to RPS resources. The section should include: | |
| | *1. Key market, regulatory, financial, or other resource viability barriers or risks associated with the RPS resources coming online in retail sellers' Preferred Portfolios.*<br>*2. Key risks associated with the potential retirement of existing RPS resources on which the retail seller intends to rely in the future.* | LCE does not expect any procurement barriers to impede its future contracting for new renewable energy resources, but notes that even though a balanced, diverse RPS portfolio is desirable, the limited resource availability and lead time required for some technology types may necessitate planning flexibility. LCE also observes that the rigorous demands of California's RPS program, particularly the currently effect 65 percent long-term contracting mandate, may necessitate contracting activities with a portfolio of resources that will evolve considerably over time – more specifically, LCE may need to pursue initial supply commitments with a portfolio of resources that does not exactly reflect its eventual/ideal characteristics related resource diversity and/or reliability. Pursuit of such portfolio characteristics will continue to be a work in progress during LCE's first several procurement efforts and will evolve throughout the upcoming planning period.<br>The key risk affecting LCE's achievement of the 30 MMT and 25 MMT Preferred Conforming IRP Portfolios in the 2022 IRP Plan – while LCE intends to contract with highly experienced and |

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| | | qualified project developers (when new-build resources are deemed necessary), there is always a limited risk of project failure.<br><br>In consideration of LCE's existing RPS contract negotiation processes that will support achievement of the Preferred Conforming IRP Portfolios, it does not have any substantive concerns regarding its ability to achieve levels of renewable energy procurement that will be required to satisfy pertinent RPS mandates or IRP targets. If such concerns happen to change in the future, LCE will accordingly notify the Commission in a subsequent iteration of this planning process. |

**XVI. Impact of Transmission and Interconnection Delays**

SB 1174 (stats. 2022, ch. 229) requires electrical corporations that own transmission lines to report to the Commission on the development of transmission and interconnection facilities necessary to provide transmission deliverability for renewable energy and/or energy storage facilities that have executed interconnection agreements. The City is not subject to the requirements of SB 1174 and does not own any transmission lines. Accordingly, the City has not included a Transmission/Interconnection Delay Data Report as an attachment to this RPS Procurement Plan.

Dated: January 23, 2025

Respectfully submitted,

*/s/ Trolis Niebla*

Trolis Niebla
City Manager
City of Lancaster
44933 Fern Avenue
Lancaster, CA 93534
(661) 723–6010
tniebla@cityoflancasterca.org

# Appendix A

## Redlined Version of Final 2024 RPS Plan

**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

| | | |
|---|---|---|
| Order Instituting Rulemaking to Continue Implementation and Administration, and Consider Further Development, of California Renewables Portfolio Standard Program. | ) ) ) ) ) | Rulemaking 24-01-017 |

# FINAL~~DRAFT~~ 2024 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN OF LANCASTER CHOICE ENERGY


Trolis Niebla~~Jason Caudle~~
City Manager
City of Lancaster
44933 Fern Avenue
Lancaster, CA 93534
(661) 723–6010
tniebla~~jcaudle~~@cityoflancasterca.org


Dated: January 23, 2025~~July 19, 2024~~

**BEFORE THE PUBLIC UTILITIES COMMISSION**
**OF THE STATE OF CALIFORNIA**

| | | |
|---|---|---|
| Order Instituting Rulemaking to Continue Implementation and Administration, and Consider Further Development, of California Renewables Portfolio Standard Program. | ) ) ) ) ) | Rulemaking 24-01-017 |

# FINAL~~DRAFT~~ 2024 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN OF LANCASTER CHOICE ENERGY

In accordance with the California Public Utilities Commission's ("Commission") May 17, 2024 *Assigned Commissioner and Assigned Administrative Law Judges' Ruling Identifying Issues and Schedule of Review for 2024 Renewables Portfolio Standard Procurement Plans* ("ACR") and the *Decision on 2024 Renewables Portfolio Standard Procurement Plans* ("D.24-12-035"), the City of Lancaster, doing business as Lancaster Choice Energy ("LCE" or "the City"), hereby submits this Final~~Draft~~ 2024 Renewables Portfolio Standard Procurement Plan ("RPS Procurement Plan"). As directed by the ACR, this RPS Procurement Plan includes responses for the issues expressed in ACR sections 6.1-6.17.

## I. Summary of Major Changes to RPS Plan

This Section describes the most significant changes between LCE's Draft 2023 (which was accepted and deemed as final by Decision 23-12-008) RPS Procurement Plan and its Final~~Draft~~ 2024 RPS Procurement Plan. A redline of this Final~~Draft~~ 2024 RPS Plan against LCE's Draft 2024~~2023~~ RPS Plan is included as Appendix A. The table below provides a list of key differences between the 2023 and 2024 RPS Procurement Plans:

| Plan Reference | Plan Section | Summary/Justification of Change |
|---|---|---|
| RPS Procurement Plan: Section II | Executive Summary | Updated to reflect the changes made throughout other sections of this RPS Plan. |

| | | |
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| RPS Procurement Plan: Section IV | Portfolio Optimization | Updated to describe ongoing RPS planning and procurement efforts impacting portfolio optimization through 2034. Updated to describe procurement undertaken to comply with D.21-06-035 and D.23-02-040, the Mid-Term Procurement Decisions. |
| RPS Procurement Plan: Section IV.B.1 | Long-term Procurement | Updated long-term RPS procurement discussion. |
| RPS Procurement Plan: Section VI | Potential Compliance Delays | Updated narrative to incorporate changing renewable energy procurement marketplace. |
| RPS Procurement Plan: Section VII | Risk Assessment | Updated risk assessment and related narrative to address extended planning period (through 2034) and outstanding RPS deliveries between 2024 and 2034 |
| RPS Procurement Plan: Section VIII | Renewable Net Short Calculation | Updated Appendix C to reflect recent procurement efforts and prescribed changes to the planning period, which now extends through 2034. |
| RPS Procurement Plan: Section XIV | Cost Quantification | Updated Appendix E to reflect recent procurement efforts and prescribed changes to the planning period, which now extends through 2034. |

**II. Executive Summary Key Issues**

LCE is a CCA organization serving residential and business customers located within the City of Lancaster. LCE initiated customer service in May 2015 and currently serves approximately 73,000 retail electric accounts, which are expected to consume about 620 gigawatt hours per year. To streamline CCA program administration and create procedural efficiencies through jointly administered planning and procurement functions, LCE continues to engage CalChoice for requisite planning and procurement support. This is particularly helpful when addressing the requirements of California's RPS compliance program. To facilitate the achievement of applicable mandates, LCE regularly participates in jointly administered

solicitations for long-term RPS-eligible renewable energy supply and other products, as administered by CalChoice.

The City, through its relationship with CalChoice, participated in a solicitation for long-term RPS supply and incremental resource adequacy capacity (to fulfill certain portions of its assigned mid-term reliability and supplemental mid-term reliability purchase obligations). This solicitation, which was issued in cooperation with Clean Energy Alliance ("CEA"), was distributed on January 17, 2024 with responses due February 21, 2024. After evaluating numerous responses, CalChoice and CEA identified two well-suited long-term renewable energy supply opportunities, one of which will also support compliance with LCE's incremental capacity procurement obligations. Both suppliers will be entering into exclusive negotiating agreements with CalChoice and CEA. During the 90-day period established by these agreements, CalChoice, CEA and these suppliers will be working to develop, approve and execute agreements that will augment LCE's long-term renewable energy supply in 2026 and beyond.

Irrespective of the outcomes related to these negotiating efforts, the City's current contractual commitments are expected to address the CCA's long-term RPS needs through Compliance Period 6. In addition to these long-term supply agreements, LCE has also executed numerous short-term RPS supply commitments to address ongoing RPS compliance mandates and related planning reserves. LCE has also entered into certain surplus RPS sales agreements to balance procured volumes with procurement targets of the CCA program – it is important to note that certain RPS sales agreements reflect "seller's option" volumetric ranges, which allow LCE to sell zero volume, some volume or the maximum sales volume reflected in such agreements; this flexibility allows LCE to more closely balance RPS supply with actual portfolio needs. The

results of these sales are reflected in LCE's Renewable Net Short template, Appendix C. LCE anticipates participating in various other solicitation efforts (administered by CalChoice and, possibly, the IOUs). These procurement processes are expected to address LCE's remaining RPS open positions (both short- and long-term, as appropriate) and the increasing renewable procurement targets reflected in California's RPS Program. LCE's RPS open positions will be periodically evaluated – such evaluations will generally occur: 1) prior to solicitation administration (for purposes of quantifying renewable energy volumes to be addressed in the upcoming solicitation); 2) after bid receipt (to determine potential impacts to LCE's RPS open position); 3) after execution of any RPS contract (to quantify expected reductions to LCE's open position associated with successful procurement activities); 4) throughout each operating year as the relationship between actual and expected renewable energy deliveries is periodically monitored relative to retail electricity sales (to determine if additional procurement or surplus sales may be necessary to promote portfolio balance); and 5) following any updates to LCE's quantitative risk analysis, as further described in Section VII. This process will remain ongoing and will be utilized to guide LCE participation in future renewable energy procurement processes. Based on the results of this ongoing exercise, LCE may evaluate the need to adjust renewable energy planning reserves, the manner in which project development and performance risk will be assessed during LCE's ongoing renewable energy procurement efforts, and various other considerations related to the RPS Program as further described in this RPS Procurement Plan.

Since joining CalChoice, LCE has increased its access to support resources, analytical insight and operational expertise as well as increased coordination with a community of member organizations, which are able to create efficiencies through the administration of joint

procurement processes and other inter-agency coordination. Going forward, joint procurement efforts, including participation in various CalChoice renewable energy RFPs, will enhance LCE's ability to efficiently and cost effectively identify and procure necessary renewable energy supply. LCE also believes that joint procurement activity will provide access to larger, lower-priced procurement opportunities that would otherwise be unavailable to its individual CCA Program (due to sizing limitations), resulting in reduced overall renewable energy costs for its customers as well as general improvements in procedural efficiency.

Considering the success of its ongoing renewable energy procurement efforts, the City is confident in its ability to identify sufficient levels of renewable energy supply and will work diligently to secure such supply during ongoing operations. Expected VAMO deliveries from SCE have solidified LCE's achievement of applicable long-term RPS contracting mandates through Compliance Period 6. The City does not take for granted that proposed RPS procurement/project opportunities will result in finalized/executed contractual commitments. With this in mind, LCE is prepared to exhibit flexibility in administering future RPS solicitations and will continue to engage the market until contractual commitments closely align with or exceed anticipated resource needs.

**III. Compliance with Recent Legislation and Impact of Regulatory Changes**

This RPS Procurement Plan addresses the requirements of all relevant legislation and the Commission's regulatory framework. This Section describes the relevant statutory and regulatory requirements and how this RPS Procurement Plan demonstrates that LCE meets these requirements.

Senate Bill ("SB") 100 was signed by the Governor on September 10, 2018 and became effective on January 1, 2019. SB 100 increased the RPS procurement requirements to 44 percent

by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. On June 6, 2018, the Commission issued D.18-05-026, which implemented changes made by SB 350 (2015) to the RPS waiver process and reaffirmed the existing RPS penalty scheme. In July of 2018, the Commission instituted Rulemaking 18-07-003 to continue the implementation of the RPS. On June 28, 2019, the Commission issued D.19-06-023, which continues to use a straight-line method to calculate compliance period procurement quantity requirements.

The current RPS procurement targets are incorporated into LCE's Renewable Net Short Calculation Table as described in Section VIII below and attached as Appendix C. LCE's current and planned procurement, as reflected in LCE's Renewable Net Short Calculation Table and described in Sections IV and V, is expected to be sufficient to exceed these targets, including a minimum margin of over-procurement based on LCE's quantitative risk assessment, as further described in Sections VII and IX. LCE is also positioned to meet the SB 350 long-term procurement requirement, as described in Sections V and VII.

SB 901, signed by Governor Brown on September 21, 2018, added Public Utilities Code section 8388, which requires any IOU, publicly owned electric utility, or CCA with a biomass contract meeting certain requirements to seek to amend the contract to extend the expiration date to be five years later than the expiration date that was operative as of 2018. LCE does not have a contract with a biomass facility that is covered by Public Utilities Code section 8388.

SB 255 (stats. 2020, ch. 407) amended Public Utilities Code section 366.2 to require certain CCAs to annually submit to the Commission the following: (i) a plan for "increasing procurement from small, local, and diverse business enterprises in all categories, including, but not limited to, renewable energy, energy storage system, and smart grid projects," and (ii) a report regarding the CCA's "procurement from women, minority, disabled veteran, and LGBT

business enterprises in all categories, including, but not limited to, renewable energy, energy storage system, and smart grid projects." CalChoice submitted the *Supplier Diversity 2023 Annual Report and 2024 Annual Plan* on behalf of its members, including the City, in compliance with SB 255 and General Order 156.[1]

Assembly Bill ("AB") 843, signed by the Governor on September 23, 2021, authorizes CCAs to participate in the Bioenergy Market Adjusting Tariff ("BioMAT") program if capacity is available under the program cap. The City does not have any immediate plans to participate in the BioMAT program but may reevaluate this decision as part of its future planning for additional renewable procurement, which may also focus on locally-situated biomass and/or biofuel resources outside of the BioMAT program.

SB 1020, referred to as "Clean Energy, Jobs, and Affordability Action of 2022," sets a statewide goal of one hundred percent zero-carbon electricity by 2045. SB 1020 also directed every state agency to ensure that zero carbon resources and eligible renewable energy resources supply one hundred percent of the electricity procured on its behalf by 2035. These state agencies are specifically directed to meet this 2035 target through any or all of the following options: (i) installing behind the meter resources, (ii) procuring zero-carbon or eligible renewable energy resources through the POU, IOU, CCA, or ESP that is providing retail service to that state agency, or (iii) participating in a qualifying voluntary shared renewable or green pricing program. Based on anticipated service delivery to state agency accounts located within the City, CalChoice and the City are in the early stages of assessing annual energy loads (to determine

[1] *See* CalChoice *Supplier Diversity 2023 Annual Report and 2024 Annual Plan*, March 1, 2024, available at: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/bco/cca-procurement-reports/2022/calchoice-supplier-diversity-2022-report-and-2023-plan.pdf?sc_lang=en&hash=7A7C416435B3E04B343D7A5A11F6EF70https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/bco/cca-procurement-reports/2023/calchoice-supplier-diversity-2023-report-and-2024-plan_final-1.pdf.

potential, incremental procurement impacts) and coordinating with those customers to determine how such state agencies plan to meet SB 1020 obligations. To the extent that CalChoice receives feedback during such coordinative efforts, it will provide a more detailed update on the impacts of SB 1020 to its RPS procurement planning efforts in a subsequent RPS Procurement Plan. LCE may also consider enhancements to its 100% renewable service offering to provide portfolio characteristics that will enable state agency accounts to meet the requirements of SB 1020. Such changes would likely follow coordination with any state agencies served by the City.

## IV. Assessment of RPS Portfolio Supplies and Demand

### IV.A. Portfolio Supply and Demand

As previously noted, LCE is California's third operating CCA program, which began serving customers in May 2015. LCE currently provides retail electric generation service to approximately 73,000 customer accounts, which are expected to consume about 620 gigawatt hours per year. LCE has now entered into several power purchase agreements (both short- and long-term) with various suppliers, certain of which have contributed to LCE's RPS compliance during early-stage CCA operation as well as in the near-term planning horizon. Over the mid- and longer-term planning horizons, LCE expects that the contract stemming from CalChoice's previously administered long-term renewable energy solicitations will contribute to LCE meeting pertinent RPS compliance obligations during Compliance Periods 4, 5 and 6 (and beyond). LCE also expects that further solicitations will be necessary over time, as additional supply commitments will be required to fulfill the City's growing renewable energy requirements that are expected to increase in concert with California's escalating RPS mandate. The exact portfolio characteristics selected may vary depending on direction received from the City's Governing Council, advice provided by CalChoice, renewable resource availability, procurement

costs, legislative and policy changes, technological improvements, preferences of the City, or other developments, such as the procurement ordered in Mid-Term Reliability decision, D.21-06-035 and, later, D.23-02-040. The City's RPS supply portfolio is expected to become increasingly diverse in the future as the City continues to pursue additional RPS supply agreements and awaits deliveries from its new geothermal facility, which is expected to commence operations in mid-2026. LCE examines and estimates supply and customer demand and will structure its future procurement efforts to balance customer demand with requisite resource commitments. This examination of customer demand and other market developments will help reduce costs and assist in meeting planned procurement for the period addressed in this RPS Procurement Plan.

LCE continues to monitor regulatory proceedings related to direct access and will evaluate the impacts of any developments that may result in future adjustments to LCE's load forecast and related renewable energy procurement obligations, which would be expected to decrease if LCE loads migrate to direct access providers – in theory, such a change would push LCE's renewable energy content higher unless surplus supply was sold to other market participants; this would be similar to the impacts experienced by California's IOUs as a result of ongoing CCA implementations and expansions. To the extent that any adjustments to the City's retail sales forecast are made, it will reflect such adjustments in a subsequent RPS Procurement Plan. Through the ongoing evaluation of customer demand and other market developments, LCE hopes to influence reduced overall costs while meeting planned procurement objectives for the period addressed in this RPS Procurement Plan.

### IV.A.1. Portfolio Optimization

The City's goal is to meet its locally adopted policies and statewide mandates in a manner that is both cost effective and that supports a well-balanced resource portfolio. Portfolio optimization strategies can help reduce costs and should facilitate alignment of the City's portfolio of resources with its forecasted load needs. In order to support this goal, the City regularly considers the following strategies:

**Joint Solicitations:** Joint solicitations can expand the procurement opportunities available to a CCA and may provide better contract terms. The City participated in the CalChoice, Desert Community Energy Authority and Clean Energy Alliance solicitation for Mid-Term Reliability (MTR) resources and long-term renewable energy supply as well as the March 2023 solicitation administered by CalChoice to address additional long-term RPS supply and incremental capacity. The City is also participating in CalChoice's January 2024 solicitation (focused on long-term renewable energy and incremental capacity products) – this multi-participant process has transitioned to contract negotiations with two prospective suppliers. Going forward, the City intends to continue participating in such joint solicitation activities as part of the shared services arrangement that it has in place with CalChoice. LCE is also evaluating and participating in joint solicitations through CalChoice with other CCAs.

**Purchases from Retail Sellers:** Purchases of RPS-eligible renewable energy (via resale) from other retail sellers can provide a cost-effective way of meeting short term resource needs or filling in gaps in procurement while long term projects are under development. The City will evaluate solicitations offered by other retail sellers on-case by-case bases.

**Sales Solicitations:** As the City's portfolio of resources continues to develop, it will also consider offering solicitations of sales to other retail sellers, if the disposition of surplus is deemed desirable or necessary to balance larger than anticipated reserve positions that may be accrued during each compliance period.

**Optimizing Existing Procurement:** As the City considers its long-term resource needs beyond 2030, it may evaluate options in its future power purchase agreements to increase the output of existing generating facilities through technological upgrades or by adding new capacity to an existing generator. Expanding existing facilities may provide additional generation at reduced costs with a lower risks of project failure because the need for distribution system upgrades and permitting may be reduced – such opportunities may be developed, as deemed appropriate by the City.

On June 24, 2021, the Commission adopted D.21-06-035, which directed all retail sellers to procure 11,500 MW of new net qualifying capacity ("NQC") between 2023 and 2025, and

requiring the procurement of long-lead-time ("LLT") resources by 2026. Each retail seller was assigned a specific procurement responsibility based on its share of peak demand. The City's total obligation is 37 MW, which must include minimum amounts of procurement from certain subcategories: (1) 8 MW from firm, zero-emitting capacity by 2025; (2) 3 MW from long duration storage resources by 2026; and (3) 3 MW from firm, non-fossil fueled baseload generating resources by 2026. On February 23, 2023, the Commission adopted D.23-02-040, which directs load serving entities to procure 2,000 MW of additional new NQC in both 2026 and 2027 and extends the deadline for LLT resources from 2026 to 2028. Similar to D.21-06-035, each load serving entity's portion of this total supplemental capacity procurement obligation is allocated based on load share. The City's supplemental capacity procurement obligation, as directed in D.23-02-040 is 13 MW, comprised of 7 MW that must be online in 2026; another 7 MW must be online in 2027.

LCE already entered into various supply agreements that will address portions of its noted incremental capacity procurement obligations and is currently finalizing a term sheet with a supplier that is expected to develop a new solar-plus-battery storage project that will further the City's progress in meeting these procurement obligations. Certain portions of this procurement requirement were also addressed through the request for proposals conducted jointly by CalChoice, Desert Community Energy Authority, and Clean Energy Alliance, described elsewhere in this RPS Procurement Plan, which resulted in the execution of a supply agreement that will meet portions of its incremental capacity procurement obligations as well as additional RPS supply. As described above, the City also participated in CalChoice's March 2023 solicitation for long-term RPS supply and incremental capacity. Two projects were shortlisted, but CalChoice was unable to reach agreement on pertinent commercial terms, so discussions

were discontinued. If the City does meet additional incremental capacity procurement obligations with renewable generation, then that generation would augment the planning and forecasting described in this RPS Procurement Plan. The City will try to optimize its RPS procurement with the requirements from D.21-06-035 and D.23-02-040 and hopes to harmonize these procurements to reduce costs, improve resource dispatchability (to better align renewable resource delivery profiles to the City's load profile) and avoid any need to over-procure resources.

### IV.B. Responsive to Local and Regional Policies

(i) Responsiveness to Policies of LCE's City Council

LCE is a local governmental agency that is subject to the control of the City's Governing Council and is directly accountable to the community that it serves. LCE generally supports and is committed to meeting the state's GHG reduction and renewable procurement goals. Furthermore, and as noted elsewhere in this RPS Procurement Plan, the City has adopted near-term renewable portfolio targets that closely align with RPS mandates. As a result, the City's supply portfolio will be structured to achieve and sustain RPS compliance at the lowest possible cost (which is a key objective of the City's CCA program).

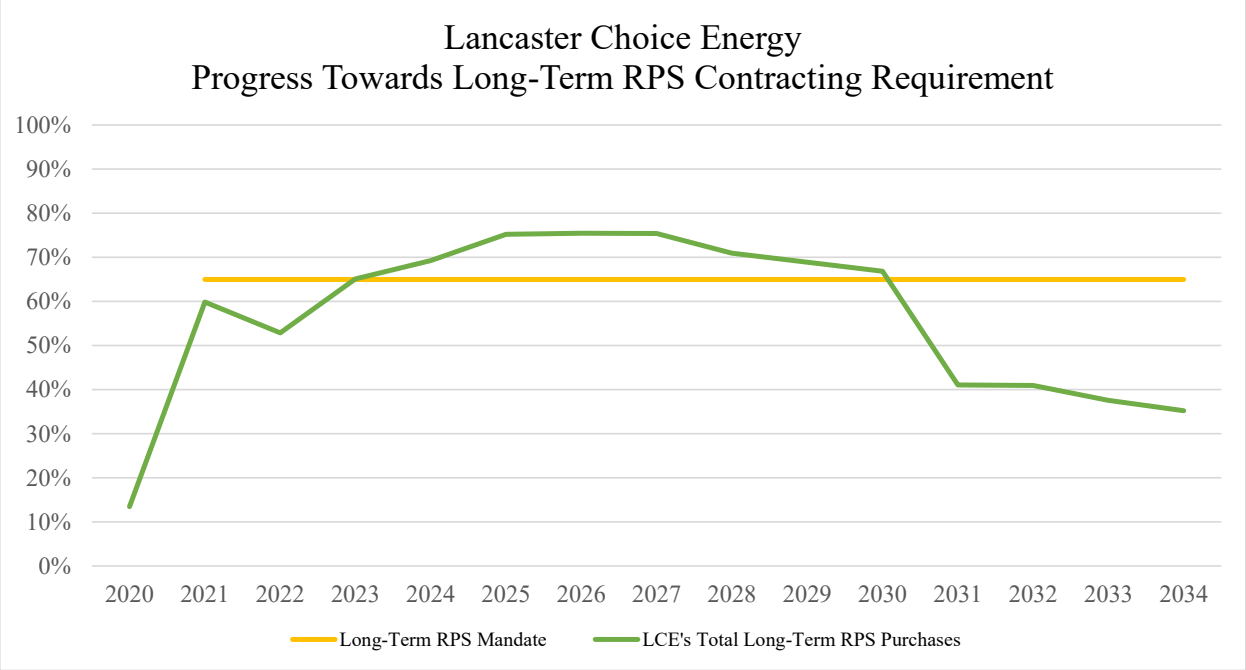
(ii) Responsiveness to Regional Policies

As noted in the previous sub-section, the City is overseen by its governing council, which also serves as the governing board/authority for its CCA program. As such, the policies adopted by the City's governing council (related to CCA operations) serve as guiding directives for CCA operations, including the determination of renewable energy planning targets that are intended to support local policy preferences.

