



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

FILED

07/01/22

04:59 PM

R1807003

Order Instituting Rulemaking to Continue
Implementation and Administration, and Consider
Further Development of, California Renewables
Portfolio Standard Program.

Rulemaking 18-07-003

**DRAFT 2022 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN
OF CITY OF SAN JOSÉ, ADMINISTRATOR OF SAN JOSÉ CLEAN ENERGY**

**PUBLIC VERSION
(Appendix E Redacted)**

Kari Smith
Division Manager, Legislative and
Regulatory Division
San José Clean Energy
88 South 4th Street, Suite 130
San José, CA 95112
(408) 535-4867
kari.smith@sanjoseca.gov

Jeanne M. Solé
Deputy Director, Power Resources
San Jose Clean Energy
88 South 4th Street, Suite 130
San Jose, CA 95112
(408) 535-4867
jeanne.sole@sanjoseca.gov

July 1, 2022

**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 18-07-003

**DRAFT 2022 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN
OF CITY OF SAN JOSÉ, ADMINISTRATOR OF SAN JOSÉ CLEAN ENERGY**

**PUBLIC VERSION
(Appendix E Redacted)**

In accordance with the California Public Utilities Commission's ("CPUC") April 11, 2022 *Assigned Commissioner and Assigned Administrative Law Judges' Ruling Identifying Issues and Schedule of Review for 2022 Renewables Portfolio Standard Procurement Plans and Denying Joint IOUs' Motion to File Advice Letters for Market Offer Process* ("ACR"), the City of San José, Administrator of San José Clean Energy ("SJCE") hereby submits this Draft 2022 Renewables Portfolio Standard Procurement Plan ("2022 Draft RPS Procurement Plan"). As directed by the ACR, this Draft 2022 RPS Procurement Plan addresses sections 6.1-6.16 of the ACR.

I. Major Changes to RPS Plan

This Section describes the most significant changes between SJCE's Final 2021 RPS Procurement Plan and its Draft 2022 RPS Procurement Plan. The list of the key differences between the Final 2021 and Draft 2022 RPS Procurement Plans are provided in Table 1 below, and a redline of this Draft 2022 RPS Procurement Plan against SJCE's Final 2021 RPS Procurement Plan is also included as Appendix A.

Table 1: Major Changes to RPS Plan

Plan Reference	Plan Section	Summary/Justification of Change
Draft 2022 RPS Procurement Plan: Section III	Summary of Legislation Compliance	Updated to describe compliance with Senate Bill (“SB”) 255
Draft 2022 RPS Procurement Plan: Section IV	Assessment of RPS Portfolio Supplies and Demand	Updated to describe SJCE procurement since 2021, San José City Council (“City Council”)’s latest decision on SJCE’s power mix, and SJCE’s latest renewable procurement goals.
Draft 2022 RPS Procurement Plan: Section IV.A.2	Portfolio Optimization	Removed discussion of Power Charge Indifference Adjustment (“PCIA”) allocations in optimizing existing resources and updated section to illustrate how optimization satisfies numerous regulatory obligations and advances SJCE’s RPS goals.
Draft 2022 RPS Procurement Plan: Section IV.B	Responsiveness to Local and Regional Policies	Updated to describe impacts of local and regional policies on procurement targets, bid solicitation protocols, and forecasted supply.
Draft 2022 RPS Procurement Plan: Section IV.D	Lessons Learned	Updated to reflect on SJCE’s approaches to optimizing RPS resource planning and procurement and adapting to market disruptions and interconnection issues.
Draft 2022 RPS Procurement Plan: Section VIII	Renewable Net Short (“RNS”) Calculation	Updated discussion of SJCE’s failure risk assessment and how it is incorporated into the Renewable Net Short calculation.
Draft 2022 RPS Procurement Plan: Section IX	Minimum Margin of Procurement (“MMoP”)	Updated to describe SJCE’s quantitative method for determining the MMoP and Voluntary Margin of Procurement (“VMoP”) and relation to the State’s and SJCE’s RPS Procurement targets as illustrated in Table 4.

II. Executive Summary

SJCE's Draft 2022 RPS Procurement Plan demonstrates its progress towards meeting the State's renewable electricity procurement requirements set forth in SB 100, SB 350, and its own local renewable energy goals set forth in the City of San José's Climate Smart Plan¹ ("Climate Smart") and San José's goal to be carbon neutral by 2030.² The Draft 2022 RPS Procurement Plan also builds on the 38 million metric tons ("MMT") portfolio, which was SJCE's preferred 2020 Integrated Resource Plan ("IRP"),³ a 30 MMT portfolio it developed during the 2020 IRP process to inform its procurement⁴ and the mid-term reliability requirements adopted by the CPUC in Decision ("D.") 21-06-035.⁵ SJCE plans to update its carbon reduction and renewable energy procurement strategy based on the City of San José's target to become carbon neutral by 2030 during the 2022 IRP process. As illustrated throughout this Draft 2022 RPS Procurement Plan, SJCE's planned procurement is expected to result in RPS procurement above the State's requirement for the RPS Compliance Period from 2021-2024 and for each year through 2032.

SJCE has entered into five Power Purchase Agreements ("PPAs") over the last three years, including a 225 mega-watt ("MW"), fifteen-year agreement for wind, a 62 MW twelve-year agreement for fixed delivery solar, a 100 MW fifteen-year agreement for solar, a 100 MW twenty-year agreement for solar plus 10 MW of energy storage, and a 1.736 MW fifteen-year agreement for solar to serve disadvantaged communities. With these agreements, SJCE has procured in excess of its State RPS and IRP requirements and diversified its portfolio with contracts of different lengths and products. Notwithstanding supply chain disruptions from the COVID-19 pandemic, two of these agreements commenced operation in December of 2021. Based on information provided by the respective developers, supply chain and other issues are affecting the two remaining agreements that were slated to commence operation on December 31, 2022, with one project delayed to April 2023, and the second unlikely to be built. SJCE is in

¹ Climate Smart San José: A People-Centered Plan for a Low Carbon City (2018), *available at* <https://www.sanjoseca.gov/yourgovernment/environment/climate-smart-san-jos>.

² San José City Council, Res. No. 80284 (2021) (enacted), *available at* <https://www.sanjoseca.gov/home/showpublisheddocument/81390/637783661846800000>.

³ San José Clean Energy's 2020 Integrated Resource Plan (Sept. 1, 2020), *available at* <https://sanjosecleanenergy.org/resources/>.

⁴ *Id.* at 2.

⁵ See D.21-06-035, *available at* <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M389/K603/389603637.PDF>.

conversations with both developers about potential alternatives that would retain the contract value for SJCE's customers. Despite the delays with these two agreements, SJCE is on track to comply with the State's RPS requirements.

In addition to issuing its own solicitations for RPS resources, in 2020 and 2022, SJCE issued two solicitations with other Community Choice Aggregators ("CCAs") for renewables, renewables paired with storage, and stand-alone storage. No agreements resulted from the 2020 solicitation, but SJCE shortlisted a few projects in the 2022 solicitation and is in active negotiations.

SJCE also participated in procurement undertaken through the California Community Power ("CC Power"), a Joint Powers Authority formed by 10 CCAs to combine their buying power to acquire new, cost-effective clean energy, and reliability resources and continue advancing local and state climate goals. SJCE joined solicitations in 2020 for long-duration storage and in 2021 for firm clean resources. Through these solicitations, SJCE will purchase long-duration storage from two CC Power 8-hour lithium-ion battery projects in California and, if approved by City Council, will receive firm clean resources from two CC Power agreements for geothermal resources in Nevada. Lastly, SJCE is planning to accept portions of its short-term and long-term allocations in the Voluntary Allocation Market Offer ("VAMO") process.