### IV.B.1. Long-term Procurement

Pursuant to Public Utilities Code section 399.13(b), from 2021 onwards, 65 percent of mandated renewable energy purchases must be sourced from contracts of 10 years or more. The City has been conscientiously planning and procuring to meet this requirement and is making good progress in this regard. Based on existing procurement efforts, the City believes it has already purchased sufficient long-term supply to ensure that it stays at or above the 65% long-term procurement mandate through Compliance Period 6.

The following chart reflects the City's current and anticipated progress in meeting California's long-term RPS contracting mandate in Compliance Period 4 and beyond.




The City is also providing the following tabular breakout focused on expected long-term RPS compliance to facilitate the Commission's review of information reflected in the chart above.

| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Projected Retail Sales (MWh)** | 615,369 | 616,864 | 596,907 | 599,891 | 602,891 | 605,905 | 608,935 | 611,979 | 615,039 | 618,114 | 621,205 | 624,311 | 627,432 | 627,432 |
| **Total RPS Procurement Requirement (% of Retail Sales)** | 36% | 39% | 41% | 44% | 47% | 49% | 52% | 55% | 57% | 60% | 60% | 60% | 60% | 60% |
| **Total RPS Procurement Requirement (MWh)** | 219,995 | 237,492 | 246,224 | 263,952 | 281,369 | 298,893 | 316,646 | 334,569 | 352,602 | 370,869 | 372,723 | 374,587 | 376,459 | 376,459 |
| **Long-Term Contracting Mandate (%)** | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% | 65% |
| **Long-Term Contracting Mandate (MWh)** | 142,996 | 154,370 | 160,046 | 171,569 | 182,890 | 194,280 | 205,820 | 217,470 | 229,191 | 241,065 | 242,270 | 243,481 | 244,699 | 244,699 |
| **Long-Term PCC1 Deliveries (Expected, per Contract)** | 131,718 | 110,303 | 215,997 | 212,427 | 211,657 | 226,170 | 238,767 | 237,452 | 235,810 | 234,296 | 153,135 | 152,768 | 116,440 | 105,931 |
| **Net Position (negative = short)** | (11,278) | (44,067) | 55,951 | 40,858 | 28,767 | 31,890 | 32,947 | 19,982 | 6,618 | (6,768) | (89,135) | (90,713) | (128,259) | (138,768) |
| **Net Position by Compliance Period (negative = short)** | | | | 41,464 | | | 93,604 | | | 19,832 | | | (308,107) | |
| **Long-Term RPS Coverage Ratio (%, relative to 65% mandate)** | | | | 107% | | | 116% | | | 103% | | | 58% | |

As reflected in the previous chart, the City expects to exceed applicable long-term RPS procurement mandates through Compliance Period 6. More specifically, for Compliance Period 4, the City expects to procure 107% of its required long-term RPS mandate (which means that the City expects to procure 69% of total statutorily mandated RPS purchases from long-term contracts), based on expected long-term RPS deliveries of 670 GWh, relative to a projected long-term procurement obligation of 629 GWh. Similarly, in Compliance Period 5, which includes calendar years 2025 through 2027, the City expects to procure 116% of its required long-term RPS mandate (which means the City expects to procure 75% of total statutorily mandated RPS purchases from long-term contracts), based on expected long-term RPS deliveries of 677 GWh, relative to a projected long-term procurement obligation of 583 GWh. In Compliance Period 6, which includes calendar years 2028 through 2030, the City expects to procure 103% of its required long-term RPS mandate (which means the City again expects to procure 67% of total statutorily mandated RPS purchases from long-term contracts), based on expected long-term RPS deliveries of 708 GWh, relative to a projected long-term procurement obligation of 688 GWh. These projections are based on estimated annual deliveries to be received under the City's current long-term RPS supply agreements, including its long-term VAMO supply agreement with SCE.

Based on expected long-term RPS deliveries, as well as its early-stage negotiations with two additional suppliers of long-term PCC1 supply, the City believes it will be able to successfully achieve compliance with long-term RPS procurement mandates through 2030 under

a variety of adverse scenarios in which delivery shortfalls could occur. This noted, the City expects to strategically pursue additional long-term RPS supply, via solicitations administered by CalChoice and bilateral contracting discussions, to increase long-term planning reserves, promoting increased compliance certainty in advance of future operating periods.

LCE understands that the pursuit of other long-term RPS opportunities will be somewhat iterative and may be based on the success of existing supply commitments, the extent to which additional new-build project opportunities timely achieve commercial operation, potential legislative and regulatory changes, City preferences and various other considerations. In the event that the City enters into other contracts with new-build renewable generating facilities, it will closely monitor project development progress and contract/project performance to ensure that actual long-term deliveries meet or exceed pertinent requirements. Any future long-term contracting efforts will be described in subsequent RPS Procurement Plans.

### IV.C. Portfolio Diversity and Reliability

LCE has considered and will continue to consider the deliverability characteristics of its future generating resources placed under contract (such as the resource's dispatchability, available capacity, and typical production patterns) and will review the respective risks associated with short- and long-term purchases as part of its forecasting and procurement processes. These efforts will lead to a more diverse resource mix, address grid integration issues, and provide value to the local community. A quantitative description of this forecast is attached to this RPS Procurement Plan in Appendix C.

While the City is not opposed to considering emerging renewable generating technologies, it is unlikely that upcoming supply agreement(s) will focus on such resources – the City has yet to receive credible and cost-competitive proposals from emerging renewable

generating technologies, but if such proposals arrive in the future, they will be closely considered alongside other viable options. Based on the City's renewable energy planning goals, its renewable supply commitments must result in reliable, cost-effective supply to promote compliance with applicable RPS mandates without bearing the risks typically associated with newer technologies. Until compelling proposals for emerging renewable generating technologies are received, the City will likely exhibit preferences for "tried and true" generating technologies that will minimize delivery risk during ongoing operation while allowing for re-shaping of certain renewable generating profiles to better align supply with demand. The City will procure renewable and other energy products, as necessary, to ensure that the future energy needs of its customers are met in a manner that promotes reliability and cost-effectiveness, consistent with applicable compliance mandates and general objectives of the CCA Program. The City has established procurement targets for requisite renewable energy supply, including subcategories for various renewable energy products, and has also established targets for related planning reserves as described elsewhere in this document. Presently, the City's internally established renewable energy procurement target generally mirrors California's RPS mandate. To the extent that the City's energy needs are not fulfilled through the use of renewable generating resources, it should be assumed that such supply will be sourced from conventional energy resources, such as natural gas generating technologies or system power purchases, as well as any clean energy resources that may be necessary to further progress in meeting California's greenhouse gas emission reduction goals.

LCE currently utilizes a portfolio risk management approach as part of the power purchasing program that is administered by CalChoice on its behalf, seeking low-cost supply (based on prevailing market conditions at the time of solicitation administration) as well as

diversity amongst technologies, production profiles, project sizes and locations, counterparties, lengths of contract, and timing of market purchases. It is reasonable to assume that LCE's supply portfolio will increase in complexity over time, utilizing an increasing number of supply contracts and related supplier relationships by emphasizing the principles of resource and counterparty diversity.

A key component of LCE's planning process relates to the analysis and consideration of expected load obligations with the objective of closely balancing supply/demand, cost/rate stability and overall budgetary impacts. Similar to the experiences of most CCAs, the City learned that historical data was not a perfect predictor of future customer energy requirements, so LCE and CalChoice actively monitor actual customer usage, relative to projections, refining such forecasts as well as the ability to minimize variances between procured energy quantities and actual usage – while this process may not eliminate such variances, it should significantly reduce them, minimizing exposure of the CCA Program and its customers to unexpected cost spikes that may occur within California's power market. The City is committed to developing an accurate understanding of the manner in which its customers use electric power to promote an efficient and cost-effective procurement process.

The City forecasts its future load growth by applying a fixed annual increase of approximately 0.76% in retail sales as compared to the prior year. This forecast value was derived based on the CEC 2023 Integrated Energy Policy Report ("IEPR") demand forecast for the CEE service area.[2]. The load forecast reflects assumed increases in customer energy usage due to transportation electrification consistent with the CEC IEPR forecast assumptions, and this

[2] Forecast data available at: https://www.energy.ca.gov/data-reports/california-energy-planning-library/forecasts-and-system-planning/demand-side-1.

results in a higher rate of load growth than the 0.5% annual baseline increases historically observed by the City.

because state and local transportation goals are likely to result in significant increases in transportation electrification in the future, the City is evaluating if its load forecasts should be refined based on local electrification changes that are expected to occur. This evaluation considers personal light duty vehicles, electrification of fleets and local targets for electrification of public transit systems. Future forecast adjustment may also include any applicable local policies related to transportation electrification, locally available incentives focused on transportation electrification, and/or data related to electric transportation adoption/conversion occurring within the City.

With regard to the City's anticipated renewable energy requirements, LCE maintains portfolio coverage targets of up to 100 percent in the near-term (0 to 2 years) but leaves larger open positions in the mid- to long-term, consistent with generally accepted industry practices. At this point in time, the City has no explicit preference for specific renewable generating technologies and considers all resource types with the goal of assembling a diversified, cost-effective renewable energy supply portfolio that will deliver energy in a profile that is generally consistent with the anticipated load shape of LCE customers. LCE is also aware that future reliance on intermittent renewable generating technologies has the potential to create occasional misalignments between customer energy consumption and power production as well as variances between the actual and expected quantity of renewable energy received from such projects. In order to better align the quantities of renewable energy with load, and help reduce variances between actual and expected quantities of renewable energy, LCE is considering both stand-alone storage and hybrid or co-located storage and renewable energy projects. LCE has

also applied its minimum margin of over procurement for renewable energy (tentatively set at 3.6% of retail sales), which was based on the quantitative risk assessment described below. To the extent that significant, prolonged variances are observed between LCE's actual and expected energy use, staff may propose increased planning reserves (beyond the current 3.6% of retail sales metric reflected herein).

The City is aware that use of energy storage infrastructure in combination with renewable generating assets can mitigate integration impacts typically associated with increased use/development of intermittent renewable generating technologies. The extent to which such configurations will be successful in alleviating conditions of over-supply and misalignments between energy production and customer use will be evaluated during future solicitation processes to ensure that any resultant contractual commitments will promote desired outcomes.

### IV.D. Lessons Learned

In communicating with and reviewing the RPS Procurement Plans of California's most mature CCA organizations as well as considering its own experiences in developing an RPS portfolio, the City observes that geographic diversity remains an important element in selecting renewable energy resources/contracting opportunities. The City observes that certain areas of the state have been overbuilt with renewable generating infrastructure, which has created challenges related to depressed market prices and increasing levels of resource curtailment. The City has kept this observation in mind when assembling its own renewable resource portfolio, avoiding overcommitment to resources within a narrowly defined geographic area. Based on communications with CalChoice and other CCAs, the City also continues to evaluate historical pricing trends, which have materially changed in the wake of

increased renewable energy buildout. Due to these transitions and suppressed (and oftentimes negative) market pricing, the City will likely avoid contracting with generators located in certain areas or require substantial storage capacity (operated in parallel with renewable generating infrastructure) to mitigate market price risk when considering renewable generating resources located in such areas. Based on increased levels of wind and solar curtailment in California, the "traditional" two-to-one ratio of nameplate renewable generating capacity to battery storage may be insufficient to satisfactorily mitigate exposure to market price volatility. In recent solicitations, the City has strongly considered project configurations that have proposed higher nameplate capacity to battery storage ratios (such as a one-to-one ratio) but has found that the relative high costs associated with battery storage capacity serve as a deterrent to this configuration. Nonetheless, the City will continue to evaluate such configurations as the increased dispatch flexibility of a one-to-one project configuration may prove to be a more desirable long-term asset to manage market price risk. The City is also aware of the shift in California's renewable energy market that has occurred over the past 18 to 24 months. Increased supply tightness has contributed to pricing increases approximating 400% in short-term renewable energy markets, which has, in turn, affected credit expectations within certain supplier organizations. In general terms, short-term RPS supply is more difficult to find, is more costly to procure and may, in certain cases, require less favorable payment and/or credit terms during contracting. The City believes that this situation will eventually improve but over the next few years there will likely be increased challenges addressing RPS open positions should such exist. The City appreciates the substantial financial risks that are created by California's long-term renewable contracting requirements and will continue to explore opportunities to manage such risks during its contracting efforts.

## V. Project Development Status Update

As described in Section IV.B above, LCE's current and planned procurement is expected to be sufficient to meet both the applicable RPS procurement requirements and is expected to support the state's GHG reduction targets. Further, LCE's current and planned procurement supports system reliability by considering both portfolio diversity and alignment with LCE customers' load curve. Specifically, LCE's selected projects fit within and support LCE's plans for meeting these goals.

LCE's ongoing contracting efforts have resulted in supply commitments with new/repowered generating assets and related (updated) details are included in the Project Development Status Update Report, Appendix D. At this time, the lone renewable generating resource under contract that has yet to achieve COD is the Cape Generating Station 1 project. This project is expected to achieve commercial operation in mid-2026 and regularly provides project status updates to ensure that the City stays apprised of ongoing development activities; at this time, the project does not anticipate any delays to its expected commercial operation date. In its most recent update, the project developer indicated the following:

<u>Engineering and Procurement</u>

1. Worked towards finalization of ORC generator design and purchase agreement with Turboden
2. Issued POs for transformers with Virginia Transformer Company
3. Executed POs for high voltage breakers with Wholesale Electric Supply Co
4. Seconded Fervo engineer to Burns and McDonnell's Kansas City HQ to support project team
5. Amended the Jacob's Professional Services Agreement to increase Owner's

Engineering scope

Permitting and Land

1. Completed Stormwater Pollution Prevention Plan (SWPPP) for Utah Division of Water Quality
2. Received confirmation well construction approvals from Utah DWRi for next four well pads (Gold, Belknap, Granite, and Signal)
3. Conducted biological species survey for confirmation wells pads (Gold, Belknap Granite, Signal)
1. Received approval from DWRi to expand Bearskin well pad to an 8-well configuration

Drilling and Completions

1. Completed drilling of horizontal Winkler 4-I well, Winkler 3-P well, Bearskin 1-IA
2. Completed temperature well logging on Winkler 4-I
3. Completed drilling of second and third water wells
4. Completed infrastructure and brought first and second water wells online
5. Completed third water storage pit
6. Completed well workover work on Frisco 1-I, 2-P, and 3-I and wireline imaging on Frisco 3-I, in preparation for reservoir stimulation
7. Completed stimulation process of Frisco 1-I, initial data indicates successful connection between Frisco wells

Interconnection

1. Received all engineering assessment information and have progressed to alignment on material terms with private transmission owner for LGIA and TSA.

As the City's contracting efforts continue, any additional information related to the City's future renewable energy contracting process(es) will be included in future iterations of its Project Development Status Update Report (and submitted within a subsequent RPS Procurement Plan).

**VI. Potential Compliance Delays**

LCE does not anticipate any compliance delays for the current compliance period (Compliance Period 4, which includes calendar years 2021-2024). Ongoing contracting processes have resulted in the identification and execution of numerous renewable energy supply commitments, and LCE's attention to annual balancing of requisite renewable energy purchases relative to retail sales is expected to put the CCA program in a position where actual renewable energy deliveries closely align with (but slightly exceed) applicable compliance mandates during the current compliance period. LCE is also making good progress in meeting the state's 65% long-term contracting requirement, having executed numerous long-term supply commitments in the recent past – LCE will continue assessing projected long-term open positions relative to expected deliveries and intends to participate in future CalChoice-administered solicitations, as necessary, to ensure compliance with this element of the RPS Program – based on current long-term commitments, however, the City appears to be well situated to meet related compliance obligations through Compliance Period 6. The City's recent decision to accept certain long-term allocations made available through the VAMO process is expected to solidify the achievement of applicable long-term RPS contracting mandates.

As a small CCA, the City recognizes that its portfolio of resources will be more limited

than larger LSEs and that delays in online dates and reduced generation from the RPS contracts may have significant impacts on both its level of RPS and its progress to achieving 65% from long term contracts. The City has discussed this topic with CalChoice, which continues to manage such risk through the screening and evaluative processes associated with its renewable energy solicitations. In particular, a key element of proposal evaluation focuses on the identification and selection of highly experienced and financially viable renewable energy sellers – by pursuing supply commitments from such sellers, the City and CalChoice believe that the substantial majority of future delivery risk is avoided. This will be accomplished by completing a rigorous review of each prospective supplier's development and operational experience, track record of success (in terms of developing and/or operating renewable energy projects), financial standing and credit rating, familiarity with pertinent development milestones as well as the state of completion for such items, customer references and various other considerations. During the completion of this process, the field of respondents will be significantly narrowed, leaving only the best qualified suppliers to undergo further consideration. If a future compliance issue is identified or the City encounters challenges in securing requisite renewable energy supply, then the City will address such issue(s) in a subsequent RPS Procurement Plan.

As the Commission is aware, successful renewable energy markets depend upon international supply chains, substantial labor commitments, robust financial markets, timely interactions with governmental planning authorities and various other considerations. With numerous disruptions caused by the COVID-19 pandemic and various other challenges the City is closely monitoring potential fallout related to supplier/developer effectiveness in fulfilling mandated renewable energy needs, project completion and overall supplier viability. The City is aware that many supply chains were disrupted during the pandemic (with some slower to recover

than others) with a variety of material/component shortages occurring throughout the industry; concerns regarding the application of tariffs on certain imported renewable infrastructure have also provoked certain supplier to request "reopening" of previously executed contracts and/or the negotiation of terms that allow for price adjustments in the event of unexpected costs (such as the noted tariff). While the tariff issue seems to be temporarily resolved, concerns of this nature have introduced a measure of instability in the long-term contracting efforts of many retail sellers. With these concerns in mind, the City encourages the Commission to closely monitor and potentially reconsider certain elements of the RPS Program as this situation evolves, particularly if there are widespread, well-documented challenges as California retail sellers attempt to fulfill pertinent procurement requirements.

## VII. Risk Assessment

### VII.A. Compliance Risk

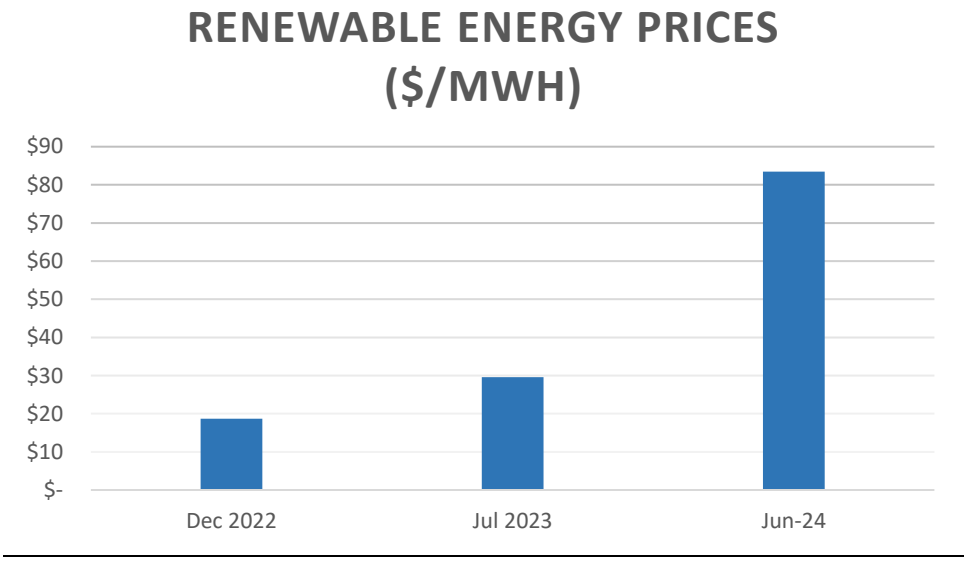
An important element of the City's RPS risk assessment process is determining potential vulnerabilities related to procurement and/or delivery shortfalls that could trigger deficits relative to the City's anticipated compliance obligations. Considering the City's internally adopted renewable energy procurement targets and existing contractual commitments, this risk, as internally determined by the City in consultation with CalChoice, appears to be very low in Compliance Period 4 and beyond. As discussed elsewhere in this planning document, the City has established a MMoP that informs RPS procurement efforts and insures against compliance-related shortfalls. A prior letter from Commission staff supports this assessment. More specifically, this letter, which was sent by the Commission's Deputy Executive Director for Energy and Climate Policy in early December 2022, provided an assessment of the City's perceived RPS compliance risk for Compliance Period 4 (calendar years 2021 through 2024).

According to the letter, the assessment was based on information included in the City's 2021 RPS Compliance Report, as submitted in the summer of 2022. Risk levels were assigned by the Commission and identified as low, medium or high based on reported progress towards applicable RPS procurement mandates. In its letter, the City's risk level was categorized as "low."

Following submittal of its 2021 RPS Compliance Report, the City coordinated with SCE regarding its acceptance of long-term RPS volumes made available under the VAMO process. As indicated (above) in Section IV.A.1. of this plan, the City accepted 50% of its available long-term VAMO allocations, which meaningfully increased its anticipated RPS deliveries in Compliance Period 4 and beyond. With these incremental RPS volumes now included in the City's planning assumptions, the City expects that it will receive renewable energy volumes in excess of its procurement quantity requirement in Compliance Period 4. On a projected basis, this not only satisfies the City's compliance obligations but also a significant portion of its MMoP, providing additional flexibility in the event that retail sales surpass expectations or variable RPS deliveries (such as those related to VAMO) fall below projections. Again, the City believes that its internally adopted renewable energy procurement targets (reflective of statutory RPS mandates, plus its MMoP), as well as existing contractual commitments, leave the City very well positioned to meet its ongoing RPS compliance obligations in Compliance Period 4 and beyond. *Based on the City's assessment of compliance risk associated with its renewable energy contract portfolio, this risk category was assigned a rating of low.* If anything happens to change in terms of the City's internal assessment of RPS compliance risk, it will inform the CPUC accordingly in a future RPS Procurement Plan.

### VII.B. Risk Modeling and Risk Factors

The City will make reasonable efforts to minimize the risk of renewable procurement shortfalls for purposes of complying with applicable RPS mandates established in SB 100, but it cannot definitively predict the scope or magnitude of circumstances that may impact annual retail energy sales, renewable energy markets or individual project performance. The extent of the recent increase in short-term RPS product pricing, for example, was largely unexpected and has imposed significant financial burdens on California retail sellers when addressing incremental RPS procurement, particularly for product volumes delivering in 2024 and throughout Compliance Period 5. The City has prepared the following chart, which depicts recent RPS pricing movement – again, an approximately 400 percent price increase has been observed over the past 18 to 24 months; and RPS prices in calendar years 2025 through 2027 continue to rise.




The City responsibly assesses RPS compliance risk by considering three key planning elements: 1) retail sales variability; 2) renewable energy production/delivery variability; and 3) impacts to overall system reliability associated with the City's planned RPS purchases and other

influences. These topics will be generally considered in the noted sequence with observed risks informing potential adaptations to the City's planning process, potential adaptations to planning reserves and, ultimately, refinements to the City's renewable energy procurement (or sales) processes and quantities. As described elsewhere in this RPS Procurement Plan and in consideration of City-adopted RPS planning targets, the City expects to be well-positioned to meet its RPS compliance requirements in Compliance Period 4 (and beyond). Additional procurement will be necessary to fulfill anticipated RPS compliance obligations in Compliance Period 5 and beyond, but the City is actively addressing such needs by identifying new supply opportunities (such as those identified through its January 2024 solicitation for long-term RPS supply and incremental capacity) and negotiating power purchase agreements for this supply. Therefore, the City's self-determined risk of non-compliance is low. Nevertheless, the City will continue to assess demand-side and supply-side risks to better understand potential areas of concern and to promote achievement of organizational compliance objectives. If the City's self-determined risk of non-compliance happens to change in the future, it will accordingly advise the Commission of such assessment, related causes and anticipated remedial actions.