SJCE assesses portfolio supply and demand and the risks that may impact its compliance with state and local renewable energy policies on a regular basis. This Draft 2022 RPS Procurement Plan describes SJCE's assessment of key risks and the risk mitigation strategies it employs to ensure regulatory compliance such as increasing diversity of resources, geographies, and contracting terms, and re-evaluating the Minimum of Over-Procurement ("MMoP") and Voluntary Margin of Procurement ("VMoP") above the State's RPS mandates.

City Council approved increasing SJCE's base product, GreenSource, to 60 percent renewable, keeping SJ Cares customers receiving power at 5% below Pacific Gas & Electric's ("PG&E") rates in GreenSource service, and increasing SJCE's GreenValue product to 40 percent renewable in 2022. The renewable energy content in these product offerings allows SJCE to satisfy the State's RPS requirements and make progress towards its local goal of achieving carbon neutrality by 2030.

This Draft 2022 RPS Procurement Plan also reflects on lessons learned in SJCE's three years of operation and during the challenging past year when projects have been adversely

affected by global supply chain disruptions related to COVID measures in Asia and around the world. Key insights include diversifying its portfolio with differing contract lengths, technologies, and locations to minimize risk and increase reliability on the grid. In addition, SJCE will seek improvements to contracts with developers to improve accountability and will monitor project progress to ensure supply chain challenges are addressed without compromising contract value, reliability, carbon reduction, or compliance.

III. Summary of Legislation Compliance

SJCE's planned renewable energy procurement detailed in this Draft 2022 RPS Procurement Plan comports with and advances its compliance with relevant legislative mandates. This Section describes the relevant statutory and regulatory requirements and demonstrates how SJCE meets these requirements through its procurement planning.

SB 350 (de Leon), enacted on October 7, 2015, increased California Load Serving Entity ("LSE") renewable electricity procurement targets to 50 percent by December 31, 2030, and implemented a requirement that at least 65 percent of all energy procurement counted towards its RPS compliance must be pursuant to contracts of 10 years or more in duration.⁶ A few years later, SB 100 (de Leon) came into effect on January 1, 2019 and increased LSE renewable procurement goals to 44 percent by December 31, 2024, 52 percent by December 1, 2027, and 60 percent by December 31, 2030.⁷

SJCE's current and planned procurement is sufficient to meet and exceed these State RPS procurement requirements, as described in Sections V and VII, and includes statutorily required long-term contracts, as described in Sections V and VII. SJCE's executed and planned renewable power procurement includes a minimum margin of over-procurement based on SJCE's risk assessment, as further described in Sections VII and IX. State RPS procurement targets are incorporated into SJCE's RNS Table as described in Section VIII below and attached as Appendix C. SJCE has adopted higher annual renewable procurement percentage targets than required by state law to meet City of San José's climate policy goals and its initiative to reach carbon neutrality city-wide by 2030.

⁶ See Cal. Pub. Util. Code § 399.13(b) and D.17-06-026 at 49, *available at* <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M191/K530/191530416.PDF>.

⁷ See Cal. Pub. Util. Code § 399.15(b)(2)(B).

SB 255 (Bradford, Stat. 2019, Ch. 407) was signed by Governor Newsom in September 2019 and requires CCAs with more than \$15 million in annual revenues to submit a Supplier Diversity Report and Plan to the CPUC every March 1st.⁸ Reporting requirements include an annual plan describing activities to increase procurement, including but not limited to energy supply, from small, local, and diverse business enterprises.⁹ In April 2022, the CPUC issued D.22-04-035, which revised the CPUC’s Supplier Diversity program established in General Order 156 to incorporate CCAs and Electric Service Providers.¹⁰ SJCE is complying with the reporting requirements and Proposition 209 limitations that regulate public entities. SJCE activities include vendor outreach and information sharing regarding General Order 156 supplier certification and SJCE procurement opportunities.

IV. Assessment of RPS Portfolio Supplies and Demand

SJCE structures its procurement to balance customer demand with resource commitments. As part of its forecasting, planning, and procurement processes, SJCE considers the deliverability characteristics of its resources (including the resource’s dispatchability and available capacity) and reviews the respective risks associated with short-, medium-, and long-term purchases. These efforts lead to a diverse resource mix, address grid integration issues, and provide value to the local community. SJCE met and exceeded its RPS obligations for the 2017 to 2020 compliance period and is on track to meet and exceed its RPS obligations through the 2032 planning horizon.

IV.A. Portfolio Supply and Demand

DEMAND

SJCE regularly evaluates supply and customer demand to plan procurement. SJCE’s demand for RPS eligible resources is a function of State RPS requirements, expected SJCE customer load, greenhouse gas (“GHG”) emission reduction goals and requirements, and the City Council-approved renewable energy content of SJCE’s products. In addition, to comply with the City of San José’s Climate Smart plan and its policy to become carbon neutral by 2030,¹¹ SJCE

⁸ General Order 156, Section 9, *available at* <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M466/K761/466761945.pdf>.

⁹ *Id.* at Section 11.

¹⁰ D.22-04-035 at 73, Ordering Paragraph 2, *available at* <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M466/K761/466761944.PDF>.

¹¹ San José City Council, *supra* note 2.

has adopted renewable energy targets that exceed the State’s SB 100 annual RPS targets. Table 2 shows SJCE’s demand for RPS resources as established in the 2021 RPS procurement plan. The numbers also reflect the retail products City Council approved for 2022. Because the City of San José’s goals exceed the State’s mandates, SJCE will comfortably meet the RPS requirements (measured on a percentage basis) for the 2021-2024 compliance period but will need to procure additional RPS resources over time to fill its open position to meet the City of San José planned targets. SJCE is in the process of undertaking modeling for the 2022 IRP and identifying the most cost-effective approach to meet the recently adopted Carbon Neutral by 2030 goal. SJCE will update its internally adopted RPS targets as appropriate in its 2022 IRP.

Table 2: SJCE 2021-2032 RPS Procurement Targets

Year	Retail Energy Forecast (GWh)¹²	California RPS Compliance (%)	California RPS Compliance (GWh)	SJCE Planned Target RPS (%)	SJCE Planned Target RPS (GWh)	RPS Under Contract (GWh)
2021	3,787	35.8%	1,361	50.1%	1,896	1,939
2022	3,770	38.5%	1,452	60.4%	2,276	2,214
2023	3,790	41.3%	1,565	61.4%	2,326	1,835
2024	3,821	44.0%	1,681	63.1%	2,411	1,903
2025	3,844	46.7%	1,795	64.4%	2,478	1,903
2026	3,868	49.3%	1,907	65.8%	2,545	1,901
2027	3,894	52.0%	2,025	67.1%	2,615	1,898
2028	3,922	54.7%	2,145	68.5%	2,685	1,901
2029	3,958	57.3%	2,268	69.8%	2,763	1,895
2030	3,996	60.0%	2,397	71.1%	2,842	1,892
2031	4,040	60.0%	2,424	72.5%	2,928	1,890
2032	4,079	60.0%	2,448	73.8%	3,010	1,893

¹² 2021 is actual load. All remaining years are from the Baseline Mid-Demand scenario, 2021 California Energy Commission Integrated Energy Planning Report Forecast, available at <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report/2021-1>.

SUPPLY

SJCE uses a combination of short-, medium-, and long-term agreements to meet its RPS obligations and goals. SJCE has five long-term PPAs with new renewable resources totaling 489 MW:

- Renewable PPA between Clines Corners Wind Farm LLC and the City of San José, dated April 30, 2020 (“Clines Corners”).
- Renewable PPA between Edwards Solar IV, LLC and the City of San José, dated November 13, 2020 (“Edwards IV”),
- Renewable PPA between EDPR CA Solar Park VI LLC (“EDPR”) and the City of San José, dated August 6, 2019, as amended by the First Amendment to Renewable Purchase Power Agreement between RE Scarlet LLC and City of San Jose, dated March 18, 2022 (“Scarlet”),
- Renewable PPA between Edwards Solar V, LLC and the City of San José, dated December 16, 2019 (“Edwards V”),
- Renewable PPA between West Tambo Clean Power, LLC and the City of San Jose, dated May 8, 2022 (“West Tambo”).

At the end of 2021, notwithstanding challenges associated with the COVID19 pandemic, two of SJCE’s long-term agreements began delivery. The 225 MW Clines Corners wind project located in New Mexico and the 62 MW Edwards IV solar project located in California together represent approximately 32 percent of SJCE load in 2022 and approximately 60 percent of SJCE’s State RPS compliance requirements in 2021-2024. By 2024, SJCE expects to have deliveries from five long-term RPS energy agreements when the 100 MW Scarlet solar project and the West Tambo solar project come online in April 2023 and provided SJCE successfully finalizes negotiations with the developer for alternative supply to the 100 MW Edwards V solar project. These projects are expected to meet 80 percent of the RPS Compliance Period 4 requirements and meet the State’s 65 percent RPS long-term contracting requirement. SJCE will procure the remaining 20% from a to-be-determined combination that could include new projects from current or further solicitations, supply from the PG&E VAMO and/or Renewable Energy Credits (“RECs”) from existing projects.

The characteristics of SJCE’s portfolio will vary over time, influenced by legislative and regulatory changes, market drivers and technology improvements as well as changes to the community’s needs and preferences. SJCE expects to conduct additional solicitations on a staggered basis over the coming years to fill in remaining net open RPS positions incrementally and cost-effectively, as described in Section VIII Renewable Net Short, while retaining the opportunity to benefit from rapidly maturing technologies and declining market costs.

IV.A.1. Voluntary Allocation Market Offer (VAMO)

On May 20, 2021, the CPUC adopted D.21-05-030 to accept and implement the staff VAMO proposal for Investor-Owned Utility (“IOU”) RPS resources. PG&E sent SJCE RPS allocations in May 2022, and per the revised CPUC schedule in the May 20, 2022 Ruling,¹³ SJCE has until July 29, 2022 to complete the VAMO election process. SJCE intends to accept portions of its short-term and long-term allocations on a short-term basis and is still considering whether to accept any portion of the long-term allocation on a long-term basis. As directed in the *Modifying the Renewables Portfolio Standard Program’s Procedural Schedule to Accommodate Filing of Voluntary Allocation and Market Offer Information Adopted in Decision 21-05-030* Ruling, SJCE will update this Draft 2022 RPS Procurement Plan after SJCE has completed the election process with PG&E.¹⁴

IV.A.2. Portfolio Optimization

SJCE has implemented various policies, goals, strategies, and solicitations to optimize its portfolio through 2032. SJCE’s goal is to meet its locally adopted renewable energy and carbon reduction policies and statewide renewable energy mandates in a manner that is cost-effective and supports a well-balanced, reliable resource portfolio. Portfolio optimization strategies can help reduce costs and increase portfolio value. SJCE regularly considers and utilizes the portfolio optimization strategies described below.

¹³ *Administrative Law Judge’s Ruling Modifying the Renewables Portfolio Standard Program’s Procedural Schedule to Accommodate Filing of Voluntary Allocation and Market Offer Information Adopted in Decision 21-05-030*, at 4-7 (May 20, 2022), available at <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M477/K591/477591987.PDF>.

¹⁴ See *id.* at 3-4 (illustrating that LSEs that do not have up-to-date information in their Draft 2022 RPS Procurement Plan are to include the Voluntary Allocation information in the RPS Plan Motion to Update due on August 15, 2022).

JOINT SOLICITATIONS

Joint solicitations can expand the procurement opportunities available to a CCA and potentially provide better contract terms by allowing CCAs to buy at a larger scale. SJCE regularly evaluates participating in joint solicitations with other CCAs. In 2020, SJCE jointly solicited proposals for long-term renewable resources with Peninsula Clean Energy (“PCE”). SJCE participated in a Joint CCA request for information (“RFI”) for long-duration storage, and subsequent Request for Offers (“RFO”) as further described in Section IV.C. SJCE is currently partnering with East Bay Clean Energy (“EBCE”) in an RFO for long-term renewable resources and standalone storage to meet the procurement requirements in D.21-06-035. SJCE will continue to collaborate with other CCAs and LSEs to find innovative opportunities to procure new, long-term renewable energy resources and maintain SJCE’s commitment to offering affordable and reliable clean power.

SJCE is a founding member of CC Power, a Joint Powers Authority focused on joint CCA procurement of renewable power and energy storage. CC Powers’ members include 10 and represent more than 3 million customer accounts and 7.6 million people across more than 145 municipalities and 17 counties.¹⁵ CC Power enables participating CCAs to increase their purchasing power and streamline negotiations through one agreement for a larger project that can be allocated across multiple CCAs. SJCE’s membership in CC Power has provided it with the option to participate in larger projects, or to take a smaller share of a number of projects to meet its needs, and thus reduce its delivery risk. CC Power undertook two solicitations in 2021 for long-duration storage and firm clean resources. SJCE is participating in both these efforts which are further discussed in Section IV.C.

PURCHASES FROM RETAIL SELLERS

Purchases of resales from other retail sellers can provide a cost-effective way of meeting short-term resource needs or filling in gaps. SJCE regularly evaluates and participates in resale solicitations offered by other retail sellers.

¹⁵ Leonard, Pamela, *CleanPower SF and Valley Clean Energy Join California Community Power*, California Community Power (May 5, 2021), available at <https://cacomunitypower.org/cleanpowersf-and-valley-clean-energy-join-ca-community-power/>.

SALES SOLICITATIONS

While SJCE's procurement practices are designed so power supplies do not exceed SJCE's load needs, occasionally, SJCE over-procures to ensure it has sufficient resources. SJCE may also procure excess supply due to the size and shape of certain offerings available in the market, uncertainty in regulatory requirements, difficulty in procuring in certain months, and actual load or generation. If excess procurement occurs, SJCE may sell the excess to the extent possible to reduce the total cost of its portfolio. SJCE released a solicitation to sell excess renewable energy in October of 2021. After receiving no responses, SJCE sold the product bilaterally. SJCE will release additional solicitations to sell renewable energy and other products to other retail sellers as necessary.

OPTIMIZING EXISTING PROCUREMENT

When available, SJCE will evaluate opportunities to increase output from existing PPAs through facility upgrades or by adding new capacity to the generating facility. To maximize value and minimize risk to its customers, SJCE also considers pursuing new, cost-effective projects versus procurement from existing facilities.

IV.B. Responsiveness to Local and Regional Policies

RESPONSIVENESS TO LOCAL POLICIES

SJCE's procurement efforts are responsive to local and state policies, regulations, and statutes. SJCE is a program within the Community Energy Department of the City of San José and is therefore subject to San José municipal law and oversight by the San José City Manager and City Council. SJCE is thus directly accountable to the community that it serves.

In 2018, City Council adopted Climate Smart, a detailed city plan for reaching the GHG emission targets of the international Paris Agreement.¹⁶ Climate Smart San José set ambitious goals for clean energy and transportation, prudent water management, and sustainable local jobs. To meet the clean energy and GHG emissions reduction objectives of Climate Smart, SJCE sets a minimum renewable energy content for the retail energy products it offers to customers. SJCE and City Council review and update locally adopted targets at least annually.

In December 2021, City Council approved an updated SJCE's power mix of 60 percent renewable energy content for GreenSource, SJCE's base product, and 40 percent renewable

¹⁶ See Climate Smart San José, *supra* note 1.

energy content for GreenValue, SJCE's lower cost product, effective January 1, 2022.¹⁷ City Council also approved decreasing the rates of the SJ Cares program to 5 percent below PG&E's generation rates while still supplying GreenSource service at 60 percent renewable energy content for the City's lowest-income customers. Each of these products exceeds the State's RPS Compliance 2022 target of 38.5 percent.¹⁸ These diverse products enable SJCE to align its renewable content and carbon-neutral goals with Climate Smart while also offering affordable options to customers.