Regarding demand-side risk, the City continues to evaluate prospective retail sales during the planning period through 2034, including but not limited to new development projects (that could increase retail energy consumption) and business closures, expected customer attrition (or growth) and changes to behind-the-meter generating capacity. From a practical perspective, the greatest demand-side risk with regard to the City's anticipated customer base is that retail sales are meaningfully higher than anticipated during Compliance Period 5 and beyond. As the Commission is aware, CCAs provide an opportunity for customer choice, allowing customers to voluntarily participate in the City's program or remain bundled customers of the incumbent

utility, SCE. To the extent that customers choose to leave the City's CCA program, or "opt out", the City's retail sales will decrease, resulting in related increases to the ratio of renewable energy serving such customers (and improving the City's position relative to applicable RPS compliance mandates) – it is unlikely that the City's renewable supply commitments will provide volumetric flexibility/options (to increase contracted supply at the City's election) in the event of higher-than-anticipated retail sales volumes; as such, and if retail sales happen to exceed the City's expectations, it would need to pursue additional procurement opportunities to address unanticipated open positions. Based on its own experience as well as input from other CalChoice members, the City believes that its customer base is relatively stable and, barring any unforeseen circumstances, substantial year-over-year variations in retail sales are not expected to occur. Also, considering the City's ongoing coordination with its planning department, the City expects to be well informed regarding upcoming development projects or other customer changes that could materially increase retail sales. For this reason, the City believes that demand-side RPS compliance risk is manageable.

Regarding supply-side risks, the City is aware of the generation variability/intermittency associated with certain renewable technologies as well as the possibility of curtailment (based on pricing considerations or market directives) during certain times of day/year. In the case of new-build renewable projects, the City is also aware of the possibility of project delays and, potentially, project failure. Such circumstances can materially diminish renewable energy deliveries, jeopardizing the achievement of RPS compliance and exposing the CCA program to unexpected financial consequences, if such circumstances impact larger (or multiple) supply sources. Based on the City's relatively modest RPS planning reserve, it will need to be highly selective in identifying its renewable energy suppliers, particularly those offering supply from

new-build generating facilities, and will generally focus on organizations that have well-documented track records of successfully fulfilling RPS delivery obligations.

To the best of the City's knowledge, few early-stage CCAs have experienced difficulties with generalized renewable energy procurement, but long-term RPS contracting has been more challenging – typical lead times (between contract execution and project completion) associated with new-build renewable energy projects are often 2-3 years or longer, and related power supply contracting efforts are rarely initiated so far in advance of service commencement. With this observation in mind, early-stage CCAs must either: 1) focus RPS contracting efforts on existing renewable generating resources; or 2) accept failure/delay risks associated with new-build renewable projects placed under contract near the time of CCA launch by incorporating reasonable planning reserves to mitigate such risks. In the case of the City, a balanced approach has been pursued, which will focus on contracting efforts with both new and existing renewable generating resources, thereby minimizing, but not eliminating, risks associated with compliance shortfalls. The City expects to pursue long-term RPS contracts that will yield delivery surpluses relative to applicable compliance mandates and such surpluses are expected to mitigate concerns related to project development delays and or failures during Compliance Period 4.

The City also anticipates mitigating supply-side risk by incorporating fixed-volume and index-plus pricing structures amongst its portfolio of RPS supply agreements. These procurement mechanisms serve to mitigate the risk of delivery variability (typically associated with intermittent renewable resources and/or renewable resources that may be subject to periodic curtailment) and exposure to negative market pricing (which could prompt economic curtailment). Fixed volume arrangements, in particular, also mitigate risk associated with commercial operation delays and facility failure; these structures also provide buyers with

financial protections (via penalty payments) for under-delivery (which could be used, as a last resort, to offset compliance penalties in the event that the supplier or the City are unable to identify replacement volumes).

As part of the City's approach to managing supply-side risk (which will be carried out through its relationship with CalChoice), it has also adopted what it believes to be a CCA best practice related to RPS contracting: structuring solicitations to identify proven renewable generating technologies in prime resource locations to be developed and/or operated by the most experienced available suppliers (with strong, well-documented track records of successful project completion and operational reliability).

This noted, there is always a possibility that future renewable energy supply will not be delivered as required, which is why the City, based on discussions with CalChoice, has incorporated a 3.6% minimum margin of procurement in its renewable energy planning process. The 3.6% minimum margin of procurement, or "planning reserve", has been determined to be sufficient, as discussed below, but this metric will undergo regular review and, if necessary, revision during future planning discussions and in consideration of ongoing procurement efforts.

The City has compiled information about curtailments of renewable energy in CAISO over the last four years. This information is presented below. The data shows that renewable curtailment has been consistently under 1% of load. The City also analyzed the occurrence of negative prices within the SP-15 area of the CAISO. These studies, combined with the analysis of other risk discussed below, indicate that the 3.6% minimum margin of procurement adopted by the City should be sufficient. These past results are obviously not indicative of what might occur in the future, and indeed the data shows that the trend of renewable curtailment has generally been increasing.

LCE utilizes a quantitative risk assessment that estimates the energy impacts related to potential supply side losses. This approach organizes prospective risks into four general categories which pose the greatest possible supply-side impacts to the delivery of expected RPS energy: 1) curtailment risk; 2) counterparty risk; 3) intermittency risk; and 4) project cancellation risk. As part of its quantitative risk assessment, the City examines hourly forward-looking data that could lead to curtailment risk, specifically the likelihood that an hour within the forward energy market exhibits pricing below negative $40/MWh beginning in 2024 through the end of the current planning period. This price was selected in consideration of recent PCC1 market value during the 2023 and 2024 calendar years, but the City is cognizant of the fact that such pricing is incredibly high relative to historical norms. Further, the City is aware that PCC1 prices have continued to increase over the past several months, reaching levels around $90/MWh for deliveries occurring in calendar year 2025. The recent volatility in regional renewable energy markets imposes challenges in determining market price benchmarks that ought to be applied when evaluating prospective curtailment risk, particularly over an extended planning horizon such as the one contemplated in this planning process. Nonetheless, the noted price of negative $40/MWh seems appropriate for the time being, particularly over the 10-plus-year planning horizon contemplated herein, but will be reevaluated in the future to ensure that risks associated with ongoing curtailment are appropriately evaluated in the future. Unfortunately, this is a somewhat precarious analysis when considered over a 10-plus-year planning horizon, as RPS pricing levels are expected to change (possibly significantly) between 2024 and 2034. Over the upcoming two to three years, the City has limited opportunity to direct curtailments through its existing supply agreements, and much of the risk of actual curtailment seems limited to deliveries related to the City's long-term VAMO contract with SCE. While the City has no

visibility with regard to the curtailment provisions reflected in SCE's VAMO contract portfolio, it has proactively reflected an eight percent "conservatism adjustment" for such deliveries to address possible resource curtailments and/or general delivery shortfalls – again, because the City has no visibility with regard to the contracting provisions that may allow for SCE to curtail/reduce deliveries, it does not want to risk overstating VAMO volumes within its planning process and, after evaluating one year of VAMO deliveries, has observed that actual deliveries did fall below forecasted deliveries in 2023. The likelihood of curtailment is thus calculated by dividing the number of hours where prices fall below the noted bid floor by the number of hours in a year. While we expect that instances of negative pricing below the bid floor will be relatively infrequent, we also expect that all possible renewable energy production from the affected generating facility will be curtailed during such instances, resulting in proportionate delivery reductions that are relatively high during these periods of time. Though instances of hourly pricing below the noted floor are very low (below 1.0% of all hours), portfolio risks (as measured by volumetric shortfalls) can be more substantial, so the City has increased this risk factor to 5% of expected deliveries (or 8%, as previously noted, for forecasted VAMO deliveries from SCE) to ensure a measure of conservatism in evaluating this potential risk. Note that curtailment risk has only been evaluated for renewable supply agreements under which curtailment may occur – for example, a fixed, firm delivery obligation would not be subject to curtailment risk, so expected delivery shortfall related to curtailment would be zero in this example.

When anticipating impacts related to curtailment, the City assumed that it would be financially beneficial to curtail potential generation at prices below the noted bid floor while pursuing alternative renewable energy supply via short-term purchases from the market (in place

of curtailed output from the affected generating source).

The figures presented in the column quantifying curtailment risk are calculated by aggregating expected renewable energy deliveries from each contract then multiplying such volumes by the City's assigned risk factor for curtailment (5.0% for non-VAMO deliveries and 8% for VAMO deliveries, as noted above). When considering the potential magnitude of all possible curtailments associated with the City's RPS supply portfolio through 2034, the conservatively estimated curtailment impact was determined to be 4.0% of all RPS deliveries. The City expects actual delivery reductions related to curtailment to be much lower. The City's decision to pursue a diverse mix of fixed-volume and as-available RPS purchases helps mitigate portfolio risk related to curtailment. *Based on the City's assessment of curtailment risk associated with its renewable energy contract portfolio, this risk category was assigned a rating of low.*

Counterparty risk is the risk posed by a counterparty being unable or unwilling to honor its total RPS delivery obligations, as reflected in related contract documents. The City has quantified this likelihood by considering S&P Global's, Global Corporate Annual Default Rates by Rating Category (%) as a measure of organizational viability and financial stability. While this rate considers industries beyond the energy sector, it provides relevant insights into the correlation and potential impacts of dealing with counterparties that do not exhibit strong credit profiles. The likelihood of default by assigned credit rating was averaged over the six-year period between 2014 to 2019. These years were chosen to remove irregularities in default rates during the Covid-19 pandemic. If a counterparty was found to be unrated, then the contract was reviewed to identify specified credit assurances; based on such assurances, an approximate rating was derived based on the City's experience and risk tolerance. *Based on the City's assessment of*

*counterparty risk associated with its renewable energy contract portfolio, this risk category was assigned a rating of low.*

Intermittency risk has become increasingly prevalent in the wake of ongoing renewable infrastructure buildout, which has been heavily biased towards the photovoltaic solar generating technology. Such risks ought to be accounted for as part of a thoughtful quantitative risk assessment to ensure the identification of sufficient planning reserves. The City assumed a two percent intermittency adjustment for all as-available RPS supply agreements, including its VAMO agreement with SCE, to promote additional conservatism while it continues to learn more about the actual performance of the intermittent resources that it has within its RPS supply portfolio. When considered in concert with the City's assumed eight percent curtailment risk adjustment for VAMO contracts, the total risk adjustment – curtail plus intermittency – that has been imputed for future VAMO deliveries is 10 percent. As 2023 was the first year in which VAMO deliveries occurred, the City wanted to observe a highly conservative forecasting approach but will continue to evaluate its assumed risk adjustments relative to actual contract performance to determine if adjustments will be necessary in the future.

As new intermittent facilities are developed to meet the procurement burdens of increasing regulatory requirements, the risk of variances between projected and actual energy deliveries will be amplified. Quantifying intermittency risk is largely dependent on available data, as each generating facility is unique (geographically, operationally, etc.). As data is gathered from facilities comprising an RPS supply portfolio, planning adjustments can be incorporated to account for variances between actual and expected historical deliveries, allowing the retail seller to incorporate adjustments in its resource planning and procurement assumptions to counteract such risk. During the early stages of any delivery period, however, data is often

lacking so planning adjustments are more challenging to quantify and must be based on reasonable estimates derived by observing similar projects. Over time, as meaningful amounts of historical data are compiled, the purchaser should be able make increasingly accurate adjustments to its planning assumptions to ensure that procured RPS volumes more accurately align with anticipated needs. This noted, resource intermittency risk is limited across the balance of the City's RPS supply portfolio, as several of the City's RPS contracts specify fixed delivery quantities.

When evaluating intermittency risk in the future, the City believes such risk can be reasonably quantified when available operating history reaches two years or more. Before substantive historical data becomes available, input from the asset owner/operator, insight derived from the operating history associated with similar facilities and limited historical data can be applied to generate an intermittency impact assessment. Once a generating facility has established steady-state operations, intermittency risk can be quantified by dividing the amount of actual energy received by the amount of expected energy for each year of a given contract, then averaging observed variances across each year of the available operating history. The resulting percentage is multiplied by the remaining expected energy deliveries under the contract to approximate potential delivery deficits related to intermittency. Employing this intermittency analysis is helpful in identifying especially risky contracts, which in turn assists the City in determining facility-specific intermittency risk values. As alluded to above, as more data becomes available the intermittency risk metric can be updated to more accurately reflect the performance of certain generating facilities over time. *Based on the City's assessment of intermittency risk associated with its renewable energy contract portfolio, this risk category was assigned a rating of low.*

The final category reflected in the City's quantitative risk analysis is project/contract cancellation risk. This category is distinct from counterparty risk because the risk of project/contract cancellation may only affect a single project under a counterparty's portfolio. Projects may be cancelled for a variety of reasons, but in today's market, significant pricing volatility can present unforeseen risks for both buyers and sellers, depending on the timing of such transactions. This risk is particularly prevalent for generator-specific supply commitments related to new-build facilities. These projects were an area of focus within this category because they have a single point of failure unlike RPS energy purchased from a pool of resources (under a portfolio-style purchase agreement in which there is generally more diversity amongst the sources of supply). Based on discussions with various counterparties, other load serving entities and its own experience, the City has assessed that this risk affects roughly 1 in 20 deals. *Based on the City's assessment of project failure/contract cancellation risk associated with its renewable energy contract portfolio, this risk category was assigned a rating of low.*

Considering these categories holistically, the City was able to derive a cumulative energy percentage at risk. In consideration of the City's relatively conservative risk tolerances, a top-level risk of non-delivery offset at 0.25% of renewable energy procurements was added to the calculated energy at risk percentage. This adder will help to account for risks that the City cannot foresee and will help to guarantee the sufficiency of the City's planned RPS purchases in meeting both compliance-related and internally adopted renewable energy procurement targets. The percentage of renewable energy and error is the percentage of total renewable energy procured that was determined to be at risk, while the percentage of retail load is the energy at risk as a percentage of retail load. These "at risk" percentages reflect possible losses which, through no fault of the City, may occur by virtue of being a market participant. These losses pose

a risk for non-compliance relative to the City's RPS goals and targets. Since this number is not a guaranteed loss, the City will implement the previously mentioned mitigation strategies to give the greatest chance of meeting its adopted renewable energy procurement targets. Note that the Energy to be Delivered to Market reflected in the following table has been updated since submittal of the City's Final 2023 RPS Procurement Plan. The following table now reflects those forecasted energy deliveries occurring during the current planning horizon: 2024 through 2034. Expected deliveries beyond 2034 have been omitted from the City's analysis.

| | | Energy | Delivery & Market Risks | | | |
|---|---|---|---|---|---|---|
| ID | Contract | Energy to be Delivered to Market (MWh) | Curtailment Risk (MWh) | Counterparty Risk (MWh) | Intermittency Risk (MWh) | Project Cancellation Risk (MWh) |
| 1 | Contract 1557 | 276,546 | 13,827 | 5,315 | 5,531 | - |
| 2 | Contract 1561 | 192,185 | 9,609 | 3,694 | 28,828 | - |
| 3 | Contract 1575 | 122,500 | - | 2,354 | - | - |
| 4 | Contract 1627 | 168,000 | - | 3,229 | - | - |
| 5 | Contract 1687 | 237,716 | 11,886 | 4,569 | 23,772 | - |
| 6 | Contract 2100 | 81,340 | - | 1,563 | 4,067 | - |
| 7 | Contract 2683 | 119,961 | - | 2,306 | - | - |
| 8 | Contract 2794 | 63,083 | - | 1,212 | 12,617 | - |
| 9 | Contract 4382 | 235,128 | 11,756 | 4,519 | - | - |
| 10 | Contract 4630 | 369,925 | 29,594 | 104 | 7,399 | - |
| 11 | Contract 4643 | 258,488 | 20,679 | 72 | 5,170 | - |
| 12 | Contract 5043 | 175,000 | - | 3,024 | - | - |
| 13 | Contract 5222 | 50,000 | - | - | - | - |
| Total | | 2,349,871 | 97,352 | 31,962 | 87,382 | - |

| Energy | |
|---|---|
| Total Renewable Energy | 2,349,871 |
| Total Renewable Energy at Risk | 216,696 |
| % of Renewable Energy at Risk | 9.22% |
| % of Unknown Error at Ris | 0.25% |
| % of Renewable Energy & Error at Risk | 9.47% |
| % of Retail Load | 3.15% |

Based on the City's analysis, the City assessed that approximately 9.47% percent of its expected future RPS deliveries (from both online generation and facilities under development) may be at risk, which equates to 3.15% of its retail load. These percentages reflect average risk throughout the study period, which suggests that actual risk could fall somewhat above or below these percentages. In light of this updated risk assessment, the City has adjusted its prior 4%

MMoP ~~4%~~ (of retail load) to 3.15%.

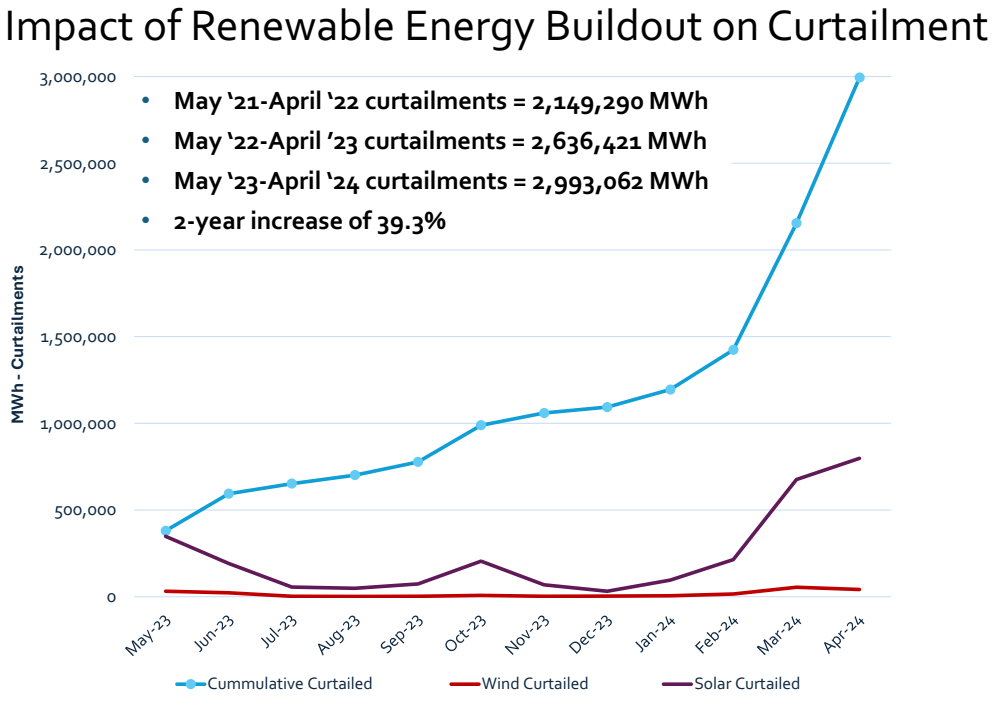
The City is also aware of other risk categories, including supply chain risk and technology risk which have been considered qualitatively as part of the City's risk assessment. At this point in time and in consideration of the City's existing contractual commitments, the risks within these categories are generally low with the exception of supply chain risk.

Technology risk, meaning the risk that future technological enhancements will result in the maintenance of a renewable supply portfolio that is meaningfully comprised of obsolete resources (based on ongoing technological enhancements that reduce the incremental cost of future renewable energy purchases relative to existing technologies), is a legitimate concern, but the City has thoughtfully constructed a diverse portfolio of renewable generating resources, which includes solar, wind, geothermal, small hydro, biomass and hybrid resources as well as temporal differences across contract start and end dates. With these considerations in mind, the City believes it has mitigated technology risk to the greatest practical extent, acknowledging, of course, that not all technology risk can be mitigated given the minimal flexibility provided on California's RPS compliance program. While technological risk could be aptly categorized as medium or high, it is substantially unavoidable when assembling an RPS-compliant supply portfolio. Over time, however, the City will continue staggering contract delivery terms and will continue pursuing technological diversity to reduce such risks to the greatest practical extent. The City will also thoughtfully consider any new renewable generating technologies that may surface in the future. *In consideration of the results of the City's risk analysis, the composite risk assessment, which considers all of the previously described risk categories, results in an overall risk rating of low.*

As previously mentioned, the City has also analyzed historical data on curtailments in the

CAISO energy markets. In the CAISO energy markets, much of renewable resource curtailment is achieved through voluntarily submitted bids that are directly responsive to very low (or negative) pricing conditions. In such instances, generator operators will cause such resources to "shut down," reducing associated production and related deliveries to contracted off-takers. Because of this structure, historical curtailment data is also indicative of negative pricing. The City recognizes this connection and the likely point of inflection that is expected to exist in curtailment activities (based on the previously described analysis). Contrary to the perspective reflected in its Final 2023 RPS Procurement Plan (in which the City indicated that it did not expect there to be ongoing increases in curtailment activities and also expected more moderated incidences of negative pricing), the City's recent evaluation of ongoing curtailment trends within the CAISO market suggests that California's current resource composition and general market dynamics have not developed to a point that will allow resource curtailment to subside. In the following graphic and table, the City has assessed curtailment trends, as compiled by CAISO for wind and solar resources, over the most recent 36-month period beginning May 2021 through April 2024. During this 36-month period, curtailments have increased by more than 39 percent, approaching three million megawatt hours in the 12-month period ending April 2024 (up from 2.1 million megawatt hours in the 12-month period ending April 2022). Increased solar curtailment appears to be the largest component of this dynamic, and the City anticipates that the trend may continue until additional storage, load shifting and/or other technologies can be developed to mitigate ongoing trends. The City has also updated its previous compilation of curtailment statistics, which now extends from 2018 through May 2024. This data set also supports the City's observations regarding increasing curtailment and further justifies the high level of conservatism that the City is observing in proactively addressing this risk in its planning

assumptions.



| **Annual Curtailment (MWh)** | | |
|---|---|---|
| | Wind | Solar |
| 2018 | 28,686 | 432,357 |
| 2019 | 43,557 | 921,684 |
| 2020 | 90,276 | 1,497,220 |
| 2021 | 78,477 | 1,426,326 |
| 2022 | 128,990 | 2,320,258 |
| 2023 | 150,604 | 2,508,916 |
| 2024 (Partial Year*) | 174,475 | 2,420,655 |
| **Annual Curtailment (% of Specific Generation)** | | |
| 2018 | 0.17% | 1.56% |
| 2019 | 0.27% | 3.22% |
| 2020 | 0.56% | 4.99% |
| 2021 | 0.41% | 4.19% |
| 2022 | 0.70% | 6.26% |
| 2023 | 0.72% | 6.10% |
| 2024 (Partial Year*) | 1.77% | 13.13% |
| **Average** | 0.66% | 5.64% |
| **Annual Curtailment (% of Load)** | | |
| 2018 | 0.013% | 0.190% |
| 2019 | 0.020% | 0.420% |
| 2020 | 0.041% | 0.680% |
| 2021 | 0.036% | 0.650% |
| 2022 | 0.057% | 1.030% |
| 2023 | 0.069% | 1.148% |
| 2024 (Partial Year*) | 0.212% | 2.939% |
| **Average** | 0.064% | 1.008% |
| *Through May 2024 | | |

In reconsidering its prior assessment of curtailment trends, the City seems to have been overly optimistic in its assumptions regarding the resolution of issues and complementary infrastructure buildout that were expected to mitigate curtailments, as curtailments within the CAISO footprint appear to be rising. After evaluating more recent data, as presented above, the City believes that California's existing infrastructure composition is not yet prepared to substantially mitigate these curtailment trends, which is why the City has incorporated increased curtailment assumptions in its quantitative risk assessment.

After examining the data from the risk assessment, CAISO curtailment and a study of negative prices in section XIII, LCE remains confident that the 3.154 percent minimum margin of procurement that it has now adopted provides the correct balance of risk and cost

management; the noted MMoP is also reflective of the City's current RPS contract portfolio, which includes a mix of facility-specific transactions with photovoltaic solar resources and biomass resources as well as fixed-quantity transactions (that eliminate risks associated with energy curtailment and/or negative pricing). In consideration of the City's exposure to solar and wind production variability (as a percentage of its total RPS supply) relative to the average historical curtailments for the solar generating technology (as reflected in the previous table), the noted 3.15 percent minimum margin of procurement conservatively addresses the City's risk related to delivery shortfalls that may result from solar and wind generating technologies (reflected in its current RPS supply portfolio). The City will continue to monitor trends in California's energy market, especially the curtailment levels of renewable resources represented within the City's RPS supply portfolio, and, if necessary, will adjust its minimum margin of procurement. Furthermore, the City has minimal exposure to delivery shortfalls related to project failure and/or delays due to the fact that only one of its current RPS supply contracts will rely on production from a generating resource that has yet to achieve commercial operation; the City has also incorporated provisions in certain RPS contracts to allow flexibility (to the seller) in identifying alternative resources for purposes of mitigating the potential of delivery shortfalls.

### VII.C. System Reliability

With respect to system reliability, the City is aware of the need to pursue a portfolio of renewable resources with diverse and complementary delivery profiles as well as complimentary infrastructure (namely, energy storage infrastructure) that will support the reshaping of renewable energy deliveries to better align with load. For example, renewable energy procurement efforts that may initially focus on relatively low-cost solar resources will often necessitate subsequent investments in co-located energy storage infrastructure and/or higher-cost

baseload renewable generating technologies, such as those using geothermal, biomass and landfill gas fuel sources. These baseload renewable technologies are often priced at three-to-four times the level of in-state photovoltaic solar generation but generally provide increased capacity value (due to the more predictable, baseload generating profiles of such resources) and related reliability enhancements. By ensuring a better match of energy and load, as well as procuring resources more capable of providing ancillary services than intermittent renewable resources alone, the City seeks to mitigate potential negative system impacts such as rolling outages or violations of current standards for ancillary services. Certain of the resources that may be procured to satisfy recent capacity mandates are also expected to support grid reliability and may include baseload renewable energy resources, renewable energy plus storage configurations or stand-alone battery storage configurations, all of which would be expected to improve grid reliability by some measure. Over time, the City will balance the often -competing interests of cost and reliability to support reasonably close alignment between supply and demand (reducing the need for pronounced resource ramping on the system), cost-effective procurement and overall grid reliability. The City is aware that low-cost, long-term solutions are incredibly challenging to identify but will remain committed to pursuing a conscientious planning process that balances grid reliability, compliance demonstration and customer cost impacts.

The City is willing to engage in discussions with SCE and the California Independent System Operator regarding reliability and other system impacts related to its portfolio. The City is further willing to consider the feedback provided by these organizations in its planning and procurement processes going forward, so long as such suggestions generally conform with organizational objectives and Council-adopted policies. *In consideration of the City's increasingly diverse contractual commitments for requisite renewable energy supply and the*

*organization's intent to focus on the identification of RPS-eligible and complementary technologies that will mitigate reliability impacts associated with increased use of intermittent generating resources throughout the state, overall risks to system reliability associated with the City's RPS Procurement Plan were determined to be low.*

### VII.D. Lessons Learned

In terms of lessons learned related to risk management, the City observes that internally adopted, above-RPS planning targets generally serve as effective mitigation measures related to RPS compliance. While setting lofty RPS targets is not a viable or desirable option for all retail sellers, the City will continue to evaluate (in the period leading up to program launch) the sufficiency of its adopted planning reserves (MMoP) to reduce the risk of RPS compliance shortfalls. If future RPS contracting activities impose larger than anticipated risks (on project failure and/or under-delivery), the City may increase its noted planning reserve to provide additional protection against such risks. The extent to which such adjustments may occur is not known at this time but will be discussed, as necessary, in a future RPS Procurement Plan.

The City has also observed the value of resource diversity across a broad spectrum of considerations, including resource location, generating technology, suppliers/developers, and contract structures, amongst other concerns. Long-term renewable supply commitments are inherently risky in the sense that such commitments expose the buyer and/or seller to a variety of unknown circumstances, including but not limited to evolving market prices and policy changes. Throughout a long-term contract relationship, it seems evident that areas with initially low levels of negative pricing (and related curtailment of energy production) can materially change as new project development activity occurs, creating (or exacerbating) conditions of over-supply and related incidents of energy curtailment. This risk is particularly challenging to manage, as

California's escalating RPS procurement mandates necessitate ongoing investment in new renewable generating infrastructure, which is often sited in resource-rich areas that become oversaturated with similar generating technologies (and related delivery profiles). These circumstances seem inevitable and, over the course of a long-term supply relationship, may expose the contracted parties to unexpected risks, including negative prices (and related budgetary impacts) and curtailed deliveries (which may compromise the fulfillment of mandated procurement targets by the buyer). The City will reevaluate its current renewable energy planning reserve to address anticipated curtailment and/or underperformance risk associated with specific projects placed under contract.

The City is also aware that risk can be diversified through various contract structures. For example, an "index-plus" pricing structure is useful in transferring nodal/market price risk to the seller – in such structures, the buyer pays a fixed renewable premium, while the seller assumes risk associated with market price fluctuations but also receives market revenues (which could be higher or lower than anticipated) – even though the buyer receives the energy, renewable attribute and (in certain instances) capacity value as part of such a transaction, the buyer's financial risk is generally limited to the payment of the renewable premium. For buyers who are averse to market price risk, the index-plus pricing structure effectively eliminates this concern but may result in higher overall contract costs (which may be acceptable, as a form of insurance, to mitigate market price exposure). In other structures, such as the "fixed-price" or "aggregate pricing" structure, the renewable energy premium and energy commodity (and oftentimes, capacity value) are reflected in a single price paid by the buyer – this structure deliberately allocates market price risk to the buyer, but the buyer may also pay a lower imputed renewable premium in instances where market revenues (realized when the energy commodity is

delivered to the grid) closely approximate (or exceed) the aggregate renewable energy price. In evaluating potential contract structures, decisions can be made in consideration of risk allocation preferences, and the City intends to pursue contracting structures that balance such risks over time. To date, the City has pursued many renewable contracts that allocate market price risk to its renewable energy sellers – this was determined to be a desirable approach while the City worked to accrue financial reserves while promoting budgetary certainty. With time, however, the City expects to increasingly use aggregate pricing structures that could lower overall procurement costs but may expose the CCA program to increased market risk. Any changes to this approach will be articulated in future iterations of the RPS procurement planning process.

**VIII. Renewable Net Short Calculations**

LCE has provided an updated quantitative assessment, which is attached hereto as Appendix C, to support the qualitative descriptions provided in this RPS Procurement Plan. More specifically, the City previously described (above, in Section VII, Risk Assessment) its quantitative risk assessment methodology and the results of such analysis, which suggested that 9.47% of future renewable energy deliveries (from both online facilities and facilities under development) were at risk, meaning that the City reasonably anticipates that this portion of expected renewable energy deliveries will not be received. ~~; the~~ This 9.47% risk factor of future ~~percentage of~~ RPS deliveries ~~at risk~~ equates to 3.15% of future retail load, which is equivalent to the City's recently updated MMoP. The City's determination was based on an assessment of the risk categories reflected in the City's analysis, which included: 1) curtailment risk; 2) intermittency risk; 3) counterparty risk; and 4) project failure/contract cancellation risk. The City applied its 3.15~~4.0~~% MMoP (which equates to 9.47% of ~~based on a percentage~~ of future RPS deliveries) as a conservative failure rate for both facilities under development ~~existing~~ and online generation when preparing its Renewable Net Short calculations~~;~~. T~~t~~his 9.47% figure can

be seen in rows 14 and 16 of the RNS reporting template. Such an (upward) adjustment was deemed appropriate to insure against unexpected renewable energy delivery shortfalls that could not be reasonably quantified through the aforementioned assessment. The City will actively monitor actual RPS deliveries under VAMO, and to the extent such deliveries fall short of expectations, it may adjust the noted failure rate for operational generating facilities to more accurately reflect the performance of this contract. If such adjustments are deemed necessary or appropriate in the future, the City will reflect such adjustments in a future planning document.

**IX. Minimum Margin of Procurement (MMoP)**

The City is developing an electricity supply portfolio that will further the achievement of state mandates. The following table displays the City's intended margin of RPS over-procurement based on the differential between the SB 100 procurement targets and the City's internally adopted RPS procurement targets – this differential is defined as the City's voluntary margin of over-procurement, or VMoP. It is readily apparent that the City has decided to forgo voluntary incremental purchases of RPS-eligible renewable energy, which is reflective of the prevailing priorities of the City's customer base and leadership: these priorities place an emphasis on rate competitiveness and local control, rather than heightened levels of RPS procurement. This decision should not be construed as a reflection of the City's commitment to fulfilling statewide RPS mandates. As further described below, the City has incorporated an RPS planning reserve, described as its minimum margin of procurement, or MMoP, to do just that.

**State & Internally Adopted Renewable Energy Requirements**

| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SB 100 RPS Procurement Requirement (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Minimum Internally Adopted RPS Procurement Target (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Voluntary Margin of Procurement (% of Retail Sales)** | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

As previously noted, the City's core goals and objectives emphasize the important of rate competitiveness and, therefore, the organization has adopted prudent RPS planning reserves without a VMoP. To address RPS compliance risk, the City uses its risk assessments, including its renewable net short calculations and curtailment analysis, to establish a Minimum Margin of Procurement to guide RPS compliance procurement planning. The City calculated the minimum margin of procurement, or MMoP, using a 3.15% risk adjustment (or planning reserve) that was applied to the City's annual retail sales estimates in each year of the planning period. Based on the manner in which the City has established its MMoP, as a 3.15% planning risk adjustment relative to retail sales, the effective MMoP percentages observed by the City range from 5.2% to 7.2%, relative to the City's projected RPS compliance need, over the current planning horizon (through 2034). The following chart provides additional detail regarding the effective MMoP percentages observed by the City.

| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SB 100 RPS Procurement Requirement (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Minimum Internally Adopted RPS Procurement Target (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Minimum Margin of Procurement (% of Retail Sales)** | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% |
| **Lancaster Choice Energy's Minimum Margin of Procurement (% buffer relative to RPS Mandate)** | 7.2% | 6.7% | 6.4% | 6.1% | 5.8% | 5.5% | 5.2% | 5.2% | 5.2% | 5.2% | 5.2% |

The City's MMoP is intended to address potential delivery variability for intermittent resources, curtailment risk, project delays and other operational peculiarities that may cause

actual renewable energy deliveries to deviate from projections. Note that certain of the City's renewable energy deliveries are not subject to variability – such agreements reflect minimum fixed delivery quantities (or quantities with limited volumetric variability) with corresponding financial penalties (paid to the City by related sellers in the event of delivery shortfalls).

Presently, the renewable energy procurement targets reflected in the City's planning process reflect moderate, but prudent, planning reserves to allow for certain demand- and supply-side variability that could impact RPS compliance achievement. The targets reflected within this RPS Procurement Plan reflect state mandated RPS procurement targets as well as the previously described ~~two percent~~ planning reserve. Staff assumes that future renewable procurement targets (inclusive of planning reserves necessary to meet RPS mandates) will consider a variety of factors, including but not limited to, the operational status of prospective renewable energy facilities to be placed under contract, the experience and general development track record of each project development team (associated with new resources), resource size (capacity), the location of prospective generating resources (for new facilities) and impacts of over-procurement to the CCA program's procurement budget and customer rates. Such considerations, amongst others, will be evaluated by the City in determining whether the current ~~proposed two percent~~ margin of over-procurement should be adjusted in the future. To the extent the City anticipates planning risk related to its renewable energy contract commitments, it will likely adjust its margin of over procurement accordingly.

### IX.A. MMoP Methodology and Inputs

The City's MMoP is intended to address an RPS failure rate at or above that which is reflected in the renewable net short reporting template. In the event of contract under-deliveries, commercial operation delays and/or project failures, the MMoP should be sufficient to ensure

the City is compliant with the RPS procurement requirements. As shown in Section VII above, the City's MMoP of 3.15% exceeds the historical level of curtailments in the CAISO grid (shown as below 1.0% for wind and just over 1.0% for solar, expressed as percentages of load), and also exceeds the City's risk assessment of RPS contracts (shown as 3.15% of retail load). The City's VMoP is the annual RPS-eligible minimum portfolio content identified in the City's internally adopted planning targets, which is currently equivalent to California's statewide RPS mandate.

As discussed in Section VIII, the City has incorporated risk adjustments to certain renewable energy delivery estimates associated with existing generating facilities. Achieving the City's MMoP necessitates higher levels of renewable energy procurement (3.15% of retail sales throughout the planning period), which accommodate the potential for delivery shortfalls (due to a variety of circumstances) while still allowing the City to meet prescribed RPS mandates.

| | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SB 100 RPS Procurement Requirement (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Minimum Internally Adopted RPS Procurement Target (% of Retail Sales)** | 44.0% | 46.7% | 49.3% | 52.0% | 54.7% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% | 60.0% |
| **Lancaster Choice Energy's Voluntary Margin of Procurement (% of Retail Sales, based on difference between SB 100 mandate and Lancaster Choice Energy's** | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| **Lancaster Choice Energy's Minimum Margin of Procurement (% of Retail Sales)** | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% | 3.1% |
| **Lancaster Choice Energy's Minimum Margin of Procurement (% buffer relative to RPS mandate)** | 7.2% | 6.7% | 6.4% | 6.1% | 5.8% | 5.5% | 5.2% | 5.2% | 5.2% | 5.2% | 5.2% |
| **Lancaster Choice Energy's Aggregate Planning Reserve: MMoP + VMoP (% buffer relative to RPS mandate)** | 7.2% | 6.7% | 6.4% | 6.1% | 5.8% | 5.5% | 5.2% | 5.2% | 5.2% | 5.2% | 5.2% |

The City will effectively ensure its compliance with applicable RPS mandates by procuring in consideration of applicable RPS mandates, plus the City's adopted MMoP. The City offers participating customers a portfolio comprised of renewable energy products which

minimally meet statewide RPS procurement mandates (44.0% in 2024). Staff understands that the City Council may periodically consider changes to the level of renewable energy included within the City's default retail service offering but also understands that such content would not fall below statutory RPS mandates. If the City Council considers and adopts changes to its internal renewable energy procurement targets, the organization will accordingly update future RPS planning documents to reflect such changes.

Presently, the renewable energy procurement policy that has been adopted by the City Council specifies a renewable energy target that mirrors similar targets reflected in California's RPS Program, plus the previously described 3.15% planning reserve. As such, the City plans to gradually increase its procurement of RPS-eligible renewable energy over time, inclusive of the aforementioned planning reserve, which is intended to mitigate risks associated with under delivery and/or failed (or delayed) project development.

### IX.B. MMoP Scenarios

The City plans to meet the annual program renewable goals reflected in the table presented in Section IX (above), including the MMoPs reflected therein. As reflected in this table, the City's anticipated MMoP percentage is 3.15% of retail load (or 5.2% to 7.2%, relative to applicable RPS procurement mandates throughout the planning period). During its bid evaluation and supplier selection processes, the City considers a variety of risks and believes that such risks are sufficiently addressed within its MMoP calculation – in consideration of the City's considerable reliance on fixed-volume renewable supply commitments, it has no reason to doubt the sufficiency of the MMoP reflected in its internally adopted RPS planning targets. This noted, if the City's resource planning and contract management processes happen to identify substantive concerns with the limited new-build renewable projects included/to be included in its supply portfolio, delivery shortfalls or other issues potentially impacting the proportionate level

of renewable energy reflected in its aggregate supply portfolio, the City will engage in expedited procurement processes to address such shortfalls (as a near-term solution) and also reevaluate the sufficiency of its MMoP (as a longer-term solution). As demand- and supply-side data are monitored in each year, the City may adjust planned short-term purchases and/or pursue surplus sales arrangements if actual renewable energy deliveries are tracking above its anticipated needs. By the end of each calendar year, the City hopes to manage the level of its internal planning reserve so that actual renewable energy deliveries are closely aligned with California's RPS Procurement Target.

The City will also model demand-side sensitivities that may impact MMoP calculations. In addition to load variability resulting from ongoing (minor) fluctuations in customer participation, the City will also monitor electric vehicle penetration rates, net energy metering participation rates and other considerations that may impact overall customer energy requirements and related MMoP calculations.

## X. Bid Solicitation Protocol

### X.A. Solicitation Protocols for Renewables Sales

When developing future solicitations for renewable energy products, the City will coordinate with CalChoice to develop solicitation protocols that: 1) ensures the City remains compliant with applicable RPS procurement mandates; 2) minimizes overall portfolio costs to the greatest extent practical; and 3) provides sufficient flexibility to accommodate reasonably anticipated supply-side and demand-side changes that could impact the City's overall renewable energy requirements.

### X.B. Bid Selection Protocols

Consistent with Section 399.13(a)(6)(C), CalChoice, on behalf of LCE, shall conduct bid

solicitations for requisite energy resources that are intended to identify available eligible renewable energy resources (reflecting locational preferences, when applicable, for such resources), generating capacity, and required online dates to assist in determining what resources fit best within LCE's desired supply portfolio. CalChoice continues to assist the City with such processes with oversight and input from member communities. Since CCA program governing boards are comprised of local elected officials, these solicitations and, in particular, related procurement decisions are overseen by elected representatives of the community with guidance provided by CalChoice. Such processes seek to comply with locally-set targets that tend to exceed the RPS requirement and provide value to the community by supporting increased use of renewable energy resources. Any renewable energy supply agreements resulting from LCE's participation in CalChoice's March 2020 solicitation process will be brought to the City's Governing Council for approval prior to execution.

Through its relationship with CalChoice, the City is actively engaged in developing solicitation protocols for requisite renewable energy supply and has incorporated a variety of considerations in related bid requirements. Pursuant to Public Utilities Code 399.13(a)(6)(C)[3] and discussions with CalChoice, these considerations, which will be focused on solicitation protocols, bid evaluation and supplier selection, include:

1. Overall quality of response, inclusive of completeness, timeliness, and conformity;
2. Price and relative value within the City's supply portfolio;
3. Project location and local benefits;
4. Project development status, including but not limited to progress toward interconnection, deliverability, siting, zoning, permitting, and financing requirements;

[3] Cal. Pub. Util. Code § 399.13(a)(6)(C) ("Consistent with the goal of increasing California's reliance on eligible renewable energy resources, the renewable energy procurement plan shall include all of the following: A bid solicitation setting forth the need for eligible renewable energy resources of each deliverability characteristic, required online dates, and locational preferences, if any.")

5. Qualifications, experience, financial stability, and structure of the prospective project team (including its ownership);
6. Environmental impacts and related mitigation requirements, including impacts to air pollution within communities that have been disproportionately impacted by the existing generating fleet;
7. Potential impacts to grid reliability;
8. Potential economic benefits created within communities with high levels of poverty and unemployment;
9. Acceptance of the City's standard contract terms; and
10. Development milestone schedule, if applicable.

When evaluating future long-term renewable purchase opportunities, the City will also consider "the employment growth associated with the construction and operation of eligible renewable energy resources." More specifically, to the extent the City procures new RPS resources in solicitations where qualitative factors are considered, it will include a qualitative assessment of the extent to which proposed project development activities will support this goal. Such determinations will be based on information provided by the prospective supplier and the City's independent assessment of such information. When the City procures RPS resources, it will require bidders to submit information on projected California employment growth during construction and operation. This data will include the expected number of hires, duration of hire, and an indication of whether the bidder has entered into Project Labor Agreements or Maintenance Labor Agreements in California for the proposed project.

Pursuant to Public Utilities Code 399.13(a)(8)(A), the City will also 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."[4] To the extent that the City procures RPS resources through solicitations where qualitative factors are considered, impact on disadvantaged communities will be considered. Such 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 evaluation of responses submitted through CalChoice's 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), LCE may adapt these considerations over time.

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

As described in CalChoice's *Supplier Diversity 2023 Annual Report and 2024 Annual Plan*, the CalChoice members are assessing steps to improve the participation of small, local, and diverse business enterprises, including those owned by women, minorities, disabled veterans, and members of the LGBTQ community ("WMDVLGBTBE"), in CalChoice's renewable solicitations.[5] The City seeks to achieve this goal while complying with the competing requirements of California Proposition 209. In future RPS Procurement Plans, the City, through CalChoice, will consider revising its solicitation protocols, bid evaluation, and supplier selection consistent with this assessment.

Consistent with the direction in the ACR, LCE has provided a copy of its most recent solicitation materials to Commission Energy Division staff. LCE's most recent solicitation information is available at the following website:

https://californiachoiceenergyauthority.com/rfps.

~~https://californiachoiceenergyauthority.com/our-services/.~~

**X.C. LCBF Criteria**

The Least-Cost Best Fit methodologies approved by the Commission pursuant to D.04-07-029, D.11-04-030, D.12-11-016, D.14-11-042, and D.16-12-044 are expressly only directly applicable to IOUs and the Commission does not have jurisdiction over the solicitation protocols of CCAs. However, consistent with Section 399.13(a)(9),[6] LCE considers best-fit attributes that support a balanced mix of resources to help minimize overall renewable energy procurement costs while generally supporting electric grid reliability.

In particular, the City anticipates considering "least cost best fit" ("LCBF") during the

[5] *See* CalChoice *Supplier Diversity 2023 Annual Report and 2024 Annual Plan*, March 1, 2024, at 11.
[6] Cal. Pub. Util. Code § 399.13(a)(9) ("In soliciting and procuring eligible renewable energy resources, each retail seller shall consider the best-fit attributes of resource types that ensure a balanced resource mix to maintain the reliability of the electrical grid.").

evaluation of responses to its future renewable energy solicitation(s). From the City's perspective, use of the term "costs" should appropriately include considerations beyond the basic price of renewable energy. More specifically, costs should include a broad range of considerations, such as: (1) reputational damage resulting from failure to meet state-mandated and/or internally established renewable energy procurement targets; (2) compliance penalties resulting from failed project development efforts or delivery shortfalls; (3) administrative complexities related to dealing with inexperienced suppliers (such as prolonged contract negotiation processes and uncertainties related to project milestone timing and achievement); and (4) impacts to planning certainty resulting from higher risk projects. These factors, as well as various others, will be considered by the City as components of its cost evaluation processes, which may lead to the selection of offers that are not necessarily the lowest cost option(s), as expressed on a dollar-per-MWh basis. With regard to "fit", this aspect of a prospective supply opportunity has as much to do with compatibility (between the City and its suppliers) and alignment with key local objectives as it does with balancing customer usage and expected project deliveries, particularly when considering long-term contracting opportunities that will necessitate a constructive working relationship over a period of ten years or more. The City also interprets the term "fit" to mean the general suitableness of a project opportunity in promoting grid reliability – while the City has no explicit operational or maintenance responsibilities related to the local distribution system serving its customers or the bulk electric system at large, it is aware of the profound importance of supporting grid reliability through its procurement processes. With this in mind, the City will make best efforts to balance the demands of California's rigorous RPS compliance mandates with its interest in promoting such reliability. This is no small task, and the City expects that considerations related to grid

reliability will be incorporated at each stage of its planning and procurement processes but also acknowledges that the full scope of its RPS contract/resource portfolio (including related impacts to grid reliability) will significantly evolve throughout the organizations operating history. Over time, the City expects to thoughtfully assemble a diversified portfolio of RPS contracts/resources that will not only contribute to the City's achievement of applicable compliance mandates but also to improved stability and reliability of California's electric system. As such, the City's LCBF methodology will consider a broad range of components, including those previously noted, balancing a variety of pertinent considerations at the time each renewable purchase opportunity is being evaluated.

Additionally, the requirement of Section 399.13(a)(9) to give preference to renewable projects located in certain communities is expressly only applicable to "electrical corporations" and is not mandatory for CCAs.[7] However, the City 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 as well as the need to bring economic benefits to communities with high levels of poverty and unemployment. Consistent with this recognition, the City will consider the manner in which air pollution may be impacted during its renewable energy solicitation process(es) and related project selection.