In November of 2021, the City of San José pledged to become carbon neutral¹⁹ by 2030 to address worsening climate change impacts in California and San José. To achieve this initiative, SJCE expects to increase procurement of low-carbon resources and implement customer-facing programs to reduce GHG emissions from buildings and transportation. By 2030, SJCE intends to provide carbon-neutral electricity on an annual basis. SJCE plans to undertake additional modeling to analyze the impacts of increased EV adoption and building electrification on its load as the City of San José further develops its implementation plan.

SJCE must follow all applicable municipal rules related to energy procurement. For example, SJCE's RPS bid solicitation criteria follow the City of San José's purchasing policies, which include compliance with environmental requirements and any applicable prevailing wage laws, as well as extra credit in its evaluation criteria for local and small businesses.²⁰

RESPONSIVENESS TO REGIONAL POLICIES

In addition to local policies, SJCE reviews regional policies that could impact RPS procurement. These include county and regional climate action plans, regional transportation planning, and air quality management district rules and initiatives.²¹ For example, SJCE monitors local, regional and state building decarbonization and transportation electrification policies and

¹⁷ 2022 Power Mix Rates, SJCE 1-2 (Dec. 1, 2021), available at <https://www.sanjoseca.gov/home/showpublisheddocument/80600/637752673325570000>.

¹⁸ See D.19-06-023 at 11, Ordering Paragraph 1, available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M307/K595/307595168.PDF>.

¹⁹ Carbon neutrality means having net zero GHG emissions in a given year.

²⁰ For more detail on purchasing policies, see *Purchasing*, City of San José, available at <https://www.sanjoseca.gov/your-government/departments/finance/purchasing>.

²¹ SJCE has reviewed Regional Climate Action Plans such as the Santa Clara County Climate Action Plan.

program development. State and local building and vehicle electrification trends are expected to significantly increase SJCE electric load in the coming decades and will impact the City of San José's Carbon Neutral by 2030 goals.

SJCE's PPAs require counterparties to adhere to all applicable local/regional land use regulations and permitting processes. As part of its long-term renewable solicitation evaluation process, SJCE seeks to avoid negative impacts to important lands, species, and waters, and prioritize projects that are considered multi-benefit renewable energy projects located in areas zoned for renewable energy development.

IV.B.1. Long-term Procurement

LSEs are required to meet 65 percent of energy procurement towards the State RPS requirements from contracts with term lengths of 10 years or more.²² As detailed in Appendix D, SJCE signed five PPAs to ensure SJCE meets the 65 percent long-term requirement while building a staggered portfolio with contracts of different lengths and structures to maximize diversity. These contracts include more expected renewable generation than SJCE needs to meet State RPS requirements to provide a buffer for potential project delays or failures.

On December 16, 2021, the Clines Corners wind project achieved its commercial online date ("COD") ahead of schedule. SJCE has a 225 MW, fifteen-year agreement with Clines Corners Wind Farm LLC for wind power delivered from New Mexico for this project. On December 31, 2021, SJCE's Edwards IV project achieved its COD on schedule. SJCE has a 62 MW, twelve-year agreement with Edwards Solar IV, LLC for solar power delivered from Kern County, California. This agreement has an innovative guaranteed delivery profile of 16 hours per day, Hours Ending 07 to 22. Edwards Solar IV, LLC can offer this product in part by installing and managing storage systems at the solar facility.

On August 6, 2019, SJCE signed a twenty-year PPA with EDPR for a 100 MW solar plus 10 MW of storage Sonrisa project located in Fresno County, California with a guaranteed in-service date of December 31, 2022. Due to permitting delays, EDPR and SJCE agreed on an assignment of the PPA for the development of Scarlet,' also located in Fresno County, California that will provide the same MW of solar and storage as Sonrisa. The Scarlet project is currently

²² See Cal. Pub. Util. Code § 399.13(b); D.17-06-026 at 49, *available at* <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M191/K530/191530416.PDF>.

facing construction permitting delays resulting in a new in-service date of April 1, 2023. SJCE has accounted for this delay in its assessment of SJCE RPS compliance in this Draft 2022 RPS Procurement Plan.

On December 19, 2019, SJCE signed a fifteen-year PPA with Edwards Solar V, LLC for a 100 MW solar Edwards Solar V project in Kern County, California with a guaranteed in-service date of December 31, 2022. This project will not be built. SJCE is negotiating the terms to contract for replacement resources with the developer. Pending the conclusion of these negotiations, SJCE maintained the Edwards V solar power output in its analysis for this Draft 2022 RPS Procurement Plan.

On October 15, 2020, SJCE and six other CCAs jointly issued an RFO entitled ‘Joint Long Duration Storage Request for Offers’ via CC Power seeking offers for long-duration storage (8 hours or longer) that allowed for pairing with renewable resources. From this solicitation, SJCE has entered into two agreements for long-duration storage from 8-hour lithium-ion batteries: the LS Power’s Tumbleweed project in Kern County with a COD of June 2026 and Goal Line’s Onward project in Escondido with a COD of June 2025. SJCE’s share of these projects are 15.37 MW and 12.11 MW, respectively.

On October 25, 2021, SJCE joined eight CCAs to issue an RFO via CC Power seeking long-term agreements for firm, clean resources (geothermal or biomass). This effort resulted in two signed agreements between CC Power and developers that are still subject to ratification by the individual participating CCA boards: one with Ormat Nevada Inc. for a portfolio of geothermal resources located in Nevada and California, and a second with Fish Lake Geothermal LLC for a small geothermal project located in Nevada. If approved, SJCE’s expected share of these agreements will be 24.5 MW and 2.26 MW, respectively.

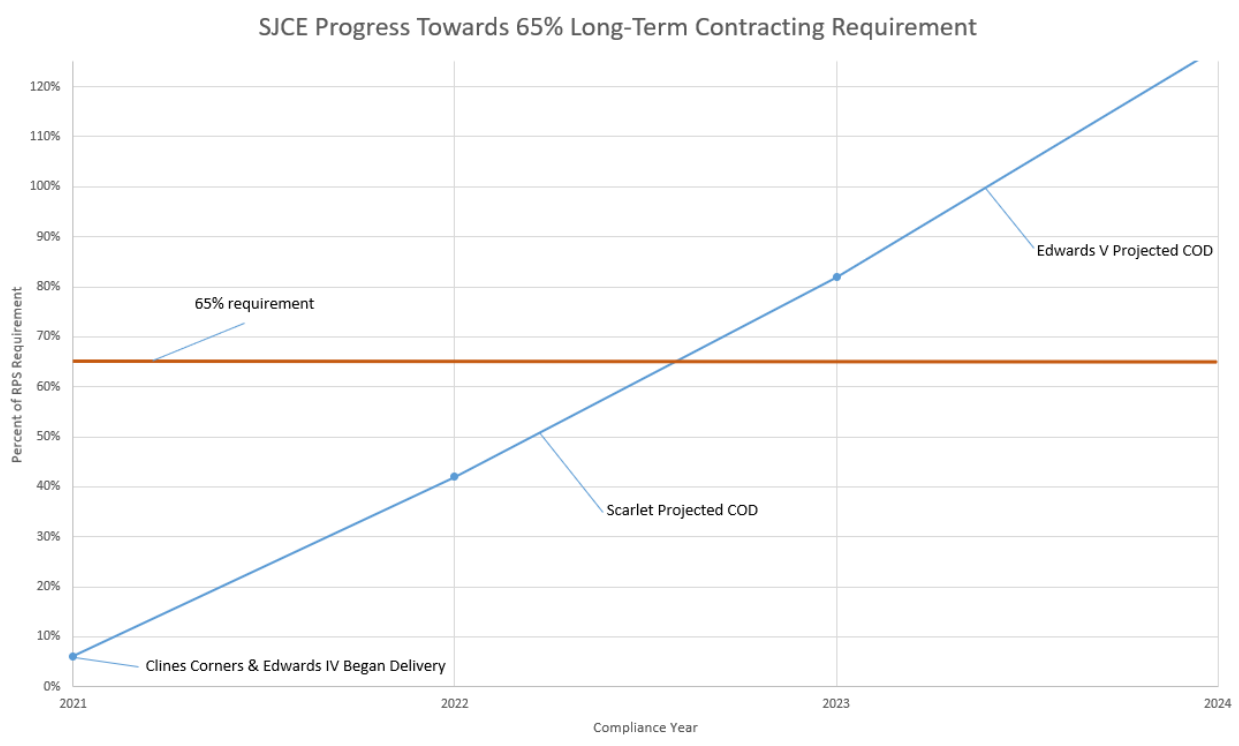
On February 17, 2022, SJCE and EBCE jointly issued an RFO seeking long-term agreements for renewables, renewables paired with storage, and standalone storage in order to meet the Mid-Term Reliability requirements. SJCE and EBCE have shortlisted a number of projects and are in active negotiations.