## **XI**. **Safety Considerations**

LCE holds safety as a top priority. Since LCE does not own, operate, or control

[7] Cal. Pub. Util. Code § 399.13(a)(8)(1) ("In soliciting and procuring eligible renewable energy resources for California-based projects, each electrical corporation shall give preference to renewable energy projects that provide environmental and economic benefits to communities afflicted with poverty or high unemployment, or that suffer from high emission levels of toxic air contaminants, criteria air pollutants, and greenhouse gases.").

generation facilities, LCE's procurement of renewable resources does not present any unique safety risks. This Section describes how LCE has taken actions to reduce the safety risks posed by its renewable resource portfolio and how LCE supports the state's environmental, safety, and energy policy goals.

As the City pursues future renewable energy purchases, it will consider requiring verbiage addressing adherence (of the seller/project operator) to prudent electrical practices and applicable safety requirements, including compliance with laws and regulations relating to safety. During future contracting efforts, the City will perform an assessment of the supplier's willingness to include such provisions as well as any related impacts to pricing/cost – the City is aware that requesting more stringent processes and/or requirements may trigger requested price increases by the seller/supplier. To the extent that product pricing would meaningfully increase due to the inclusion of such provisions, the City would need to evaluate budgetary impacts and other risks before proceeding. The City is hopeful that most suppliers will be agreeable to the inclusion of such provisions and will be diligent in requesting such language in its future contracts. In addition, LCE has provided additional information below on its existing safety practices.

### XI.1. Wildfire Risks and Vegetation Management

In its existing contracts with renewable generating facilities, LCE ensures that the facility operator complies with all relevant safety requirements associated with the maintenance and operation of the facility. In these agreements, LCE includes contract provisions that require the counter party to operate and maintain the facility in compliance with all relevant laws and prudent operating practices.

At this point in time, the City has yet to adopt specific procurement policies or

preferences focused on the acquisition of forest biomass resources. The City is aware of the mitigating impacts that biomass generators, which use forestry waste as feedstock, may have on wildfire risk and will consider the adoption of a related procurement policy in the future.

In future solicitations, LCE will identify whether any of the bidding generating facilities are located within Tier 2 or Tier 3 of the Commission's Fire-Threat Map. When evaluating executing a contract with a facility located in Tier 2 or Tier 3, LCE will consider requiring the seller to demonstrate that it taken adequate precautions associated with the facility's elevated risks, including specific wildfire prevention and safety measures for any construction, operation, and maintenance activities.

### XI.2. Decommissioning Facilities

To date, the City has not developed any plans or requirements related to the disposition of generating facilities following completion of applicable delivery terms. LCE's contracts with renewable generating facilities generally require that the facility is operated in compliance with all applicable laws and prudent operating practices. The City assumes this broad terminology generally entails the safe disposition of assets following expiration of their useful life (to the extent that the useful life of such facilities expires at the same time as the noted delivery term involving LCE). This noted, the duration of LCE's renewable energy supply commitments is expected to be shorter than the useful life of most, if not all, facilities place under contract, so it will be impractical for LCE to monitor such activities after its relationship with suppliers has ended.

For future contract negotiations, LCE will evaluate requiring the seller to provide a project safety plan or a similar type of reporting document, which will include information on procedures for identifying and remediating safety hazards, as well as describing any relevant

requirements (such as those associated with the permitting of the facility) for the decommissioning of the facility.

### XI.3. Climate Change Adaptation

The City has not adopted procurement policies or preferences relating specifically to climate change risks. In future solicitations, the City will consider developing additional bid evaluation criteria based on climate change risks factors, including but not limited to risks associated with facilities located in regions that are forecasted to be impacted by higher instances of sea-level rise, flooding, wildfires, and/or elevated temperatures.

### XI.4. Impacts During Public Safety Power Shut-off (PSPS) Events

While the City does not have any specific predictions regarding future impacts related to PSPS events, it is likely that a PSPS event impacting the City would marginally reduce retail electric sales for CCA customers and, as a result, would generate a very small increase in the proportionate share of renewable energy supply accruing to the City (if renewable supply agreements continue to perform as expected during such events).

LCE is in the process of evaluating the impact of prior PSPS events on the renewable generating facilities to quantify the amount of generation that was lost due to the facility being taken offline by a PSPS event. LCE is also assessing the risk of the loss of future generation associated with PSPS events both for facilities already online and for facilities under development. LCE's assessment to date is that the total quantity of any PSPS-related reductions in RPS-eligible generation for the facilities in LCE's portfolio have been minimal and are offset by the reduction in retail sales that result from PSPS events that directly impact the City's customers. The material impact to the City's renewable energy planning process or related performance metrics is extremely low.

### XI.5. Biomass Procurement

While LCE has no specific biases (for or against) biomass resources, the prospect of procuring such resources will be dependent upon offers received during future solicitation processes. In fact, the City has already entered into a long-term PCC3 supply agreement, which will be sourced from existing biomass facilities located within California – the RPS procurement opportunity was selected in consideration of: 1) product availability and the suitability of such product in the City's overall RPS supply portfolio; 2) cost-effectiveness; and 3) volumetric predictability (due to the anticipated baseload delivery profile associated with biomass generating resources). To date, biomass procurement opportunities have been limited, relative to other available renewable energy procurement opportunities, and have been comparatively costly (often 150-200% of pricing levels associated with other renewable generating technologies). To the extent that future biomass offers/proposals are competitive (with similar offers received from other resource types) and/or in the event the City adopts policies explicitly supporting the acquisition of biomass energy resources, it will consider further inclusion of biomass energy within its future renewable energy supply portfolio.

## XII. Consideration of Price Adjustment Mechanisms

In the future, and consistent with SB 350 and SB 100, LCE will review the prospect of incorporating price adjustments in contracts with online dates more than 24 months after the date of contract execution. As noted in the ACR, such price adjustments could include price indexing to key components or to the Consumer Price Index.

## XIII. Curtailment Frequency, Forecasting, Costs

This Section responds to the questions presented in Section 6.13 of the ACR[8] and

[8] ACR at 33-34.

describes the City's strategies and experience so far in managing LCE's exposure to negative pricing events, overgeneration, and economic curtailment for LCE's region and portfolio of renewable resources.

### XIII.1. Factors Having the Most Impact on the Projected Increases in Incidences of Overgeneration and Negative Market Price Hours

LCE continues to learn a great deal about the California energy market, including information and considerations related to energy curtailment, potential cost impacts, contracting considerations and other concerns. The following represents LCE's understanding of this topic, which may impact future procurement processes.

Due in large part to the rapid increase in the amount of wind and solar generating facilities that have been brought online throughout the western United States, the California Independent System Operator's ("CAISO") balancing authority area has experienced an increasing frequency and magnitude of curtailment and negative pricing events. The U.S. Energy Information Agency ("EIA") estimates that as of April 2024, California has 37,507 MW of installed solar capacity, with 17,193 MW of that total being behind-the meter solar.[9] The CAISO reports that it has approximately 19,628 MW of utility-scale solar and 8,352 MW of utility-scale wind currently installed within its balancing authority area.[10] This increased capacity results in discrete periods where the generation from wind and solar resources exceeds the total load in the CAISO during those periods. The monthly maximum load served by wind and solar in the CAISO has averaged 78.6% over the past 3 years (May 2021 to May 2024), and

[9] EIA, Electric Power Monthly, *Table 6.2.B. Net Summer Capacity Using Primarily Renewable Energy Sources and by State, April 2024 and 2023 (Megawatts)*, available at: https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=table_6_02_b.
[10] CAISO, What are we doing to green the grid?, updated July 10, 2024, *at* .

in April of 2024 the monthly maximum load served by wind and solar was 109.6 percent,[11] while the maximum 5-minute amount of all renewables serving load was 117.3 percent.[12] To address the resulting instances of over-supply, the amount of curtailment of wind and solar in the CAISO has significantly increased each year from 2015 through 2024, totaling 187,000 MWh in 2015, 308,000 MWh in 2016, 379,510 MWh in 2017, 461,043 MWh in 2018, 965,241 MWh in 2019, 1,586,500 MWh in 2020, 1,504,803 in 2021, 2,449,248 in 2022 and 2,659,527 in 2023.[13] As of July 5, 2024, the total curtailment of solar and wind year to date is 2,860,176 MWh.[14]Curtailment is typically the highest during the months of March, April, and May when hydroelectric generation is historically at its highest. Curtailment levels and percentages for the CAISO, as well as an analysis of negative prices and forecasted curtailments from those negative prices, were presented above in Section VII.

In the CAISO energy markets, much of the curtailment of renewable resources is achieved through the market process because of renewable energy resources voluntarily submitting bids into the energy markets, which cause them to shut down when market conditions create low energy prices. Because of this structure, the curtailment data provided will also be indicative of when negative prices occur. The City recognizes this connection and thus the analysis above in Section VII as to why curtailments are not expected to increase as they have over the past few years will apply to negative prices in a similar manner to curtailments. This has influenced CalChoice's ten-year negative price forecast, which mirrors the frequency of

[11] CAISO, Monthly Renewables Performance Report, May 2024, *available at* https://www.caiso.com/documents/monthly-renewables-performance-report-may-2024.html.
[12] CAISO, Monthly Renewables Performance Report, April 2024, *available at* .
[13] CAISO, Managing Oversupply, Wind and Solar Curtailment Totals, updated May 9, 2023, *available at* http://www.caiso.com/informed/Pages/ManagingOversupply.aspx.
[14] CAISO, Wind and Solar Curtailment, July 5, 2024, *available at* .

historical renewable energy curtailments. As explained elsewhere in this document, the City has taken steps through its contracting to reduce its risk exposure to low prices and curtailment of renewable resources. LCE will continue to monitor this situation to the extent such circumstances are likely to impact contract administration and/or future procurement activities. If prospective renewable generating opportunities are located in areas that are prone to frequent instances of negative market pricing, LCE will be sure to evaluate such data to better understand prospective financial impacts and/or pursue contractual pricing structures that will insulate the CCA program from such risks.

### XIII.2. Written Description of Quantitative Analysis of Forecast of the Number of Hours Per Year of Negative Market Pricing for the Next 10 Years

The City is still in the process of studying how a negative pricing forecast can and should be developed to inform its resource planning process. Considering ongoing changes to the City's RPS supply portfolio and the increased exposure to negative price risk brought about by certain generator-specific purchase commitments, it has evaluated this risk through the assessment presented above in Section VII. The completion of a negative pricing analysis that is not related to specific project operation may provide little if any value or insight to the City at this point in time. However, as described later in this section, the City has worked with CalChoice to construct an initial negative price study to demonstrate the manner in which such issues may be evaluated in the future.

The City has analyzed historical curtailment activities in CAISO and has presented the results of such analysis elsewhere in this Plan, the City has also studied the occurrence of negative prices in CAISO markets since January 2017 (through June 2024). Negative prices in the CAISO market can significantly impact the cost and overall value of renewable generating assets, particularly if such generating resources are reflected in supply agreements that apply

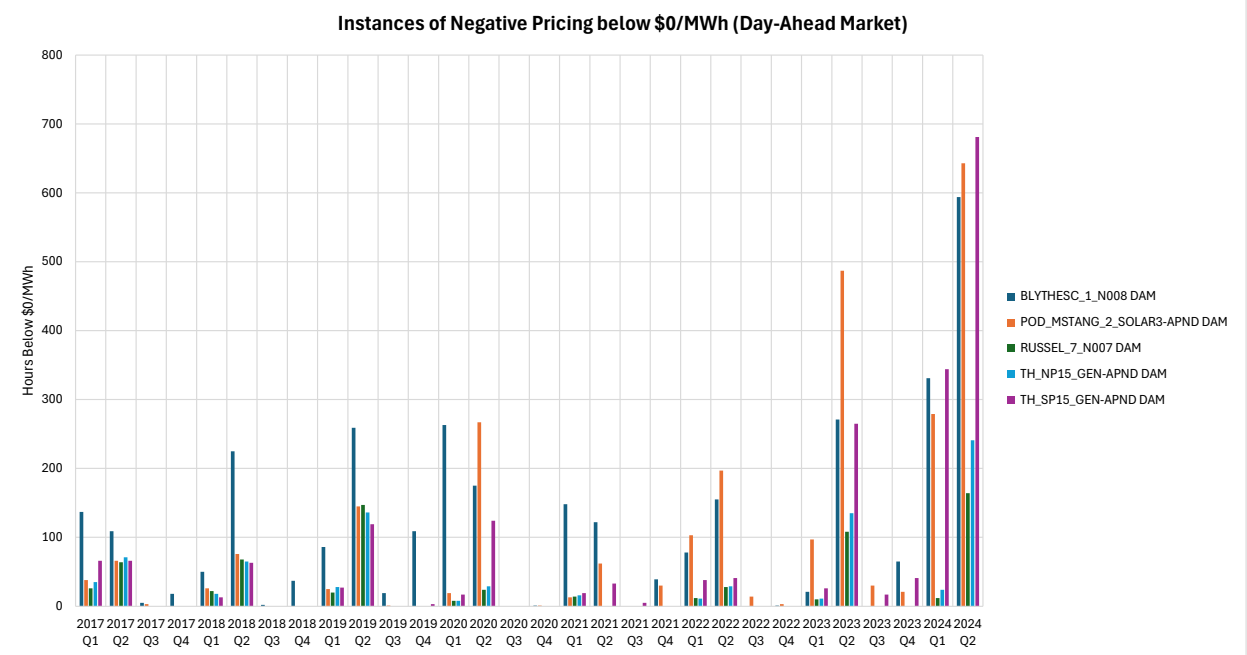
market-based settlement mechanisms to determine charges assessed to the buyer. With this in mind, it is important that the City consider the siting of prospective renewable generating resources to avoid taking on unforeseen costs or lower than expected delivered energy quantities, which may result from economic curtailments. For this reason, the City has endeavored to quantify the potential occurrence of negative pricing events within certain areas of the state that are known to include significant levels of renewable generating capacity. While the City has limited exposure to such risks (by virtue of its current RPS contract portfolio), it is expected to experience exposure to negative price risk as its RPS contract portfolio evolves with time. To improve its understanding of these risks, the City has assembled a historic negative pricing analysis. The City notes that moderately negative prices – between zero and negative $40/MWh – are not expected to trigger meaningful economic curtailments in the near term, as the cost of procuring replacement RPS supply under index-plus pricing arrangements would likely be equivalent in cost; in such instances, there would be little sense for the City to curtail renewable energy deliveries.

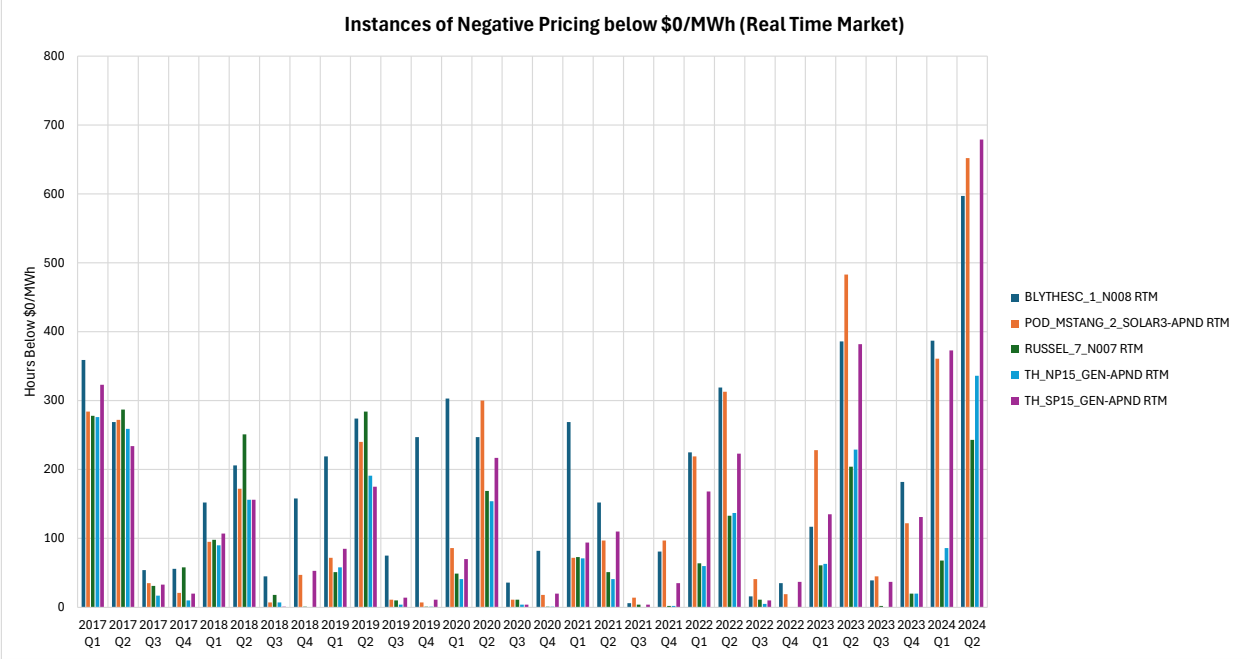
Below are several charts which illustrate the number of potential historic curtailment events that could have been triggered when nodal prices fell below zero and also negative $40/MWh (CalChoice's prescribed pricing benchmark that was applied to identify potential economic curtailment incidents under this methodology). Estimates for the real-time market 2,860,176 MWh.[15]

When reviewing the information in these charts, it is clear that instances of negative pricing are trending up in recent years with the largest frequency of "curtailable hours" occurring in Q2 of 2024 (a time of year when curtailments generally tend to increase due to moderate

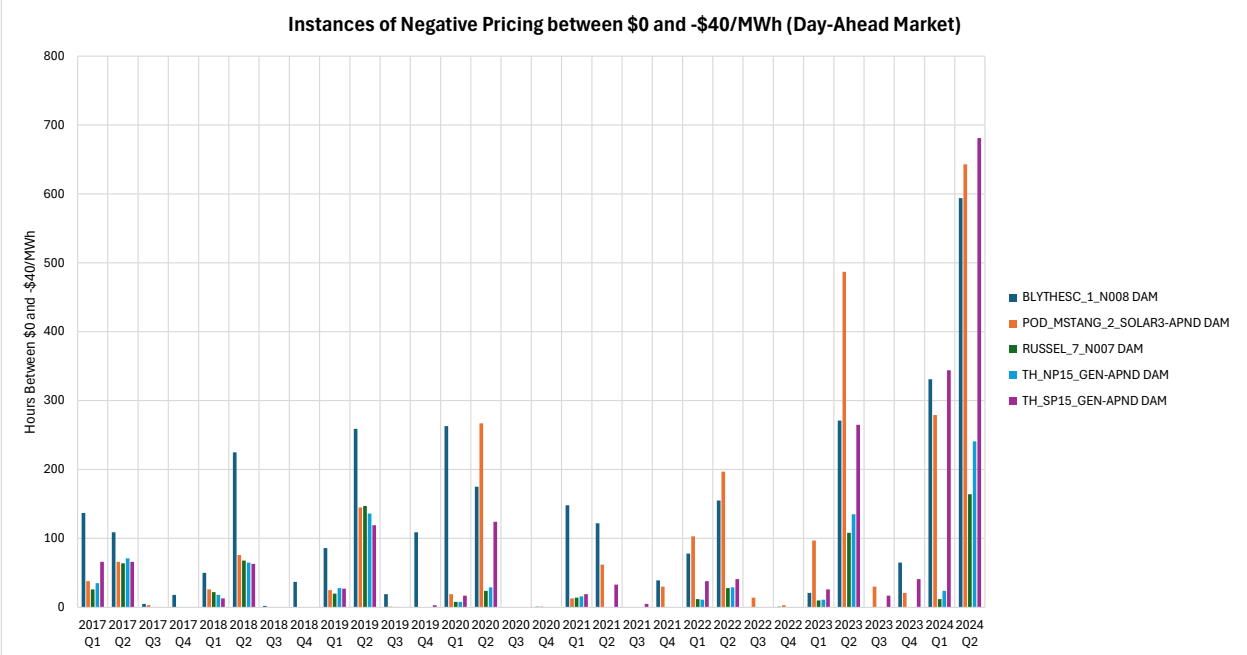
[15] CAISO, Wind and Solar Curtailment, July 5, 2024, *available at* https://www.caiso.com/documents/wind-solar-real-time-dispatch-curtailment-report-jul-05-2024.pdf.

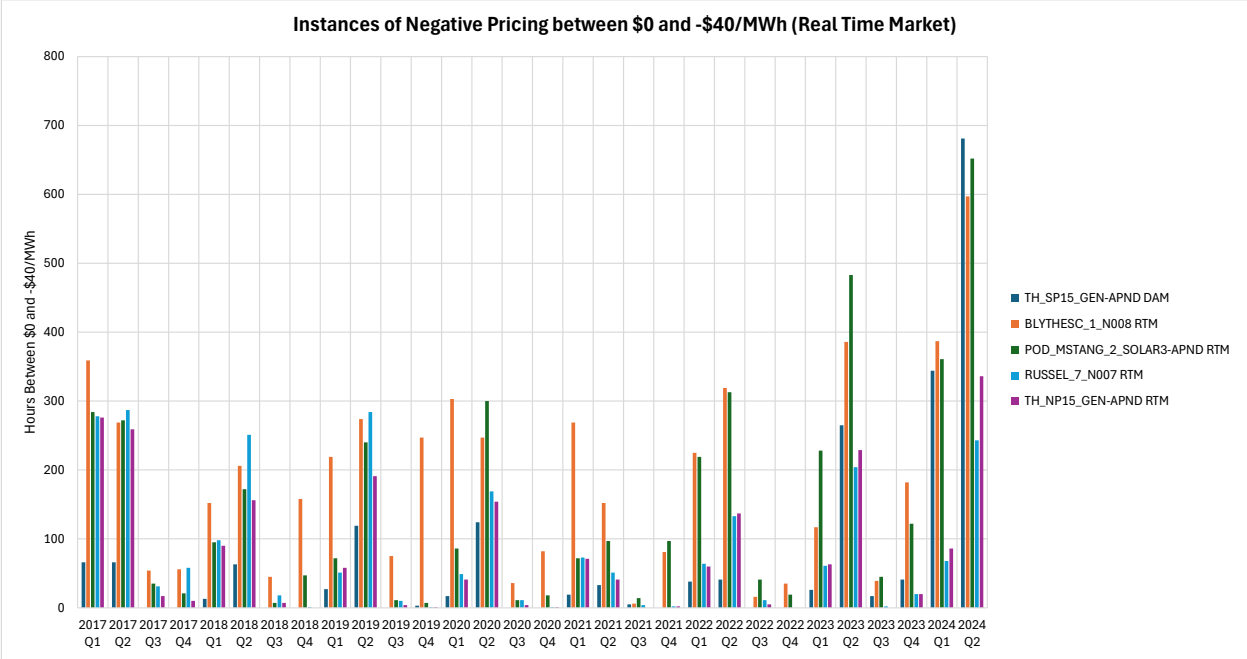
temperature, prevalent hydro runoff and relative strong production from photovoltaic solar resources). While ongoing infrastructure buildout, including increased levels of battery storage may mitigate these trends over time, the City is aware that its own renewable energy contracting efforts should emphasize the inclusion of storage to insulate the organization from such risks. The City observes that it may not be possible to avoid all possible negative price (and potential curtailment) risk, but the inclusion of battery storage infrastructure when contracting for renewables will be an important mitigating factor. The following charts summarize instances of negative pricing (below zero $/MWh) in the day-ahead and real time markets since 2017.