On May 8, 2022, SJCE signed a fifteen-year PPA with West Tambo Clean Power II LLC, for the 1.736 MW solar West Tambo Clean Power project in Merced County, California with a guaranteed in-service date of April 30, 2023. SJCE plans to use this contract to fulfill its capacity obligation in the Disadvantaged Community Green Tariff (“DAC-GT”) program. This contract is

pending CPUC approval,²³ and SJCE will provide an update on its status in the Final 2022 RPS Procurement Plan.

Figure 1 demonstrates SJCE’s long-term contracting timeline and progress towards the long-term contracting requirement through the 2021-2024 compliance period and beyond. We have updated this figure to include anticipated project delays.

Figure 1: SJCE Progress Towards 65% Long-Term Contracting Requirement



SJCE continues to track the development and commercialization of new technologies such as renewable hydrogen or renewable fuels, flow batteries, stacked blocks, and offshore wind, among others.

IV.C. Portfolio Diversity and Reliability

PORTFOLIO DIVERSITY

SJCE is committed to diversifying its portfolio of resources to mitigate risks and promote grid reliability. SJCE has entered long-term PPAs for five different projects, each with diverse

²³ Resolution No. E-5124, Ordering Paragraph 8 (stating that CCAs shall submit all executed PPAs used toward its DAC-GT/CSGT program obligations via a Tier 2 Advice letter for approval), *available at* <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M378/K421/378421442.PDF>.

technologies and characteristics, including hybrid battery storage in conjunction with solar, out-of-state wind resource, guaranteed on-peak delivery solar and long-duration storage. SJCE continues to evaluate opportunities for renewables, including firm clean resources such as geothermal and biogas, renewables with storage, standalone storage, natural gas hybridized with battery storage or with the capability to burn green hydrogen, and longer duration energy storage. In November 2019, SJCE led a RFI on battery storage that was shared with five other LSEs. SJCE received a robust response of seventeen submittals covering numerous technologies. The results of the RFI informs SJCE's ongoing procurement and planning efforts. In June 2020, SJCE joined a large cohort of CCAs to issue a joint RFI on long-duration storage (eight hours or longer) to prepare for expected needs in the 2026 timeframe. SJCE has entered into two long-term long duration storage agreements as a result of this effort as detailed in Section IV.B.1.

EVALUATION OF PROJECTS

In 2019, SJCE retained Energy and Environmental Economics, Inc. ("E3") to evaluate and quantify the value of SJCE's load, the generation profile of the potential resources, and their potential resource adequacy ("RA") value considering their location, and curtailment risk as part of SJCE long-term PPA solicitations. In 2019, SJCE also retained Flynn Resource Consultants to review historic pNode prices and projected transmission system changes to add to the PPA analysis. In 2020, the SJCE/PCE joint RFO discussed in Section IV.A used Ascend Analytics to complete PPA offer evaluations using quantitative stochastic analysis, this time incorporating more robust analysis of battery storage paired with solar. In the current joint RFO with EBCE, as discussed in Section IV.B.1, the CCAs are relying on in-house quantitative stochastic analysis. This RFO allows for numerous product types including standalone storage, storage paired with renewables, and standalone renewables. Allowing numerous products under one RFO casts a wide net and can help meet SJCE procurement and compliance needs across several programs including RPS and reliability requirements.

The quantitative stochastic analysis considers the delivery profiles of different types of resources, and their basis risk. SJCE's project scoring rubric provides additional points for technological and project feasibility, developer financial strength and experience, environmental and disadvantaged community impacts, and local and small businesses status. In addition, SJCE has applied a more qualitative review as it proceeds with procurement to ensure that its portfolio

includes an appropriate level of diversity in terms of technology, location, length of contract, and counterparties and retains room to benefit from technological innovation and cost reductions.

In 2021, SJCE procured an Energy Trading Risk Management (“ETRM”) model. The ETRM will allow SJCE to undertake more frequent and sophisticated in-house analyses of its portfolio. SJCE has invested considerable staff time in learning to use the model and expects to use the model increasingly to identify optimal procurement alternatives, assess RFP responses, and double-check consultant IRP modeling results.

SJCE also uses the State’s IRP planning and modeling process as an important tool to identify least-cost alternatives to meet State policy goals. The 2020 IRP provided insights into the respective benefits and relative risks of different energy technologies, and SJCE utilized its 2020 modeling results to inform RFPs and resource selection. To consider the suitability of emerging technologies for its portfolio, SJCE has included emerging technologies like offshore wind and green hydrogen as candidate resources in its 2022 IRP modeling.

RELIABILITY

In procuring to meet RPS requirements, SJCE also considers its RA and reliability obligations. In addition to its five long-term PPAs and the two CC Power agreements, SJCE has entered numerous short-term contracts for RA to meet its immediate RA obligations. In 2020, SJCE entered into mid- to long-term RA agreements (seven and twelve years) with natural gas and battery storage resources. Additionally, in 2021 and 2022 SJCE entered into medium-term RA agreements (through 2025) for resources that are available/dispatchable in all 24 hours of the day. In June 2022, SJCE launched an RFO seeking RA with dispatchable energy from resources with terms up to 15 years. Bids were received on June 15, 2022, and SJCE is currently evaluating the bids. If any of these offers are attractive it, SJCE will shortlist offers and negotiate contracts over the summer.

SJCE has a load curve that largely aligns with that of other LSEs in the Bay Area, driven both by weather, air conditioning demand and the composition of its customer base. With peak demand in the summer and generally in the late afternoon and evening hours, SJCE must build a supply portfolio that cost-effectively meets load at all times, including more costly evening hours. SJCE intends to meet its energy and renewable needs through a combination of resources along with the RA resources needed to support grid reliability.

As an LSE participating in the power markets of the California Independent System Operator (“CAISO”), SJCE’s imbalances are settled in the CAISO’s settlement markets. In addition, SJCE seeks to reduce its risk of negative prices through a combination of attention to the generation profile of resources it contracts with, exploring and pursuing opportunities for flexible resources, and contractual arrangements that either provide for guaranteed delivery profiles and/or facilitate greater control over resource operation, including economic curtailment when and where it is cost-effective.

SJCE expects load growth in the coming years due to building and transportation electrification. As such, assumptions for increased electrification are incorporated into SJCE’s load forecasting process. The CPUC and CAISO use this load forecast to define SJCE reliability requirements.

SJCE is monitoring the stakeholder processes in both CAISO and CPUC proceedings that address issues related to renewables integration and system reliability. SJCE intends to adjust its procurement activity to mitigate potential future cost exposure and develop a portfolio that aligns with both State and the City of San José’s renewable objectives and the reliability needs of the power system. Further discussion of reliability takes place in Section VII.

IV.D. Lessons Learned

In over three years of operations, SJCE has learned the following key lessons related to RPS resource planning and procurement that help with compliance:

- Diversify contract duration to balance the near-term cost-benefits of long-term RPS contracting with the risk of over procurement, and to balance the risk that prices in the future may be more attractive or more expensive.
- Monitor load carefully to avoid over or under procurement but create a buffer to manage risk in case of long-term project delay or failure.
- Diversify project locations and technology types to reduce the risk of disruptions resulting from problems associated with particular locations or technologies and to reduce the curtailment and negative price risk at a certain interconnection point.
- Research and evaluate opportunities for new and emerging renewable and storage technologies.
- To the extent possible, diversify counterparties in order to minimize concentration risk.

- Partner with other CCAs and LSEs on procurement of RA and long-term renewable energy PPAs to achieve efficiencies, contract with large projects that a single CCA could not offtake on their own and diversify risk by taking small shares in more projects.

In addition to the key lessons above, SJCE is also incorporating lessons learned from current market disruptions from the pandemic, global supply chain delays, and more recently, legal questions associated with solar panel tariff compliance. While the concerns with the tariff have been addressed in the near term, supply chain issues remain relevant. The impact of these market disruptions has coincided with accelerated CPUC procurement mandates, exacerbating procurement challenges. A disciplined focus on containing costs is critical in this challenging environment. Approaches should include:

- Hold renewable providers to their contractual obligations but constructively seek opportunities for win-win amendments that address the challenges experienced by developers without eroding contract value.
- Increase development security provisions, evaluate additional contractual remedies and insist on realistic contract in-service dates.
- Carefully monitor project development and have early, regular and meaningful discussions with project developers about project status.
- Continue to advocate for reasonably timed government mandates to limit exacerbated market power for generation projects that are already in development.

Interconnection issues also remain challenging as the State's and local climate goals continue to accelerate new project development. To address this challenge, it is important to:

- Carefully assess the interconnection status of bidders in RFP responses.
- Continue to work with the CAISO to relieve interconnection bottlenecks and inform parties of project development and procurement objectives.
- Monitor project development and be open to alternatives if projects in one location become infeasible as the interconnection process continues.

Additional energy and RA value may be available from out-of-state resources, but their viability is dependent on adequate transmission to California, including timely transmission upgrades. Moreover, the value of out-of-state resources depends on obtaining sufficient, reliable, and cost-effective import capability. To address these challenges, it is important to:

- Carefully assess the transmission requirements of any out-of-state project bid into a solicitation.
- Monitor project development, including the status of necessary transmission upgrades.
- Participate in CAISO processes to improve import capability and to obtain necessary allocations of import capability.
- Advocate for better coordination between CPUC and CAISO on Maximum Import Capability (“MIC”) enhancements.

V. Project Development Status Update

As described in Section IV.B above, SJCE’s current and planned procurement is sufficient to meet both the applicable State RPS procurement requirements as well as support the State’s GHG reduction targets. SJCE has attached the Project Development Status Update Report as Appendix D. SJCE has entered three contracts, which are not yet online:

- Scarlet: PPA with counterparty RE Scarlet LLC (formerly EDPR) with a 20-year delivery period. This is a 100 MW solar facility with 10 MW of lithium-ion battery energy storage in Fresno County, California. It is under development with an in-service date of April 1, 2023. The developer is addressing the following challenges:
 1. CAISO unexpectedly withdrew the previous interconnection approval for storage for EDPR, which is constructing the Sonrisa facility. The Parties agreed to assign the PPA to RE Scarlet LLC, another subsidiary of EDPR, which is developing an adjacent project (Scarlet) that has similar characteristics to the original Sonrisa facility, including storage, and that is further along in the development process.
 2. Transmission network upgrades required for Full Capacity Deliverability Status (“FCDS”) are behind schedule, but the project is projected to receive 100% interim deliverability until FCDS is achieved in 2026.
 3. The project is facing permitting challenges and will be delayed until April 1, 2023 (90 days from original in-service date of December 31, 2022).

These issues could affect RPS volumes but not enough to impact SJCE’s RPS compliance given coverage from other projects.

- Edwards V: PPA with counterparty Edwards Solar V, LLC with a 15-year delivery period. This is a 100 MW solar facility in Kern County, California. It was under

development with an in-service date of December 31, 2022. Pre-Construction phase. SJCE has recently learned that Edwards V faced insurmountable development challenges and will not be built. SJCE is currently working with the developer to seek alternatives that preserve the value of the contract and will provide updates in the 2022 IRP if available. SJCE has enough coverage to meet the 65% long-term contract rule without this project and will provide further updates in subsequent RPS Procurement plans.

- West Tambo Clean: PPA with counterparty West Tambo Clean Power II LLC with a 15-year delivery period. This is a 1.736 MW solar facility in Merced County, California. It is under development with an in-service date of April 30, 2023. This contract is still pending CPUC-approval.²⁴ SJCE will provide further updates on its status in its Final 2022 RPS Procurement Plan.

VI. Potential Compliance Delays

SJCE does not currently anticipate compliance delays for the upcoming RPS Procurement Plan compliance period from 2021 through 2024. As referenced in Sections IV and V, SJCE has five long-term renewable energy PPAs in place, two of which are already online and delivering energy and one that will come online April 30, 2023. While one of SJCE's outstanding projects (Scarlett) is delayed, SJCE consented to the assignment of the contract to replace the facility with a new resource that has an in-service date of April 1, 2023, which is 90 days later than originally expected. Despite this delay, SJCE's renewable energy procurement will meet the 2022 State RPS requirement of 38.5 percent. For the project that will not be built (Edwards V), SJCE is working with the developer on an alternate solution that will preserve the value of the agreement. Additionally, SJCE is currently reviewing offers submitted to the joint solicitation with EBCE issued in March of 2022.

SJCE is aware of issues that are affecting the energy industry that could lead to compliance delays if new projects under development cannot or do not get built on time. These include supply chain disruptions, increasing shipping costs, labor shortages, other pandemic impacts (e.g., Covid related lockdowns in China), inflation, and the U.S. Department of Commerce anti-circumvention trade investigation (which, fortunately, has been resolved for the next two years). SJCE will continue to closely track these market conditions as they relate to

²⁴ *Id.*

SJCE procurement and compliance and seek opportunities to address these challenges cooperatively with its developer counterparties in a manner that preserves contract value for its customers and timely compliance.

VII. Risk Assessment

Pursuant to § 399.13(a)(6)(F), SJCE assesses the risk that a renewable energy resource will face delays or failures before achieving online status, will not operate as planned, or have inherent variability when delivering energy. SJCE evaluates and incorporates the potential impacts of these risks on long-term contract supply in portfolio planning and risk management activities.

To mitigate the risk that a project will not deliver as contemplated under the contract, SJCE utilizes contractual incentives, diligence conducted before and during contract negotiation, diligence during contract management pre- and post-commercial online date, and timely negotiations if problems arise. SJCE also incorporates provisions into its long-term PPAs to minimize risk of delayed project performance. These include construction and performance standards, progress reporting requirements, delay damages, and termination rights.

In addition, SJCE engages in a review of project interconnection status, site control, permits status, project team experience, and developer financial strength when evaluating potential counterparties and project proposals. Table 3 lists the experienced developers that SJCE has entered long-term PPA agreements with.