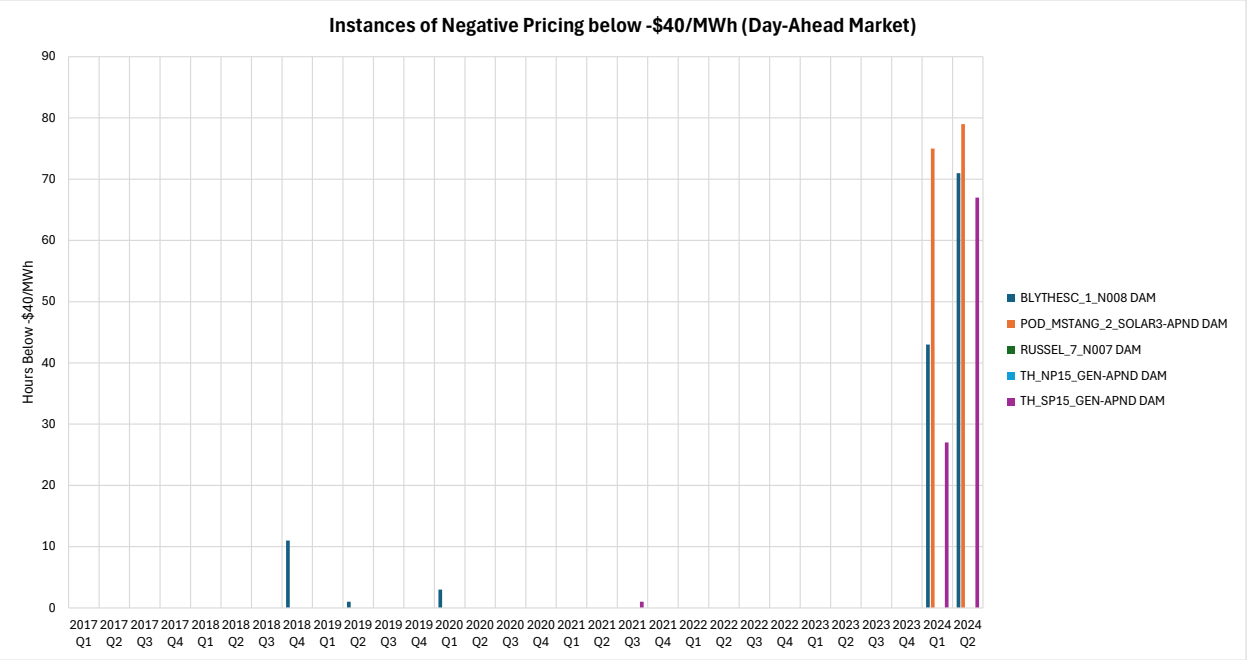

The following charts illustrate instances of negative pricing between zero and negative $40/MWh. When comparing this data to incidents of negative pricing in the previous charts (below zero $/MWh), the numbers are very similar, which suggests that instances of pricing below negative $40/MWh remain fairly rare. This observation suggests that the City's prospective bid floor of negative $40/MWh would protect the organization from most instances in which curtailment could occur – if ongoing negative pricing trends do not meaningfully differ from this historical data set, the City should be at limited risk of losing significant levels of RPS production through its curtailment decisions in the future.

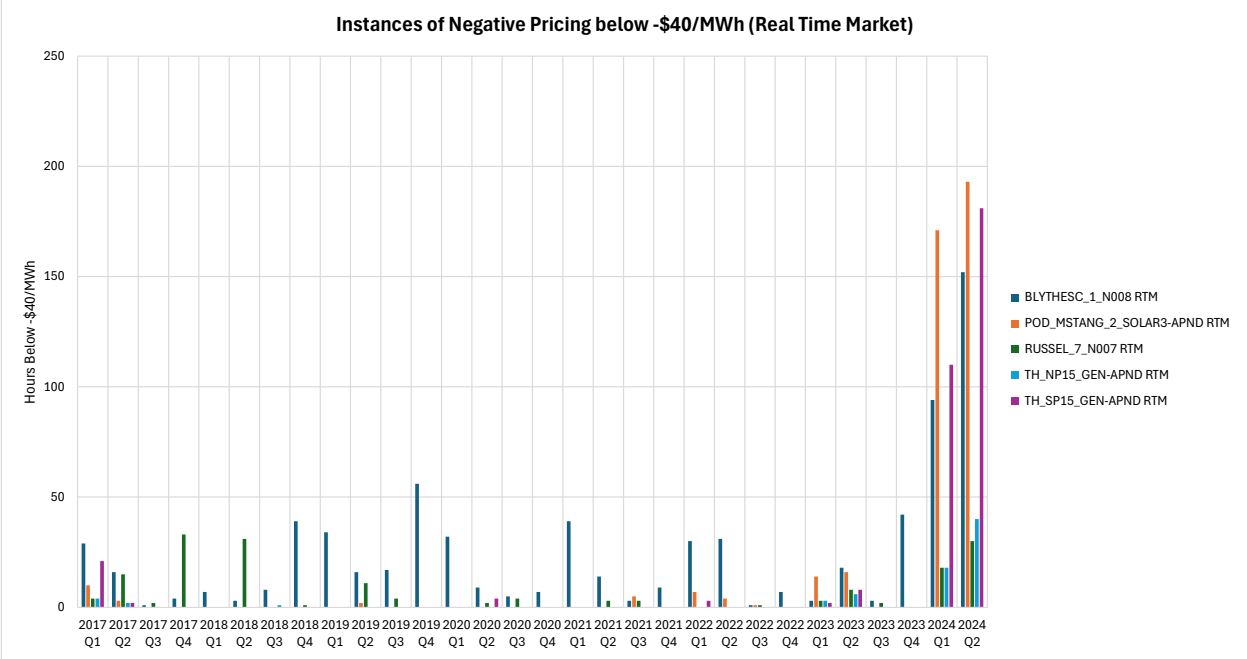



Finally, the City evaluated instances of historical negative pricing below negative $40/MWh and identified very limited instances in which such circumstances occurred. Until 2024, negative pricing below negative $40/MWh was a very rare occurrence in both the day-ahead and real time markets. It seems reasonable to assume that ongoing renewable infrastructure buildout, coupled with relatively strong hydro runoff in early 2024 has contributed

to this transition, but the City will continue to monitor these circumstances over time to determine if this trend holds or if instances of negative pricing subside. Regardless, the subject of negative pricing is an important topic for the City, and the organization will continue to monitor related market trends to determine if further action, including resource planning and procurement adaptations impacting RPS supply, may be necessary to protect against such risks (if recent trends continue into the future).





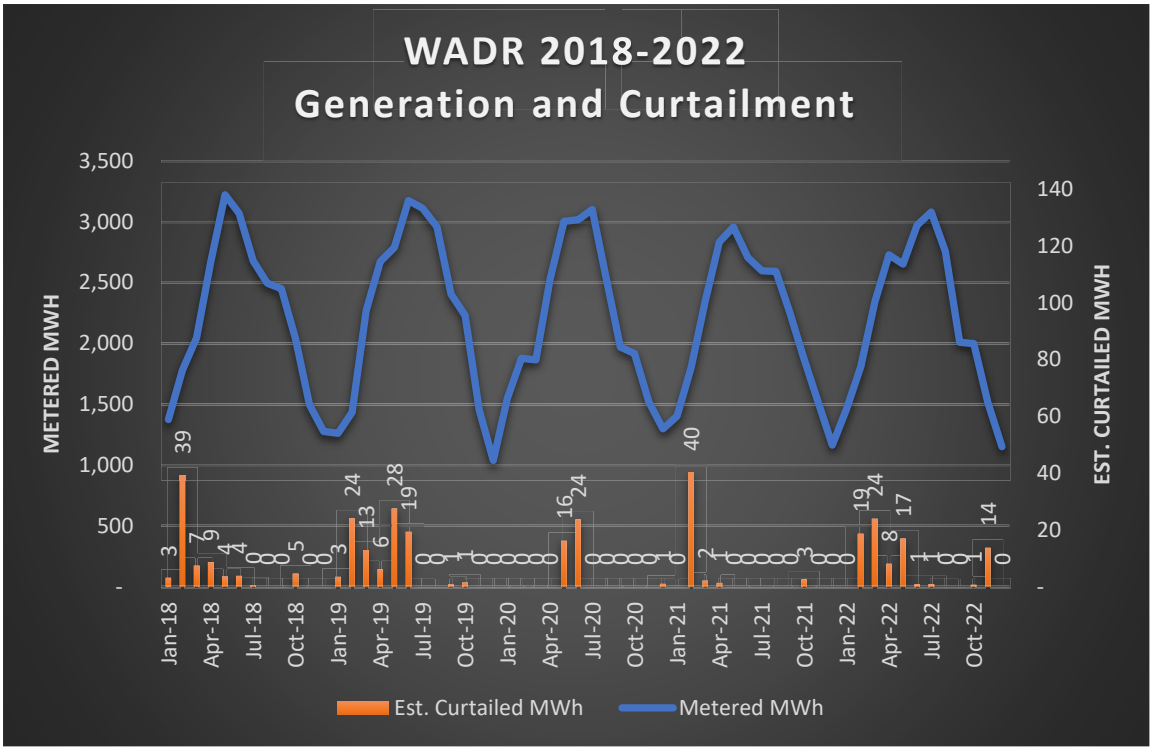

### XIII.3. Experience, to Date, With Managing Exposure to Negative Market Prices and/or Lessons Learned from Other Retail Sellers in California

Based on LCE's existing renewable energy supply agreements, historical renewable energy deliveries have utilized index-plus pricing structures and fixed/firm volumetric commitments. As such, the City has not been exposed to negative price risk (related to its renewable supply portfolio) and has not needed to manage exposure to negative market prices. This approach to renewable energy contracting was deliberate, allowing the City to build operational experience and knowledge regarding California's energy market before pursuing contract structures that required a deeper understanding of market tendencies, increased data analysis and more intensive coordination with renewable energy suppliers.

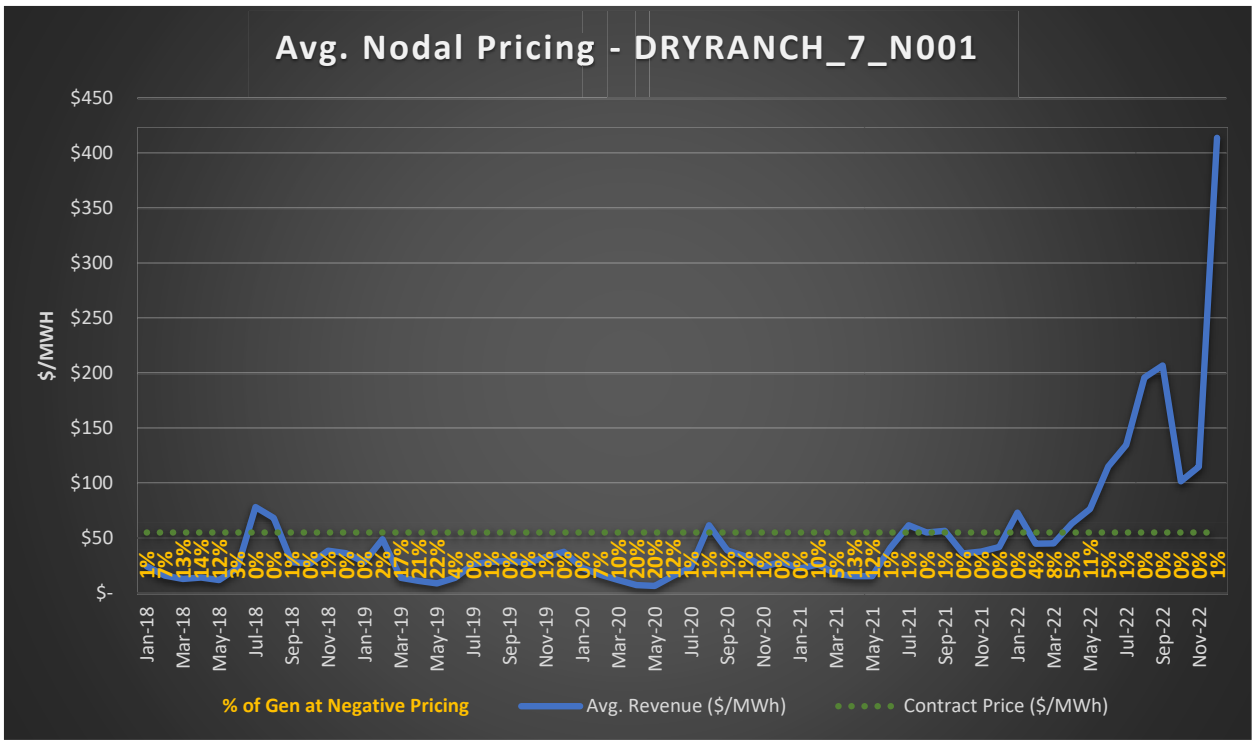
However, LCE's first long-term power purchase agreement with the 10 MW Western Antelope Dry Ranch ("WADR") photovoltaic solar facility, which is located in Lancaster, is a longer-standing supply agreement settled on a "fixed price" or "aggregated price" basis, but it has only experienced limited instances of negative pricing at certain points throughout its

operating history. Recent data suggests that such instances are more frequent during the Spring season (months of February, March, April and May) and, consistent with LCE's observations regarding curtailment reflected in Section XIII.1, indicates that suppressed pricing generally results from relatively strong solar production throughout the region, coupled with comparatively low energy usage (when moderate seasonal temperatures prevail). To the extent that California experiences strong regional hydroelectric production/imports, negative pricing pressures may be exacerbated.

Based on 2018, 2019, 2020, 2021, and 2022 historical data, CalChoice observed that negative prices have impacted facility generation during 2% to 22% of solar-producing hours during the months of February, March, April, and May. Negative pricing in other months is far less prevalent, affecting facility generation on a limited basis (occurring during zero to 10% of hours in which facility generation has occurred). In terms of curtailment, LCE has developed a bidding strategy with its scheduling coordinator that limits exposure to negative pricing based on a pre-determined bid floor (meaning, a pre-determined negative price, below which facility generation would be curtailed), but LCE has only experienced facility curtailments totaling 337 MWh over the aforementioned five-year period, or 0.3% of total potential energy production (which approximates 132,000 MWh during this same five-year period). The impacts of curtailment/negative pricing costs incurred by LCE have been similarly limited. The following chart indicates total monthly generation from the WADR facility during the 2018, 2019, 2020, 2021, and 2022 calendar years as well as estimated monthly curtailed MWh (note the differences in scale reflected on each axis).




Adjacent nodal pricing also remains relatively strong, despite substantial solar generation within the region. Average energy pricing at the DRYRANCH_7_N001 node, the basis for WADR energy settlements, continues to show limited incidents of negative pricing. Over the five-year period reflected in CalChoice's analysis, average revenues collected by LCE for WADR-generated electricity are $47.16/MWh, an average that was bolstered by incredibly high prices at the aforementioned node during 2022. The following chart reflects average nodal pricing during the 2018, 2019, 2020, 2021, and 2022 calendar years as well as the percentage of WADR generation occurring during periods of negative pricing.




Over time, CalChoice will continue monitoring pricing and curtailment data to determine if regional grid conditions are materially changing – five years is a relatively brief period of time for such an analysis, particularly when the composition of resources interconnected to California's bulk electric system continues to undergo significant changes, and while LCE finds this information to be helpful, it is also mindful that such changes may substantially alter the trajectory of pricing data at this node. To the extent that negative prices become more severe (meaning, more deeply negative), LCE may adapt its bidding strategy to limit potential financial impacts to its CCA program. Curtailed energy volumes will also be monitored over time, but based on MWh curtailed to date, LCE does not foresee any imminent concerns impacting its achievement of compliance with RPS procurement mandates.

With this information in mind, LCE has incurred limited exposure to negative price risk (related to its renewable supply portfolio) and, as a result, has been limited in its need to manage exposure to negative market prices. This approach to renewable energy contracting was

deliberate, allowing LCE to build operational experience and knowledge regarding California's energy market before pursuing contract structures that required a deeper understanding of market tendencies, increased data analysis and more intensive coordination with renewable energy suppliers. When LCE pursues future supply agreements that could expose the organization to such risk, and before such procurement opportunities are executed, LCE will consult with CalChoice to perform pertinent analyses that will be intended to bound prospective exposure (in terms of frequency and potential overall cost) related to negative pricing; such analyses will be updated over time, similar to the manner in which the aforementioned WADR analysis has been updated within successive planning documents.

Based on information/data derived through such analyses, LCE will coordinate with CalChoice and its scheduling coordinator to develop a bidding strategy, if deemed necessary, that would create desired limitations to such negative price risk, acknowledging however, that any curtailment decisions (related to negative pricing) would reduce the expected quantity of renewable energy to be received from such contracts – such circumstances could necessitate supplemental procurement, if meaningful delivery shortfalls occur.

As for lessons learned from other retail sellers, the City is aware that negative pricing can be particularly punitive in certain geographic regions, so it will need to carefully evaluate any new renewable supply opportunities in consideration of such risk or pursue contract structures – the City is aware that pursuing firm/fixed delivery quantities, as opposed to as-available supply arrangements, can meaningfully reduce, if not entirely eliminate, concerns related to negative pricing (and related decisions to pursue curtailment). If the City gains additional insight based on future experience/exposure to negative pricing, it will share such information, if required to do so, in a future RPS Procurement Plan.

### XIII.4. Direct Costs Incurred, to Date, for Incidences of Overgeneration and Associated Negative Market Prices

As described above, the index-plus structures of LCE's existing contracts have prevented LCE from incurring any meaningful direct costs related to overgeneration or negative pricing. As LCE enters into contracts with different structures and monitors existing contracts that rely on market-based settlement mechanisms, LCE will update its RPS Procurement Plan to reflect any associated change relating to costs associated with overgeneration and negative pricing.

### XIII.5. An Overall Strategy for Managing the Overall Cost Impact of Increasing Incidences of Overgeneration and Negative Market Prices

While curtailment is a viable renewable integration strategy that may be more cost-effective than other options, there are potential negative consequences from excessive curtailment. Curtailment of solar and wind represents a lost opportunity to generate zero GHG emitting electricity, and excessive curtailment could impact the ability of the state to meet its environmental and energy policy goals. Additionally, these over-supply situations expose ratepayers to increased costs because their load serving entities must either economically curtail the generating resource (and often pay for the electricity that was not generated) or generate power and be exposed to negative prices. Because these conditions are largely driven by state policy, it is appropriate to consider macro-level mitigation measures through CAISO initiatives, Commission rulemakings, and possibly even legislation. There are a number of measures and policies that have already been implemented or are currently being pursued that will have significant impacts on how substantial curtailment will be in the future. This includes the expansion of the Energy Imbalance Market, improvements to the CAISO market design and structure, enhanced forecasting capabilities, time of use rates, improved electric vehicle charging functionalities, and smart deployment of distributed energy resources. The Commission's Integrated Resource Plan ("IRP") proceeding will be an appropriate forum to measure the impact

of these policies and the effect that they will have on future curtailment. These new measures will need to be modeled and incorporated into forecasts of future curtailment.

LCE will consider the impact of curtailment and negative pricing on its individual portfolio and will factor potential curtailment into its long-term planning, as appropriate. Due to the difficulty in accurately forecasting curtailment, LCE will review available historical data on curtailment (such as the data on curtailments in the CAISO present above in Section VII) and negative pricing within regions where LCE may contract for generating resources. As the City is now taking additional renewable energy deliveries under more recently executed supply agreements, it will more closely monitor historical market prices in proximity to related generating facilities – if instances of negative pricing become more prevalent in the months leading up to delivery commencement, , LCE may impute risk-related adjustments in its planning assumptions. In future contracting efforts, LCE will remain aware of curtailment risk (stemming from instances of over-generation and related negative pricing) and will evaluate pertinent data to better understand the potential frequency of curtailment activities, including an assessment of historical pricing related to the point(s) of delivery that will be applicable in such supply agreements. While LCE has not yet developed an individualized forecast of future curtailment for any particular project opportunity or technology type, LCE will factor potential curtailment into its minimum margin of procurement (described in Section IX) and may also factor this consideration in future iterations of its Risk Assessment (Section VII). To the extent that LCE is engaged in renewable supply agreements which include curtailment provisions, it will take actions to limit the impacts of curtailment on its ratepayers and progress in meeting pertinent compliance mandates. During its current and future renewable contracting efforts, LCE will continue to pursue contract terms that recognize and limit the potential financial impacts of

negative pricing and provide LCE greater flexibility to direct economic curtailment, if this becomes necessary.

### XIII.6. Contract Terms Included in RPS Contracts Intended to Reduce the Likelihood of Curtailment or Protect Against Negative Prices.

As discussed previously, LCE has incorporated terms in its contracts to limit consequences from negative prices. These include contracts with fixed quantities of RPS resources, and contracts with penalties for failure to deliver required amounts of RPS energy. An example of such language included in LCE contracts is:

> **Guaranteed Energy Production**: Seller shall be required to deliver to Buyer no less than the Guaranteed Energy Production (as defined below) in each two (2) Contract Year block (as opposed to rolling) period during the Delivery Term ("**Performance Measurement Period**"). "**Guaranteed Energy Production**" means an amount of Product, as measured in MWh, equal to one-hundred fifty percent (150% of the average Expected Energy (as set forth on the Cover Sheet) for each Performance Measurement Period. The calculation will be performed once each Performance Measurement Period, beginning with the second anniversary of the Delivery Term Start Date.

## XIV. Cost Quantification

LCE has provided an updated Cost Quantification Table as Appendix E, which reflects renewable energy supply commitments that have been executed since submittal of its prior RPS Procurement Plan. Pursuant to direction in the ACR, the City has entered pertinent data in Appendix E.

## XV. Conformance with IRP Proceeding

The resources identified in this RPS Procurement Plan are consistent with the resources identified in LCE's most recent IRP, which was approved by LCE's governing board and

provided to the Commission for certification on November 1, 2022, which was subsequently updated on October 16, 2023. As required by the ACR,[16] LCE includes the following table that describes how LCE's RPS Procurement Plan conforms with the determinations made in the IRP Proceedings (R.16-02-007 and R.20-05-003). To the extent there are changes related to the IRP that would impact information reflected in this table or elsewhere in this RPS Procurement Plan, the City will further describe such items in a subsequent planning document, as appropriate.

| IRP Section Subsection | RPS Alignment in IRP | |
|---|---|---|
| **III. Study Results**<br>**A. Conforming and Alternative Portfolios** | Retail sellers should explain how the RPS resources they plan to procure, outlined in their RPS Plan, will align with each of their Conforming Portfolios being developed in their IRP Plans for Commission approval and certification. This should include: | |
| | *1. Existing RPS resources that the retail seller owns or contracts.*<br>*2. Existing RPS resources that the retail seller plans to contract with in the future.*<br>*3. New RPS resources that the retail seller plans to invest in.*<br>*4. New and existing resources that will be used to meet Mid-Term Reliability obligations adopted in D.21-06-035 and the supplemental procurement ordered in D.23-02-040.* | As part of its 2022 IRP filing, LCE submitted two Preferred Conforming Portfolios that achieve its proportional share of both the 30 and 25 MMT GHG targets. LCE continues to build out its portfolio of long-term RPS supply contracts that will contribute to the achievement of its IRP-based planning goals. The new and existing resources noted below reflect those that LCE intends to contract with over time. Such procurement efforts are expected to contribute to the achievement of relevant GHG targets as well as RPS procurement requirements, including the 65% long-term contracting requirement.<br>Description of Conforming Portfolios:<br>• 30 MMT Conforming Portfolio: Portfolio that achieves LCE's proportional share of a 30 MMT statewide GHG target.<br>• This portfolio includes the following new and existing RPS resources as well as other resources required to achieve assigned emission and reliability metrics:<br>o Battery Storage (MWh Energy Capacity, |

[16] ACR at 30-33.

| | | |
|---|---|---|
| | | Under Development): 18.77<br>o Battery Storage (MWh Energy Capacity, Owned or Contracted): 7.83<br>o Battery Storage (MWh Energy Capacity, Planned New): 306.4<br>o Battery Storage (MWh Energy Capacity, Under Review): 60<br>o Biomass (GWh, Planned Existing): 5<br>o Geothermal (GWh, Owned or Contracted): 0.99<br>o Geothermal (GWh, Planned Existing): 25<br>o Geothermal (GWh, Planned New): 65.7<br>o Geothermal (GWh, Under Review): 24.01<br>o Hybrid or Paired Solar and Battery (GWh, Planned New): 56<br>o Large Hydro (GWh, Owned or Contracted): 13.27<br>o Large Hydro (GWh, Planned Existing): 108<br>o Small Hydro (GWh, Owned or Contracted): 0.5<br>o Small Hydro (GWh, Planned Existing): 10<br>o Solar Existing California (GWh, Owned or Contracted): 75.33<br>o Solar Existing California (GWh, Planned Existing): 30<br>o Wind Existing California (GWh, Owned or Contracted): 69.11<br>o Wind Existing California (GWh, Planned Existing): 40<br>o Wind New Mexico (GWh, Owned or Contracted): 15.3<br>o Wind Wyoming (GWh, Planned New): 35<br>o Wind Offshore Morro Bay (GWh, Planned New): 65<br>• In addition, LCE's 30 MMT Conforming Portfolio includes the following the capacity-only resources:<br>o CAM, Demand Response and Energy Efficiency Allocations: 38 MW<br>o Existing natural gas, baseload, and other (planned procurement): 290 MW |

| | | |
|---|---|---|
| | | • 25 MMT Conforming Portfolio: Portfolio that achieves LCE's proportional share of a 25 MMT statewide GHG target.<br>• This portfolio includes the following new and existing RPS resources:<br>o Battery Storage (MWh Energy Capacity, Under Development): 18.77<br>o Battery Storage (MWh Energy Capacity, Owned or Contracted): 7.83<br>o Battery Storage (MWh Energy Capacity, Planned New): 306.4<br>o Battery Storage (MWh Energy Capacity, Under Review): 60<br>o Biomass (GWh, Planned Existing): 5<br>o Geothermal (GWh, Owned or Contracted): 0.99<br>o Geothermal (GWh, Planned Existing): 25<br>o Geothermal (GWh, Planned New): 65.7<br>o Geothermal (GWh, Under Review): 24.01<br>o Hybrid or Paired Solar and Battery (GWh, Planned New): 56<br>o Large Hydro (GWh, Owned or Contracted): 13.27<br>o Large Hydro (GWh, Planned Existing): 121<br>o Small Hydro (GWh, Owned or Contracted): 0.5<br>o Small Hydro (GWh, Planned Existing): 10<br>o Solar Existing California (GWh, Owned or Contracted): 75.33<br>o Solar Existing California (GWh, Planned Existing): 30<br>o Wind Existing California (GWh, Owned or Contracted): 69.11<br>o Wind Existing California (GWh, Planned Existing): 40<br>o Wind New Mexico (GWh, Owned or Contracted): 15.3<br>o Wind Wyoming (GWh, Planned New): 35<br>o Wind Offshore Morro Bay (GWh, Planned New): 65 |

| | | |
|---|---|---|
| | | • In addition, LCE's 25 MMT Conforming Portfolio includes the following the capacity-only resources:<br>o CAM, Demand Response and Energy Efficiency Allocations: 38 MW<br>o Existing natural gas, baseload, and other (planned procurement): 288 MW<br><br>Meeting the Mid-Term Reliability obligations from D.21-06-035:<br><br>LCE participated in the Joint CalChoice, Desert Community Energy Authority, and Clean Energy Alliance Mid-Term Reliability Request for Proposals. One contract was successfully secured with a new-build geothermal resource, which is expected to achieve commercial operation in mid-2026 (additional detail provided above); in addition to its prior contracting efforts, the City, through its relationship with CalChoice, recently participated in a solicitation for long-term RPS supply and incremental resource adequacy capacity (to fulfill certain portions of its assigned mid-term reliability and supplemental mid-term reliability purchase obligations), which was issued on March 27, 2023. As a result of this solicitation process, CalChoice identified two short-listed respondents. One respondent proposed a renewable energy plus storage (co-located) project; the other proposed a stand-alone resource adequacy project. Because negotiations remain ongoing with each short-listed respondent, no further details can be provided at this time. When negotiations are complete, CalChoice will advise the Commission of pertinent details and planning impacts associated with any executed supply agreements stemming from this process. If |

| | | |
|---|---|---|
| | | successfully completed, both projects would promote LCE's achievement of specified incremental capacity procurement mandates. |
| **IV. Action Plan**<br>**A. Proposed Activities** | Retail sellers should describe how they propose to use RPS resources to implement both Conforming Portfolios. Narratives should include: | |
| | *1. Proposed RPS procurement activities as required by Commission decision or mandated procurement.*<br>*2. Procurement plans, potential barriers, and resource viability for each new RPS resource identified.* | To ensure compliance with its GHG and RPS targets, LCE plans to substantially rely on GHG-free and RPS-eligible resources while contributing to statewide reliability requirements and responsibly managing overall portfolio costs. This approach is generally consistent between the 30 MMT Conforming Portfolio and 25 MMT Conforming Portfolio in the 2022 IRP Plan.<br>In its IRP, LCE also established that its planned incremental capacity exceeds its pro rata share of capacity that may be needed for replacement of Diablo Canyon. These resources are further described in LCE's 2022 IRP.<br>LCE expects to administer future solicitation processes to fill outstanding resource needs required to meet portfolio specifications reflected in its 30 MMT and 25 MMT Preferred Conforming Portfolio as well as ongoing RPS procurement obligations. As noted elsewhere in this RPS Procurement Plan, LCE will update the Commission with regard to the outcomes of its current long-term RPS contract negotiations in a future iteration of this planning process.<br>LCE does not foresee any barriers or viability concerns related to its requisite resource commitments but will advise the Commission if this impression changes over time. |
| **IV. Action Plan**<br>**B. Procurement Activities** | The retail seller should describe the solicitation strategies for the RPS resources that will be included in both Conforming Portfolios. This description should include: | |
| | *1. The type of solicitation.*<br>*2. The timeline for each solicitation.* | LCE may participate in distinct solicitations for different products (for example: specific renewable energy products, generating resources or storage infrastructure), or it may choose to solicit multiple |

| | | |
|---|---|---|
| | *3. Desired online dates.*<br>*4. Other relevant procurement planning information, such as solicitation goals and objectives.* | products in the same solicitation. These solicitations will be competitive and may be similar to LCE's initial long-term RPS solicitation, which was previously described in this RPS Procurement Plan.<br>LCE will administer future solicitations, as necessary, to promote consistency with the resource development plan identified in the IRP (for purposes of promoting achievement with state-mandated RPS targets as well as LCE's internal targets). As noted above, LCE anticipates administering upcoming solicitation activities consistent with the process and timeline described in Section II.<br>During administration of future procurement processes, LCE will utilize the evaluative and contract management processes (further described above in Section X and elsewhere in this Plan) to promote timely project completion and improve planning certainty. |
| **IV. Action Plan**<br>**C. Potential Barriers** | Retail sellers should provide a summary of the potential barriers to implementing both Conforming Portfolios as they relate to RPS resources. The section should include: | |
| | *1. Key market, regulatory, financial, or other resource viability barriers or risks associated with the RPS resources coming online in retail sellers' Preferred Portfolios.*<br>*2. Key risks associated with the potential retirement of existing RPS resources on which the retail seller intends to rely in the future.* | LCE does not expect any procurement barriers to impede its future contracting for new renewable energy resources, but notes that even though a balanced, diverse RPS portfolio is desirable, the limited resource availability and lead time required for some technology types may necessitate planning flexibility. LCE also observes that the rigorous demands of California's RPS program, particularly the currently effect 65 percent long-term contracting mandate, may necessitate contracting activities with a portfolio of resources that will evolve considerably over time – more specifically, LCE may need to pursue initial supply commitments with a portfolio of resources that does not exactly reflect its eventual/ideal characteristics related resource diversity and/or reliability. Pursuit of such portfolio characteristics will continue to be a work in progress during LCE's first several procurement efforts and will evolve throughout the upcoming planning period. |

| | | |
|---|---|---|
| | | The key risk affecting LCE's achievement of the 30 MMT and 25 MMT Preferred Conforming IRP Portfolios in the 2022 IRP Plan – while LCE intends to contract with highly experienced and qualified project developers (when new-build resources are deemed necessary), there is always a limited risk of project failure.<br><br>In consideration of LCE's existing RPS contract negotiation processes that will support achievement of the Preferred Conforming IRP Portfolios, it does not have any substantive concerns regarding its ability to achieve levels of renewable energy procurement that will be required to satisfy pertinent RPS mandates or IRP targets. If such concerns happen to change in the future, LCE will accordingly notify the Commission in a subsequent iteration of this planning process. |

**XVI. Impact of Transmission and Interconnection Delays**

SB 1174 (stats. 2022, ch. 229) requires electrical corporations that own transmission lines to report to the Commission on the development of transmission and interconnection facilities necessary to provide transmission deliverability for renewable energy and/or energy storage facilities that have executed interconnection agreements. The City is not subject to the requirements of SB 1174 and does not own any transmission lines. Accordingly, the City has not included a Transmission/Interconnection Delay Data Report as an attachment to this RPS Procurement Plan.

Dated: January 23, 2025~~July 19, 2024~~

Respectfully submitted,

*/s/ Trolis Niebla~~Jason Caudle~~*

Trolis Niebla~~Jason Caudle~~
City Manager
City of Lancaster
44933 Fern Avenue
Lancaster, CA 93534
(661) 723–6010
tniebla~~jcaudle~~@cityoflancasterca.org

# Appendix B

## Final 2024 RPS Procurement Plan Checklist and Verification

**Final 2024 RPS Procurement Plan Checklist- Task Completed**

| **Retail seller name: Lancaster Choice Energy** | **YES/NO** | **NOTES** |
|---|---|---|
| I. Major Changes to RPS Plan | YES | |
| II. Executive Summary | YES | |
| III. Summary of Legislation Compliance | YES | |
| IV. Assessment of RPS Portfolio Supplies and Demand | YES | |
| IV.A. Portfolio Supply and Demand | YES | |
| IV.A.1. Portfolio Optimization | YES | |
| IV.B. Responsiveness to Local and Regional Policies | YES | |
| IV.B.1 Long-term Procurement | YES | |
| IV.C. Portfolio Diversity and Reliability | YES | |
| IV.D. Lessons Learned | YES | |
| V. Project Development Status Update | YES | |
| VI. Potential Compliance Delays | YES | |
| VII. Risk Assessment | YES | |
| VIII. Renewable Net Short Calculation | YES | |
| IX. Minimum Margin of Procurement (MMoP) | YES | |
| IX.A. MMoP Methodology and Inputs | YES | |
| IX.B. MMoP Scenarios | YES | |
| X. Bid Solicitation Protocol | YES | |
| X.A. Solicitation Protocols for Renewables Sales | YES | |
| X.B. Bid Selection Protocols | YES | |
| X.C. LCBF Criteria | YES | |
| XI. Safety Considerations | YES | |
| XII. Consideration of Price Adjustments Mechanisms | YES | |
| XIII. Curtailment Frequency, Forecasting, Costs | YES | |
| XIV. Cost Quantification | YES | |
| XV. Coordination with the IRP Proceeding | YES | |
| XVI. Impact of Transmission and Interconnection Delays | N/A | |
| Appendix A: Redlined Version of the Final 2024 RPS Plan | YES | |

## Officer Verification

I am an officer of the reporting organization herein and am authorized to make this verification on its behalf. The statements in the foregoing document are true of my own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, I believe them to be true. The spreadsheet templates used within this filing have not been altered from the version issued or approved by Energy Division.

Executed on January 23, 2025 at Lancaster, California.

*/s/ Trolis Niebla*

Trolis Niebla
City Manager
City of Lancaster
44933 Fern Avenue
Lancaster, CA 93534
(661) 723–6010
tniebla@cityoflancasterca.org

# Appendix C

## Renewable Net Short Calculation

# Renewable Net Short Calculations - 2024 RPS Procurement Plans

| | |
|---|---|
| **LSE Name:** | Lancaster Choice Energy |
| **Date Filed:** | 1/23/25 |

Input required | No input required | Hard-coded

| Variable | Calculation | Item | 2017 Actual | 2018 Actual | 2019 Actual | 2020 Actual | 2017-2020 | 2021 Actual | 2022 Actual | 2023 Actual | 2024 Forecast | 2021-2024 | 2025 Forecast | 2026 Forecast | 2027 Forecast | 2025-2027 | 2028 Forecast |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Forecast Year | | | | | CP 3 | | | | 1 | CP 4 | 2 | 3 | 4 | CP 5 | 5 |
| | | **Annual RPS Requirement** | | | | | | | | | | | | | | | |
| A | | **Total Retail Sales (MWh)** | **591,021** | **580,447** | **545,556** | **588,054** | **2,305,078** | **615,369** | **616,864** | **530,200** | **603,262** | **2,365,695** | **606,088** | **610,890** | **616,136** | **1,833,114** | **622,374** |
| B | | RPS Procurement Quantity Requirement (%) | 27.0% | 29.0% | 31.0% | 33.0% | 30.0% | 35.8% | 38.5% | 41.3% | 44.0% | 39.8% | 46.7% | 49.3% | 52.0% | 49.3% | 54.7% |
| C | A*B | **Gross RPS Procurement Quantity Requirement (MWh)** | **159,576** | **168,330** | **169,122** | **194,058** | **691,085.6** | **219,995** | **237,492** | **218,973** | **265,435** | **941,894.9** | **282,861** | **301,352** | **320,391** | **904,604.3** | **340,252** |
| D | | Voluntary Margin of Over-procurement (MWh) | 47,282 | 34,827 | 21,822 | 11,761 | 115,692 | | | | | - | | | | - | |
| E | C+D | **Net RPS Procurement Need (MWh)** | **206,857** | **203,157** | **190,945** | **205,819** | **806,777** | **219,995** | **237,492** | **218,973** | **265,435** | **941,895** | **282,861** | **301,352** | **320,391** | **904,604** | **340,252** |
| | | **RPS-Eligible Procurement** | | | | | | | | | | | | | | | |
| Fa | | **Risk-Adjusted RECs from Online Generation (MWh)** | **217,625** | **215,192** | **214,722** | **209,582** | **857,121** | **202,718** | **399,880** | **336,256** | **437,427** | **1,376,281** | **211,657** | **211,140** | **210,275** | **633,072** | **209,245** |
| Faa | | Forecast Failure Rate for Online Generation (%) | | | | | *#DIV/0!* | | | | 9.5% | 9.5% | 9.5% | 9.5% | 9.5% | 9.5% | 9.5% |
| Fb | | **Risk-Adjusted RECs from RPS Facilities in Development (MWh)** | | | | | - | | | | | - | | **15,030** | **28,492** | **43,522** | **28,207** |
| Fbb | | Forecast Failure Rate for RPS Facilities in Development (%) | | | | | *#DIV/0!* | | | | | *#DIV/0!* | | 9.5% | 9.5% | 9.5% | 9.5% |
| Fc | | **Pre-Approved Generic RECs (MWh)** | | | | | - | | | | | - | | | | - | |
| Fd | | **Executed REC Sales (MWh)** | | | | | - | | **158,021** | | | **158,021** | | | | - | |
| F | Fa+Fb+Fc-Fd | **Total RPS Eligible Procurement (MWh)** | **217,625** | **215,192** | **214,722** | **209,582** | **857,121** | **202,718** | **241,859** | **336,256** | **437,427** | **1,218,260** | **211,657** | **226,170** | **238,767** | **676,594** | **237,452** |
| F0 | | Category 0 RECs | | | | | - | | | 65,679 | 25,264 | 90,943 | 25,119 | 25,022 | 24,866 | 75,007 | 24,661 |
| F1 | | Category 1 RECs | 128,171 | 126,882 | 139,916 | 151,150 | 546,119 | 138,682 | 171,065 | 195,337 | 376,543 | 881,627 | 150,918 | 165,528 | 178,281 | 494,727 | 177,171 |
| F2 | | Category 2 RECs | 24,920 | 23,616 | 28,876 | 28,432 | 105,844 | 28,804 | 35,973 | 40,500 | | 105,277 | | | | - | |
| F3 | | Category 3 RECs | 64,534 | 64,694 | 45,930 | 30,000 | 205,158 | 35,232 | 34,821 | 34,740 | 35,620 | 140,413 | 35,620 | 35,620 | 35,620 | 106,860 | 35,620 |
| | | **Gross RPS Position (Physical Net Short)** | | | | | | | | | | | | | | | |
| Ga | F-E | **Annual Gross RPS Position (MWh)** | **10,768** | **12,035** | **23,777** | **3,763** | **50,344** | **(17,277)** | **4,367** | **117,283** | **171,992** | **276,365** | **(71,204)** | **(75,182)** | **(81,624)** | **(228,010)** | **(102,800)** |
| Gb | F/A | Annual Gross RPS Position (%) | 37% | 37% | 39% | 36% | 37% | 33% | 39% | 63% | 73% | 51% | 35% | 37% | 39% | 37% | 38% |
| | | **Application of Bank** | | | | | | | | | | | | | | | |
| Ha | J-Hc (from previous CP) | **Existing Banked RECs above the PQR** | | | | | - | - | | | | - | - | | | - | - |
| Hb | | RECs above the PQR added to Bank | | | | | - | | | | | - | | | | - | |
| Hc | | Non-bankable RECs above the PQR | | | | | - | | | | | - | | | | - | |
| H | Ha+Hb | **Gross Balance of RECs above the PQR** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ia | | Planned Application of RECs above the PQR towards RPS Compliance | | | | | - | | | | | - | | | | - | |
| Ib | | Planned Sales of RECs above the PQR | | | | | - | | | | | - | | | | - | |
| J | H-Ia-Ib | **Net Balance of RECs above the PQR** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| J0 | | Category 0 RECs | | | | | - | | | | | - | | | | - | |
| J1 | | Category 1 RECs | | | | | - | | | | | - | | | | - | |
| J3 | | Category 3 Bundled RECs (Non-CBA Utilities Only)* | | | | | - | | | | | - | | | | - | |
| | | **Expiring Contracts** | | | | | | | | | | | | | | | |
| K | | RECs from Expiring RPS Contracts (MWh) | 23,800 | 225,192 | 130,912 | 173,342 | 553,246 | 48,000 | 65,000 | 102,333 | 175,000 | 390,333 | | | | - | |
| | | **Net RPS Position (Optimized Net Short)** | | | | | | | | | | | | | | | |
| La | Ga+Ia-Ib-Hc | **Annual Net RPS Position after Bank Optimization (MWh)** | **10,768** | **12,035** | **23,777** | **3,763** | **50,344** | **(17,277)** | **4,367** | **117,283** | **171,992** | **276,365** | **(71,204)** | **(75,182)** | **(81,624)** | **(228,010)** | **(102,800)** |
| Lb | (F+Ia-Ib-Hc)/A | Annual Net RPS Position after Bank Optimization (%) | 0.36821873 | 0.370734784 | 0.393583642 | 0.356399287 | 0.371840278 | 0.329424852 | 0.392078599 | 0.634205873 | 0.72510296 | 0.514969168 | 0.349218015 | 0.370230799 | 0.387522471 | 0.369095255 | 0.381526082 |

Note: All values are to be input in MWhs

*D.17-11-037 provides for utilities serving load in areas outside California Independent System Operator Balancing Authority (Non-CBA Utilities) to bank excess bundled PCC3 RECs

# Renewable Net Short Calculations - 2024 RPS Procurement Plans

| | |
|---|---|
| **LSE Name:** | Lancaster Choice Energy |
| **Date Filed:** | 1/23/25 |

| Variable | Calculation | Item | 2029 Forecast | 2030 Forecast | **2028-2030** | 2031 Forecast | 2032 Forecast | 2033 Forecast | 2034 Forecast |
|---|---|---|---|---|---|---|---|---|---|
| | | Forecast Year | 6 | 7 | **CP 6** | 8 | 9 | 10 | 11 |
| | | **Annual RPS Requirement** | | | | | | | |
| A | | **Total Retail Sales (MWh)** | **625,444** | **629,890** | **1,877,708** | **634,198** | **641,208** | **645,013** | **648,840** |
| B | | RPS Procurement Quantity Requirement (%) | 57.3% | 60.0% | 57.3% | 60.0% | 60.0% | 60.0% | 60.0% |
| C | A*B | **Gross RPS Procurement Quantity Requirement (MWh)** | **358,567** | **377,934** | **1,076,753.1** | **380,519** | **384,725** | **387,008** | **389,304** |
| D | | Voluntary Margin of Over-procurement (MWh) | | | - | | | | |
| E | C+D | **Net RPS Procurement Need (MWh)** | **358,567** | **377,934** | **1,076,753** | **380,519** | **384,725** | **387,008** | **389,304** |
| | | **RPS-Eligible Procurement** | | | | | | | |
| Fa | | **Risk-Adjusted RECs from Online Generation (MWh)** | **207,885** | **206,651** | **623,781** | **125,770** | **125,677** | **89,620** | **79,379** |
| Faa | | Forecast Failure Rate for Online Generation (%) | 9.5% | 9.5% | 9.5% | 9.5% | 9.5% | 9.5% | 9.5% |
| Fb | | **Risk-Adjusted RECs from RPS Facilities in Development (MWh)** | **27,925** | **27,645** | **83,777** | **27,365** | **27,091** | **26,820** | **26,552** |
| Fbb | | Forecast Failure Rate for RPS Facilities in Development (%) | 9.5% | 9.5% | 9.5% | 9.5% | 9.5% | 9.5% | 9.5% |
| Fc | | **Pre-Approved Generic RECs (MWh)** | | | - | | | | |
| Fd | | **Executed REC Sales (MWh)** | | | - | | | | |
| F | Fa+Fb+Fc-Fd | **Total RPS Eligible Procurement (MWh)** | **235,810** | **234,296** | **707,558** | **153,135** | **152,768** | **116,440** | **105,931** |
| F0 | | Category 0 RECs | 24,380 | 24,097 | 73,138 | 24,061 | 24,083 | 19,130 | 17,800 |
| F1 | | Category 1 RECs | 175,810 | 174,579 | 527,560 | 129,074 | 128,685 | 97,310 | 88,131 |
| F2 | | Category 2 RECs | | | - | | | | |
| F3 | | Category 3 RECs | 35,620 | 35,620 | 106,860 | | | | |
| | | **Gross RPS Position (Physical Net Short)** | | | | | | | |
| Ga | F-E | **Annual Gross RPS Position (MWh)** | **(122,757)** | **(143,638)** | **(369,195)** | **(227,384)** | **(231,957)** | **(270,568)** | **(283,373)** |
| Gb | F/A | Annual Gross RPS Position (%) | 38% | 37% | 38% | 24% | 24% | 18% | 16% |
| | | **Application of Bank** | | | | | | | |
| Ha | J-Hc (from previous CP) | **Existing Banked RECs above the PQR** | | | - | - | | | |
| Hb | | RECs above the PQR added to Bank | | | - | | | | |
| Hc | | Non-bankable RECs above the PQR | | | - | | | | |
| H | Ha+Hb | **Gross Balance of RECs above the PQR** | - | - | - | - | - | - | - |
| Ia | | Planned Application of RECs above the PQR towards RPS Compliance | | | - | | | | |
| Ib | | Planned Sales of RECs above the PQR | | | - | | | | |
| J | H-Ia-Ib | **Net Balance of RECs above the PQR** | - | - | - | - | - | - | - |
| J0 | | Category 0 RECs | | | - | | | | |
| J1 | | Category 1 RECs | | | - | | | | |
| J3 | | Category 3 Bundled RECs (Non-CBA Utilities Only)* | | | - | | | | |
| | | **Expiring Contracts** | | | | | | | |
| K | | RECs from Expiring RPS Contracts (MWh) | | | - | | 26,438 | | |
| | | **Net RPS Position (Optimized Net Short)** | | | | | | | |
| La | Ga+Ia-Ib-Hc | **Annual Net RPS Position after Bank Optimization (MWh)** | **(122,757)** | **(143,638)** | **(369,195)** | **(227,384)** | **(231,957)** | **(270,568)** | **(283,373)** |
| Lb | (F+Ia-Ib-Hc)/A | Annual Net RPS Position after Bank Optimization (%) | 0.377027862 | 0.371963542 | 0.376819954 | 0.241462492 | 0.238250345 | 0.180523609 | 0.163262165 |

Note: All values are to be input in MWhs

*D.17-11-037 provides for utilities serving load in areas outside California Independent System Operator