Table 3: SJCE's Long-term Power Purchase Agreement Developers

Developer	Portfolio	Parent	Notable SJCE Counterparts
EDP Renewables	11 GW worldwide	Energias de Portugal	• East Bay Community Energy • Redwood Coast Energy Authority • MCE Clean Energy
Terra-Gen	3+ GW, half of all wind in CA	Energy Capital Partners and First State Investments	• MCE Clean Energy • Clean Power SF • East Bay Community Energy
Pattern Energy	10 GW worldwide	Canada Pension Plan Investment Board	• Southern California Public Power Authority • Sacramento Municipal Utility District • Investor-Owned Utilities

In addition to project development risk, SJCE addresses other risks described in the CPUC ACR, such as lower than expected generation, variable generation, and resource availability through an allocation of risks and responsibilities between itself and project

developers/operators. Guaranteed minimum production levels and terms addressing reduced payment for excess energy production in contracts mitigate the risk that energy deliveries fall below or above projections due to poor forecasting.

Finally, in collaboration with the City of San José, SJCE adopted an Energy Risk Management Policy and associated regulations and formed a Risk Oversight Committee (“ROC”) made up of the Deputy City Manager, the Director of Community Energy, the Director of Finance, the City’s Risk Manager, the Budget Director, the Community Energy Department’s Deputy Director of Power Resources, and the Community Energy Department’s Division Manager of Administration and Finance to oversee and guide procurement decisions. Among other topics, the Risk Management Policy and Regulations provide for counterparty risk management, minimum coverage requirements, diversification of the portfolio, concentration limits, and other risk controls.

COMPLIANCE RISK

At this time, SJCE anticipates compliance with the RPS 65% long-term contract requirement and assessed a low-medium risk of noncompliance. Factors that mitigate SJCE’s risk in meeting the long-term contracting requirement include (1) identification of feasible projects with strong and experienced counterparties; (2) pursuing a portfolio of diverse technologies, locations, counterparties, and contract lengths; (3) active monitoring of projects during development phases; (4) buying smaller amounts from multiple projects through collaboration with other CCAs, and recently, CC Power, rather than larger single projects; (5) over procuring for RPS compliance to create a buffer should long-term projects be delayed or fail; (6) standard renewable PPA terms that mitigate the potential for significant under or over production; and (7) constructive but firm negotiations with suppliers experiencing problems to seek to retain contract value. Given ongoing market disruptions including supply chain and interconnection challenges, SJCE will continue to monitor project progress and to work closely with its counterparties to seek mutually acceptable solutions to overcome development challenges.

SJCE has more alternatives to assure compliance with general RPS percentage targets for the 2021-2024 compliance period than the long-term contracting requirement. This is because SJCE closely tracks supply and demand volumes over time and can procure additional short-term REC contracts in the market if needed.

RISK MODELING AND RISK FACTORS

SJCE uses a deterministic model to assess risks associated with achieving State RPS requirements. To assess risks related to in-development projects, SJCE considers factors such as interconnection and permitting status, site control, financing, construction phase, developer experience, transmission paths, and COD. Due to the recent global supply chain issues, SJCE has updated its risk assessment model to reflect a higher risk of project delays for near-term projects.

SJCE has limited operational data from online PPA projects to use for a historical assessment (since they came online at end of 2021). SJCE modeled an online project failure rate using factors such as track record of counterparty contract termination, force majeure outages, and variances from forecast versus actual generation. These numbers are reflected in SJCE's RNS Calculation in Appendix C.

In the event of delivery shortages, contract provisions offer industry standard compensation. However, shortages could affect the cost of RPS compliance, as SJCE would have to buy more short-term RECs. SJCE has developed a MMoP that incorporates the forecasted failure rates into its risk adjusted portfolio. See Section IV.C for further discussion on how SJCE evaluates and mitigates risk through procurement of a diverse portfolio. See Section VIII for discussion of the role that excess procurement plays in SJCE's risk assessment.

SYSTEM RELIABILITY

SJCE considers the reliability of its portfolio and its impact on system reliability when entering renewable energy commitments. Technology and geographic diversity of renewable resources are considered when making decisions about the supply portfolio. SJCE also considers the impacts that the declining RA values of some renewable resources may have on its long-term RA position. SJCE has entered into a solar project with a fixed delivery agreement, an out-of-state wind agreement, two long-duration storage agreements and is evaluating additional energy storage offers to ensure a balanced portfolio that contributes to both system reliability and RPS.

VIII. Renewable Net Short Calculation

SJCE has provided a quantitative assessment attached as Appendix C to support the qualitative descriptions provided in this Draft 2022 RPS Procurement Plan. To assess SJCE's RPS portfolio needs and risks and ultimately its RPS procurement net short, SJCE used a deterministic model updated with actual load for 2021 and 2022 and the mid-case 2021 California Energy Commission's Integrated Energy Policy Report load forecast from 2023

through 2032. SJCE has not yet finalized how much of its available VAMO allocation it will accept and will provide an update to its impact on SJCE’s net short in the RNS template in August.

The RNS calculations were performed using a combination of resource-specific variables that feed into the failure rate and other risks such as forecasting errors and market risk. As described in Section VII above, SJCE considers the risks of project failure for projects in development as well as the risk of over- or under-generation for projects in operation. In Appendix C, for projects that are online, we apply a forecast failure rate of 9.5 percent to reflect largely generation performance risks, and for projects in development or under construction, we utilize a forecast failure rate of 18.5 percent to account for additional risks in financing, interconnection, site control, and supply and to reflect current market inflation and supply chain disruptions.

IX. “Minimum Margin” of Procurement (“MMoP”)

To mitigate the risk that renewable projects under contract are delayed or terminated or do not perform as expected, SJCE implemented a MMoP above the minimum procurement level. As shown in Table 4 below, SJCE is building an electricity supply portfolio with short-term and long-term contracts that achieve City of San José requirements, and exceed State requirements, for increasing the RPS-eligible renewable energy content of its portfolio over time. SJCE has a VMoP that represents the difference between its internally adopted targets for renewable energy for each year and the State’s RPS requirement less the MMoP. Table 4 shows the margin of RPS excess-procurement based on the differential between the SB 100 and SJCE renewable energy procurement targets.

Table 4: State and Local Renewable Energy Requirements

RPS Content Goals	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
SB 100 RPS Requirement	38.5%	41.3%	44.0%	46.7%	49.3%	52.0%	54.7%	57.3%	60.0%	60.0%	60.0%
SJCE RPS Procurement Targets	60.4%	61.4%	63.1%	64.4%	65.8%	67.1%	68.5%	69.8%	71.1%	72.5%	73.8%
SJCE RPS MMoP	7.9%	11.4%	10.7%	10.0%	9.4%	8.9%	8.4%	7.9%	7.5%	7.4%	7.3%
SJCE RPS VMoP	13.9%	8.7%	8.4%	7.7%	7.0%	6.3%	5.4%	4.6%	3.7%	5.1%	6.5%
SJCE’s Margin Over Procurement (MMoP + VMoP)	21.9%	20.1%	19.1%	17.8%	16.5%	15.1%	13.8%	12.5%	11.1%	12.5%	13.8%

SJCE applied a Forecast Failure Rate of 18.5 percent for RPS facilities in-development. SJCE plans to procure a range of 11.4 to 7.3 percent over its requirement from 2022 through 2032 as its MMoP to account for development risks which vary by project. After accounting for risks, SJCE has a significant VMoP, as detailed in Table 4 above.

SJCE's RPS-eligible renewable energy target is 60 percent for 2022, and from the 2021 RPS plan increases linearly to 70 percent by 2030. Pending its IRP assessment, SJCE has assumed its RPS content will continue linearly thereafter. This assumption will be reviewed in SJCE's 2022 IRP. SJCE will continue to evaluate the level of RPS resources SJCE plans to procure in excess of State RPS requirements, considering both the risk-assessed MMoP and other policy developments, including the pathway to becoming carbon neutral.

IX.A. MMoP Methodology and Inputs

To adequately calculate the MMoP, SJCE conducted a deterministic risk analysis on its portfolio of resources. SJCE considered risks of project failure, project delay, and less than expected production for both online and in-development resources. This analysis produced SJCE's online and in-development forecast failure rates, which were used to determine SJCE's MMoP.