# Appendix D

## Project Development Status Update

| Reporting LSE Name | RPS Contract ID | Project Name | Technology Type | Project Development Phase | City | County | State | Zip Code | Latitude | Longitude | Contract Length (Years) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lancaster Choice Energy (LCE) | LCE30056 | Cape Station (Cape Generating Station 1, LLC) | Geothermal | Pre-Construction | Unincorporated | Beaver | Utah | TBD | TBD | TBD | 15 |
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| Reporting LSE Name | RPS Contract ID | Project Name | Contract Execution Date (mm/dd/yyyy) | Contract Start Date (mm/dd/yyyy) | Contract End Date (mm/dd/yyyy) | Contract Capacity | Expected Annual Generation | Total Contract Volume |
|---|---|---|---|---|---|---|---|---|
| Lancaster Choice Energy (LCE) | LCE30056 | Cape Station (Cape Generating Station 1, LLC) | 9/23/22 | 6/1/26 | 5/31/41 | 3.4 | 27000 | 405000 |
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| Reporting LSE Name | RPS Contract ID | Project Name | Commercial Operation Date (COD) | Transmission Status | Storage: Rated Power (MW) | Storage: Capacity (MWh) |
|---|---|---|---|---|---|---|
| Lancaster Choice Energy (LCE) | LCE30056 | Cape Station (Cape Generating Station 1, LLC) | 6/1/26 | PTO: Longroad Energy Executed Facility Study agreement with private transmission owner on 5/12/2023; additional detail provided in project notes field. | NA | NA |
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| Reporting LSE Name | RPS Contract ID | Project Name | Project Notes |
|---|---|---|---|
| Lancaster Choice Energy (LCE) | LCE30056 | Cape Station (Cape Generating Station 1, LLC) | Q1-2024 Development Progress Report, as provided by developer on 3/25/2024<br>Engineering & Procurement<br>● Worked towards finalization of ORC generator design and purchase agreement with Turboden<br>● Issued POs for transformers with Virginia Transformer Company<br>● Executed POs for high voltage breakers with Wholesale Electric Supply Co<br>● Seconded Fervo engineer to Burns and McDonnell's Kansas City HQ to support project team<br>● Amended the Jacob's Professional Services Agreement to increase Owner's Engineering scope<br>Permitting & Land<br>● Completed Stormwater Pollution Prevention Plan (SWPPP) for Utah Division of Water Quality<br>● Received confirmation well construction approvals from Utah DWRi for next four well pads (Gold, Belknap, Granite, and Signal)<br>● Conducted biological species survey for confirmation wells pads (Gold, Belknap Granite, Signal)<br>● Received approval from DWRi to expand Bearskin well pad to an 8-well configuration<br>Resource & Drilling<br>● Completed drilling of horizontal Winkler 4-I well, Winkler 3-P well, Bearskin 1-IA<br>● Completed temperature well logging on Winkler 4-I<br>● Completed drilling of second and third water wells<br>● Completed infrastructure and brought first and second water wells online<br>● Completed third water storage pit<br>● Completed well workover work on Frisco 1-I, 2-P, and 3-I and wireline imaging on Frisco 3-I, in preparation for reservoir stimulation<br>● Completed stimulation process of Frisco 1-I, initial data indicates successful connection between Frisco wells<br>Interconnection<br>● Received all engineering assessment information and have progressed to alignment on material terms with Private Transmission Owner for LGIA and TSA |
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# Appendix E

## Cost Quantification

| | |
|---|---|
| **LSE Name:** | Lancaster Choice Energy |
| **Date Filed:** | 1/23/25 |

Input Required

No Input Required

| | Table 1: Cost Quantification (Actual Net Costs, $) | Actual RPS-Eligible Procurement and Generation Net Costs ($) | | |
|---|---|---|---|---|
| 1 | **Executed RPS-Eligible Contracts by Technology Type* (Purchases and Sales)** | **2021** | **2022** | **2023** |
| 2 | Biogas: Digester Gas | | | |
| 3 | Biogas: Landfill Gas | | | $114,168 |
| 4 | Biodiesel | | | |
| 5 | Biomass | $705,149 | $3,335,920 | $482,398 |
| 6 | Muni Solid Waste | | | |
| 7 | Geothermal | $2,104,796 | | $4,604,361 |
| 8 | Small Hydro (Non-UOG) | $65,098 | $399,845 | $428,940 |
| 9 | Conduit Hydro | | | |
| 10 | Water Supply / Conveyance | | | |
| 11 | Ocean Wave | | | |
| 12 | Ocean Thermal | | | |
| 13 | Tidal Current | | | |
| 14 | Solar PV (Non-UOG) | $3,110,447 | $16,918,368 | $9,949,485 |
| 15 | Solar Thermal | $40,571 | | |
| 16 | Wind | $3,779,835 | $11,581,091 | $9,686,246 |
| 17 | Unbundled RECs (REC Only) | $87,341 | $86,560 | $2,779,556 |
| 18 | Various (Index Plus REC)*** | | | $3,113,646 |
| 19 | Fuel Cell | | | |
| 20 | UOG: Small Hydro | | | |
| 21 | UOG: Solar PV | | | |
| 22 | UOG: Other | | | |
| 23 | Executed REC Sales (Revenue) | | $2,210,100 | |
| 24 | **Total RPS-Eligible Procurement and Generation Net Cost** | **$9,893,237** | **$30,111,684** | **$31,158,800** |
| 25 | Total Retail Sales (MWh) | 615,369 | 616,864 | 530,200 |
| 26 | **Incremental Rate Impact** | **1.607690633** | **4.881417205** | **5.876800455** |

| LSE Name: | Lancaster Choice Energy | | | Input Required | | No Input Required | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Date Filed: | 1/23/25 | | | | | | | | | |
| Table 2: Cost Quantification (Forecast Costs and Revenues, $) | | Forecast RPS-Eligible Procurement Costs and Revenues ($) | | | | | | | | |
| 1 | **Executed But Not Approved RPS-Eligible Contracts (Purchases and Sales)**** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** | **2031** | **2032** |
| 2 | Biogas: Digester Gas | | | | | | | | | |
| 3 | Biogas: Landfill Gas | | | | | | | | | |
| 4 | Biodiesel | | | | | | | | | |
| 5 | Biomass | | | | | | | | | |
| 6 | Muni Solid Waste | | | | | | | | | |
| 7 | Geothermal | | | | | | | | | |
| 8 | Small Hydro (Non-UOG) | | | | | | | | | |
| 9 | Conduit Hydro | | | | | | | | | |
| 10 | Water Supply / Conveyance | | | | | | | | | |
| 11 | Ocean Wave | | | | | | | | | |
| 12 | Ocean Thermal | | | | | | | | | |
| 13 | Tidal Current | | | | | | | | | |
| 14 | Solar PV (Non-UOG) | | | | | | | | | |
| 15 | Solar Thermal | | | | | | | | | |
| 16 | Wind | | | | | | | | | |
| 17 | Unbundled RECs (REC Only) | | | | | | | | | |
| 18 | Various (Index Plus REC)*** | | | | | | | | | |
| 20 | Fuel Cell | | | | | | | | | |
| 21 | UOG: Small Hydro | | | | | | | | | |
| 22 | UOG: Solar PV | | | | | | | | | |
| 23 | UOG: Other | | | | | | | | | |
| 24 | Executed REC Sales (Revenue) | | | | | | | | | |
| 25 | **Total Executed But Not Approved RPS-Eligible Procurement and Generation Cost** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** |
| 26 | Total Retail Sales (MWh) | 603,262 | 606,088 | 610,890 | 616,136 | 622,374 | 625,444 | 629,890 | 634,198 | 641,208 |
| 27 | **Incremental Rate Impact** | **0** | **0.00 ¢/kWh** | **0.00 ¢/kWh** | **0.00 ¢/kWh** | **0.00 ¢/kWh** | **0.00 ¢/kWh** | **0.00 ¢/kWh** | **0.00 ¢/kWh** | **0.00 ¢/kWh** |
| 28 | **Executed RPS-Eligible Contracts (Purchases and Sales)****** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** | **2031** | **2032** |
| 29 | Biogas: Digester Gas | | | | | | | | | |
| 30 | Biogas: Landfill Gas | | | | | | | | | |
| 31 | Biodiesel | | | | | | | | | |
| 32 | Biomass | | | | | | | | | |
| 33 | Muni Solid Waste | | | | | | | | | |
| 34 | Geothermal | | | 1,044,606 | 1,980,163 | 1,999,568 | 2,019,235 | 2,038,839 | 2,058,669 | 2,078,692 |
| 35 | Small Hydro (Non-UOG) | | | | | | | | | |
| 36 | Conduit Hydro | | | | | | | | | |
| 37 | Water Supply / Conveyance | | | | | | | | | |
| 38 | Ocean Wave | | | | | | | | | |
| 39 | Ocean Thermal | | | | | | | | | |
| 40 | Tidal Current | | | | | | | | | |
| 41 | Solar PV (Non-UOG) | 7,186,975 | 2,672,369 | 2,727,761 | 2,721,081 | 2,692,842 | 2,693,304 | 2,696,616 | 1,367,821 | 1,363,532 |
| 42 | Solar Thermal | | | | | | | | | |
| 43 | Wind | 3,623,485 | 3,758,464 | 3,823,192 | 3,824,078 | 3,802,377 | 3,809,189 | 3,819,750 | 2,526,784 | 2,539,436 |
| 44 | Unbundled RECs (REC Only) | 89,472 | 89,937 | 90,402 | 90,867 | 91,332 | 91,913 | 92,377 | | |
| 45 | Various (Index Plus REC)*** | 21,118,693 | 5,308,430 | 5,490,467 | 5,423,843 | 5,250,972 | 5,185,277 | 5,118,451 | 5,134,293 | 5,162,619 |
| 47 | Fuel Cell | | | | | | | | | |
| 48 | UOG: Small Hydro | | | | | | | | | |
| 49 | UOG: Solar PV | | | | | | | | | |
| 50 | UOG: Other | | | | | | | | | |
| 51 | Executed REC Sales (Revenue) | | | | | | | | | |
| 52 | **Total Executed and Approved RPS-Eligible Procurement and Generation Cost** | **$32,018,625** | **$11,829,200** | **$13,176,427** | **$14,040,032** | **$13,837,091** | **$13,798,918** | **$13,766,034** | **$11,087,567** | **$11,144,279** |
| 53 | Total Retail Sales (MWh) | 603,262 | 606,088 | 610,890 | 616,136 | 622,374 | 625,444 | 629,890 | 634,198 | 641,208 |
| 54 | **Incremental Rate Impact** | **5.30758264** | **1.951728369** | **2.156923** | **2.278722678** | **2.223275056** | **2.206260666** | **2.185464909** | **1.74828196** | **1.73801341** |
| 55 | **Total RPS-Eligible Procurement and Generation Cost** | **$32,018,625** | **$11,829,200** | **$13,176,427** | **$14,040,032** | **$13,837,091** | **$13,798,918** | **$13,766,034** | **$11,087,567** | **$11,144,279** |
| 56 | **Total Incremental Rate Impact** | **5.30758264** | **1.951728369** | **2.156923** | **2.278722678** | **2.223275056** | **2.206260666** | **2.185464909** | **1.74828196** | **1.73801341** |

*Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpuc.ca.gov/RPSComplianceReporting/

**Note: For contracts that have been executed but still require formal approval (CPUC or other formal approval process) for purchases and sales.

***Note: The "Various" technology type is to be used in the case of contracts encompassing multiple facilities where the generation type is not yet known

****Note: For IOUs and SMJUs: Include all executed contracts that required CPUC approval. For CCAs and ESPs: Include all executed contracts that have been approved through relevant formal approval processes.

| | | | |
|---|---|---|---|
| **LSE Name:** | Lancaster Choice Energy | | |
| **Date Filed:** | 1/23/25 | | |
| | **Table 2: Cost Quantification (Forecast Costs and Revenues, $)** | | |
| 1 | **Executed But Not Approved RPS-Eligible Contracts (Purchases and Sales)**** | **2033** | **2034** |
| 2 | Biogas: Digester Gas | | |
| 3 | Biogas: Landfill Gas | | |
| 4 | Biodiesel | | |
| 5 | Biomass | | |
| 6 | Muni Solid Waste | | |
| 7 | Geothermal | | |
| 8 | Small Hydro (Non-UOG) | | |
| 9 | Conduit Hydro | | |
| 10 | Water Supply / Conveyance | | |
| 11 | Ocean Wave | | |
| 12 | Ocean Thermal | | |
| 13 | Tidal Current | | |
| 14 | Solar PV (Non-UOG) | | |
| 15 | Solar Thermal | | |
| 16 | Wind | | |
| 17 | Unbundled RECs (REC Only) | | |
| 18 | Various (Index Plus REC)*** | | |
| 20 | Fuel Cell | | |
| 21 | UOG: Small Hydro | | |
| 22 | UOG: Solar PV | | |
| 23 | UOG: Other | | |
| 24 | Executed REC Sales (Revenue) | | |
| 25 | **Total Executed But Not Approved RPS-Eligible Procurement and Generation Cost** | **$0** | **$0** |
| 26 | Total Retail Sales (MWh) | 645,013 | 648,840 |
| 27 | **Incremental Rate Impact** | **0.00 ¢/kWh** | **0.00 ¢/kWh** |
| 28 | **Executed RPS-Eligible Contracts (Purchases and Sales)**** | **2033** | **2034** |
| 29 | Biogas: Digester Gas | | |
| 30 | Biogas: Landfill Gas | | |
| 31 | Biodiesel | | |
| 32 | Biomass | | |
| 33 | Muni Solid Waste | | |
| 34 | Geothermal | 2,099,201 | 2,119,646 |
| 35 | Small Hydro (Non-UOG) | | |
| 36 | Conduit Hydro | | |
| 37 | Water Supply / Conveyance | | |
| 38 | Ocean Wave | | |
| 39 | Ocean Thermal | | |
| 40 | Tidal Current | | |
| 41 | Solar PV (Non-UOG) | 1,354,129 | 1,347,365 |
| 42 | Solar Thermal | | |
| 43 | Wind | 1,033,534 | 425,396 |
| 44 | Unbundled RECs (REC Only) | | |
| 45 | Various (Index Plus REC)*** | 4,705,993 | 4,565,557 |
| 47 | Fuel Cell | | |
| 48 | UOG: Small Hydro | | |
| 49 | UOG: Solar PV | | |
| 50 | UOG: Other | | |
| 51 | Executed REC Sales (Revenue) | | |
| 52 | **Total Executed and Approved RPS-Eligible Procurement and Generation Cost** | **$9,192,857** | **$8,457,965** |
| 53 | Total Retail Sales (MWh) | 645,013 | 648,840 |
| 54 | **Incremental Rate Impact** | **1.425221351** | **1.303551941** |
| 55 | **Total RPS-Eligible Procurement and Generation Cost** | **$9,192,857** | **$8,457,965** |
| 56 | **Total Incremental Rate Impact** | **1.425221351** | **1.303551941** |

*Note: Technology definitions are given in the PCC Classification Handbo
**Note: For contracts that have been executed but still require formal appr
***Note: The "Various" technology type is to be used in the case of contrac
****Note: For IOUs and SMJUs: Include all executed contracts that required

| | | | | | |
|---|---|---|---|---|---|
| **LSE Name:** | Lancaster Choice Energy | | Input Required | | No Input Required |
| **Date Filed:** | 1/23/25 | | | | |

| Table 3: Cost Quantification (Actual Procurement / Generation and Sales, MWh) | | Actual RPS-Eligible Procurement / Generation and Sales (MWh) | | |
|---|---|---|---|---|
| 1 | **Technology Type* (Procurement / Generation and Sales)** | **2021** | **2022** | **2023** |
| 2 | Biogas: Digester Gas | | | |
| 3 | Biogas: Landfill Gas | | | 932 |
| 4 | Biodiesel | | | |
| 5 | Biomass | 10,856 | 33,633 | 3,938 |
| 6 | Muni Solid Waste | | | |
| 7 | Geothermal | 31,478 | | 33,413 |
| 8 | Small Hydro (Non-UOG) | 982 | 4,010 | 3,642 |
| 9 | Conduit Hydro | | | |
| 10 | Water Supply / Conveyance | | | |
| 11 | Ocean Wave | | | |
| 12 | Ocean Thermal | | | |
| 13 | Tidal Current | | | |
| 14 | Solar PV (Non-UOG) | 50,415 | 181,717 | 100,758 |
| 15 | Solar Thermal | 612 | | |
| 16 | Wind | 73,143 | 145,699 | 129,949 |
| 17 | Unbundled RECs (REC Only) | 35,232 | 34,821 | 34,740 |
| 18 | Various (Index Plus REC)*** | | | 28,884 |
| 19 | Fuel Cell | | | |
| 20 | UOG: Small Hydro | | | |
| 21 | UOG: Solar PV | | | |
| 22 | UOG: Other | | | |
| 23 | Executed REC Sales (MWh) | | 158,021 | |
| **24** | **Total RPS Eligible Procurement (MWh)** | **202,718** | **241,859** | **336,256** |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **LSE Name:** | Lancaster Choice Energy | | Input Required | | No Input Required | | | |
| **Date Filed:** | 1/23/25 | | | | | | | |
| **Table 4: Cost Quantification (Forecast Procurement / Generation and Sales, MWh)** | | **Forecast RPS-Eligible Procurement / Generation and Sales (MWh)** | | | | | | |
| 1 | **Executed But Not Approved RPS-Eligible Contracts (Purchases and Sales) **** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** |
| 2 | Biogas: Digester Gas | | | | | | | |
| 3 | Biogas: Landfill Gas | | | | | | | |
| 4 | Biodiesel | | | | | | | |
| 5 | Biomass | | | | | | | |
| 6 | Muni Solid Waste | | | | | | | |
| 7 | Geothermal | | | | | | | |
| 8 | Small Hydro (Non-UOG) | | | | | | | |
| 9 | Conduit Hydro | | | | | | | |
| 10 | Water Supply / Conveyance | | | | | | | |
| 11 | Ocean Wave | | | | | | | |
| 12 | Ocean Thermal | | | | | | | |
| 13 | Tidal Current | | | | | | | |
| 14 | Solar PV (Non-UOG) | | | | | | | |
| 15 | Solar Thermal | | | | | | | |
| 16 | Wind | | | | | | | |
| 17 | Unbundled RECs (REC Only) | | | | | | | |
| 18 | Various (Index Plus REC)*** | | | | | | | |
| 20 | Fuel Cell | | | | | | | |
| 21 | UOG: Small Hydro | | | | | | | |
| 22 | UOG: Solar PV | | | | | | | |
| 23 | UOG: Other | | | | | | | |
| 24 | Executed REC **Sales** (MWh) | | | | | | | |
| 25 | **Total Executed But Not Approved RPS-Eligible Procurement** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| 26 | **Executed and Approved RPS-Eligible Contracts (Purchases and Sales) ****** | **2024** | **2025** | **2026** | **2027** | **2028** | **2029** | **2030** |
| 27 | Biogas: Digester Gas | | | | | | | |
| 28 | Biogas: Landfill Gas | | | | | | | |
| 29 | Biodiesel | | | | | | | |
| 30 | Biomass | | | | | | | |
| 31 | Muni Solid Waste | | | | | | | |
| 32 | Geothermal | | | 15,030 | 28,492 | 28,207 | 27,925 | 27,645 |
| 33 | Small Hydro (Non-UOG) | | | | | | | |
| 34 | Conduit Hydro | | | | | | | |
| 35 | Water Supply / Conveyance | | | | | | | |
| 36 | Ocean Wave | | | | | | | |
| 37 | Ocean Thermal | | | | | | | |
| 38 | Tidal Current | | | | | | | |
| 39 | Solar PV (Non-UOG) | 93,311 | 43,133 | 43,005 | 42,877 | 42,799 | 42,624 | 42,499 |
| 40 | Solar Thermal | | | | | | | |
| 41 | Wind | 72,064 | 71,986 | 71,986 | 71,997 | 72,064 | 71,986 | 71,986 |
| 42 | Unbundled RECs (REC Only) | 35,620 | 35,620 | 35,620 | 35,620 | 35,620 | 35,620 | 35,620 |
| 43 | Various (Index Plus REC)*** | 236,432 | 60,918 | 60,529 | 59,781 | 58,762 | 57,655 | 56,546 |
| 45 | Fuel Cell | | | | | | | |
| 46 | UOG: Small Hydro | | | | | | | |
| 47 | UOG: Solar PV | | | | | | | |
| 48 | UOG: Other | | | | | | | |
| 49 | Executed REC **Sales** (MWh) | | | | | | | |
| 50 | **Total Executed and Approved RPS-Eligible Procurement** | **437,427** | **211,657** | **226,170** | **238,767** | **237,452** | **235,810** | **234,296** |
| 51 | **Total RPS Eligible Procurement (MWh)** | **437,427** | **211,657** | **226,170** | **238,767** | **237,452** | **235,810** | **234,296** |

*Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpuc.ca.gov/RPSComplianceReporting/

**Note: For contracts that have been executed but still require formal approval (CPUC or other formal approval process) for purchases and sales.

***Note: The "Various" technology type is to be used in the case of contracts encompassing multiple facilities where the generation type is not yet known

****Note: For IOUs and SMJUs: Include all executed contracts that required CPUC approval. For CCAs and ESPs: Include all executed contracts that have been approved through relevant formal approval processes.

| LSE Name: | Lancaster Choice Energy | | | | |
|---|---|---|---|---|---|
| Date Filed: | 1/23/25 | | | | |
| Table 4: Cost Quantification (Forecast Procurement / Generation and Sales, MWh) | | | | | |
| 1 | **Executed But Not Approved RPS-Eligible Contracts (Purchases and Sales) **** | **2031** | **2032** | **2033** | **2034** |
| 2 | Biogas: Digester Gas | | | | |
| 3 | Biogas: Landfill Gas | | | | |
| 4 | Biodiesel | | | | |
| 5 | Biomass | | | | |
| 6 | Muni Solid Waste | | | | |
| 7 | Geothermal | | | | |
| 8 | Small Hydro (Non-UOG) | | | | |
| 9 | Conduit Hydro | | | | |
| 10 | Water Supply / Conveyance | | | | |
| 11 | Ocean Wave | | | | |
| 12 | Ocean Thermal | | | | |
| 13 | Tidal Current | | | | |
| 14 | Solar PV (Non-UOG) | | | | |
| 15 | Solar Thermal | | | | |
| 16 | Wind | | | | |
| 17 | Unbundled RECs (REC Only) | | | | |
| 18 | Various (Index Plus REC)*** | | | | |
| 20 | Fuel Cell | | | | |
| 21 | UOG: Small Hydro | | | | |
| 22 | UOG: Solar PV | | | | |
| 23 | UOG: Other | | | | |
| 24 | Executed REC Sales (MWh) | | | | |
| 25 | **Total Executed But Not Approved RPS-Eligible Procurement** | **0** | **0** | **0** | **0** |
| 26 | **Executed and Approved RPS-Eligible Contracts (Purchases and Sales) ****** | **2031** | **2032** | **2033** | **2034** |
| 27 | Biogas: Digester Gas | | | | |
| 28 | Biogas: Landfill Gas | | | | |
| 29 | Biodiesel | | | | |
| 30 | Biomass | | | | |
| 31 | Muni Solid Waste | | | | |
| 32 | Geothermal | 27,365 | 27,091 | 26,820 | 26,552 |
| 33 | Small Hydro (Non-UOG) | | | | |
| 34 | Conduit Hydro | | | | |
| 35 | Water Supply / Conveyance | | | | |
| 36 | Ocean Wave | | | | |
| 37 | Ocean Thermal | | | | |
| 38 | Tidal Current | | | | |
| 39 | Solar PV (Non-UOG) | 24,874 | 24,796 | 24,625 | 24,502 |
| 40 | Solar Thermal | | | | |
| 41 | Wind | 44,541 | 44,582 | 14,009 | 5,735 |
| 42 | Unbundled RECs (REC Only) | | | | |
| 43 | Various (Index Plus REC)*** | 56,355 | 56,299 | 50,986 | 49,142 |
| 45 | Fuel Cell | | | | |
| 46 | UOG: Small Hydro | | | | |
| 47 | UOG: Solar PV | | | | |
| 48 | UOG: Other | | | | |
| 49 | Executed REC Sales (MWh) | | | | |
| 50 | **Total Executed and Approved RPS-Eligible Procurement** | **153,135** | **152,768** | **116,440** | **105,931** |
| 51 | **Total RPS Eligible Procurement (MWh)** | **153,135** | **152,768** | **116,440** | **105,931** |

*Note: Technology definitions are given in the PCC Classification Handbook located in the F

**Note: For contracts that have been executed but still require formal approval (CPUC or oth

***Note: The "Various" technology type is to be used in the case of contracts encompassing

****Note: For IOUs and SMJUs: Include all executed contracts that required CPUC approval. F