IX.B. MMoP Minimum Margin Scenarios

In calculating the proposed MMoP, SJCE assesses the risks associated with its contracted projects as described in Section VII and incorporates them into its MMoP sensitivity analyses. These include a project viability assessment based on factors including interconnection and permitting status, site control, financing, construction phase, developer experience, transmission paths, and COD. SJCE is on-track to exceed the annual State RPS requirement of 44 percent by December 31, 2024 and the total quantity requirement for the 2021-2024 compliance period. SJCE expects to meet and exceed the increasing percentages over the 10-year planning horizon. SJCE is also working to meet the requirement that 65 percent of RPS procurement come from long-term agreements in each compliance period starting in 2021-2024, as described in Section IV.B.1 above.

The MMoP and VMoP also consider forecasted growth of enrollment in TotalGreen, the 100% renewable content product, as well as GreenValue, the product that aligns with the SB 100 RPS required targets to offer customers a renewable product at a discounted rate.

X. Bid Solicitation Protocol

Pursuant to § 399.13(a)(6)(C), this section describes SJCE's bid solicitation requirements and practices. SJCE undertakes its procurement in accordance with Chapter 26.50 of San José's Municipal Code, its Energy Risk Management Policy,²⁵ and the associated Energy Risk Management Regulations. These documents provide for competitive bidding processes. SJCE conducts solicitations for energy and related products by posting such solicitation notices and materials at www.sanjosecleanenergy.org/energy-procurement and sending solicitation notices to a list of interested counterparties including sellers that have asked to be notified. Specific information including product quantities, deliverability characteristics, term lengths, locational preferences, evaluation criteria, and other relevant solicitation terms and conditions are posted along with instructions for interested parties to submit responsive proposals. Section IV.C. describes in more detail SJCE's evaluation of long-term renewable solicitations.

X.A. Solicitation Protocols for Renewables Sales

SJCE does not have immediate plans to issue a solicitation for sales of renewable energy projects.

X.B. Bid Selection Protocols

SJCE implements its own bid solicitation criteria when procuring and selling energy. The Least-Cost Best-Fit ("LCBF") methodologies approved by the CPUC 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 investor-owned utilities and the CPUC does not have jurisdiction over the solicitation protocols of CCAs. However, consistent with § 399.13(a)(9),²⁶ as described in Section IV.C., above, SJCE does consider best-fit attributes that support a balanced mix of resources and help support reliability of the electrical grid.

D.14-11-042 created a renewable integration cost adder, which has been implemented by other LSEs as a proxy cost adder for renewable project evaluation related to grid costs caused by renewable projects. SJCE does not make use of this proxy. However, as

²⁵ Energy Risk Management Policy, May 1, 2017, *available at* <https://www.sanjoseca.gov/home/showpublisheddocument/12875/636669975476830000>.

²⁶ 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.").

an LSE subject to the tariff and business processes of the CAISO, in its evaluation of bid responses, SJCE considers prospective costs over the term of the project contract taking into account the specific location and operational characteristics of each project and includes a consideration of projected future power costs and prices in particular locations and the risk of curtailment. SJCE also requires project developers and operators to comply with CAISO rules, such as following CAISO dispatch instructions.

SJCE's project evaluation process considers factors identified in D.11-04-030 (locational value of energy at the project delivery point). SJCE complies with D.12-11-016 (RA value) by ascribing value to projects with FCDS, considering the RA capacity value in its evaluation rubric, and through monitoring trends in RA accounting rules for intermittent resources, including CPUC-determined Effective Load Carrying Capacity ("ELCC") factors and hybrid resource counting methodology. SJCE does not impose transmission cost adders as the CPUC addressed in D.12-11-016, as transmission costs directly necessitated by the project for project interconnection are the responsibility of the developer.

D.16-12-044, implementing the requirement of § 399.13(a)(8)(A) to give preference to renewable projects located in certain communities, is expressly only applicable to "electrical corporations" and is not mandatory for CCAs.²⁷ However, SJCE evaluates projects on compliance with environmental requirements and with prevailing wage laws and includes extra credit in its evaluation criteria for local and small businesses.

Moreover, the City of San José encompasses a very diverse group of residents and businesses including a large proportion of immigrants and disadvantaged communities. SJCE is exploring initiatives to reduce impacts on its disadvantaged and other communities by:

- Administering a CPUC DAC-GT program, which allows SJCE to solicit and procure energy from a new 1.736 MW solar power plant in a disadvantaged community in PG&E territory. SJCE expects this project to come online in 2023.
- Exploring opportunities with the community to develop and target energy programs in a manner that maximizes benefits to the San José community, including targeting vehicle

²⁷ 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.").

electrification and charging stations to reduce traffic emissions that disproportionately adversely impact disadvantaged communities.

- Exploring opportunities for non-fossil fuel powered backup power at critical facilities, microgrids at new developments, and joint purchases for solar plus storage for low- and moderate-income residents.

SJCE's solicitation information is available at the following website:

www.sanjosecleanenergy.org/energy-procurement.

X.C. Least-Cost Best Fit Criteria

SJCE's LCBF criteria aligns with statutory obligations mandated by Section 399.13(a)(9), as discussed above in Section IV.C and X.B. These include valuing projects considering their location and projected forward prices in particular locations, expected delivery profile, risk of congestion, and RA value. The projected forward prices in particular locations reflect renewable integration costs, and where appropriate, they include low or negative prices. Renewable integration costs are also considered by including consideration of curtailment risk. Further explanation of SJCE's evaluation criteria is contained in public solicitation materials available at www.sanjosecleanenergy.org/energy-procurement.

SJCE continues to refine its portfolio planning and project evaluation processes to prudently manage cost risk and bring the best value to its community and ratepayers under the direction of City Council.

XI. Safety Considerations

SJCE holds safety as a top priority and although SJCE does not currently own, operate, or control generation facilities, it incorporates provisions and standards in its contracts for RPS-eligible resources with facility owners and power marketers to ensure safety. For instance, SJCE includes standard language in all PPAs requiring the seller to maintain a safe facility, including provisions that require notifying the buyer of safety issues and shutting down all or part of the facility in order to mitigate risk as necessary. SJCE's pro forma contract Section 6 addresses safe operations and maintenance of energy facilities. Specifically, SJCE requires facilities to comply with Prudent Operating Practice, per the definition below.

“Prudent Operating Practice” means the practices, methods and standards of professional care, skill and diligence engaged in or approved by a significant portion of the electric power industry for facilities of similar size, type and design, that, in the exercise of reasonable judgment, in light of the facts known at the time,

would have been expected to accomplish results consistent with Law, reliability, safety, environmental protection, applicable codes, and standards of economy and expedition. Prudent Operating Practices are not necessarily defined as the optimal standard practice method or act to the exclusion of others, but rather refer to a range of actions reasonable under the circumstances.²⁸

SJCE standard contracts have a conditions precedent requirement stating that all applicable regulatory authorizations, approvals and permits, including those related to safety, for the operation of the facility under agreement have been obtained prior to delivery from the lead agency in the region where a project is built. SJCE staff collects and reviews these permit materials along with developer progress reports prior to and during construction.

XII. Consideration of Price Adjustment Mechanisms

Pursuant to § 399.13(a)(6)(E), LSEs must consider mechanisms for price adjustments with the costs of key components for eligible renewable energy resource projects with online dates more than 24 months after the date of contract execution. SJCE will continue to evaluate incorporating price adjustments in contracts with online dates more than 24 months after the date of contract execution.

XIII. Curtailment Frequency, Forecasting, Costs

This Section responds to the questions presented in Section 6.13 of the ACR²⁹ and describes SJCE's strategies and experience so far in managing SJCE's exposure to negative pricing events, overgeneration, and economic curtailment for SJCE'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

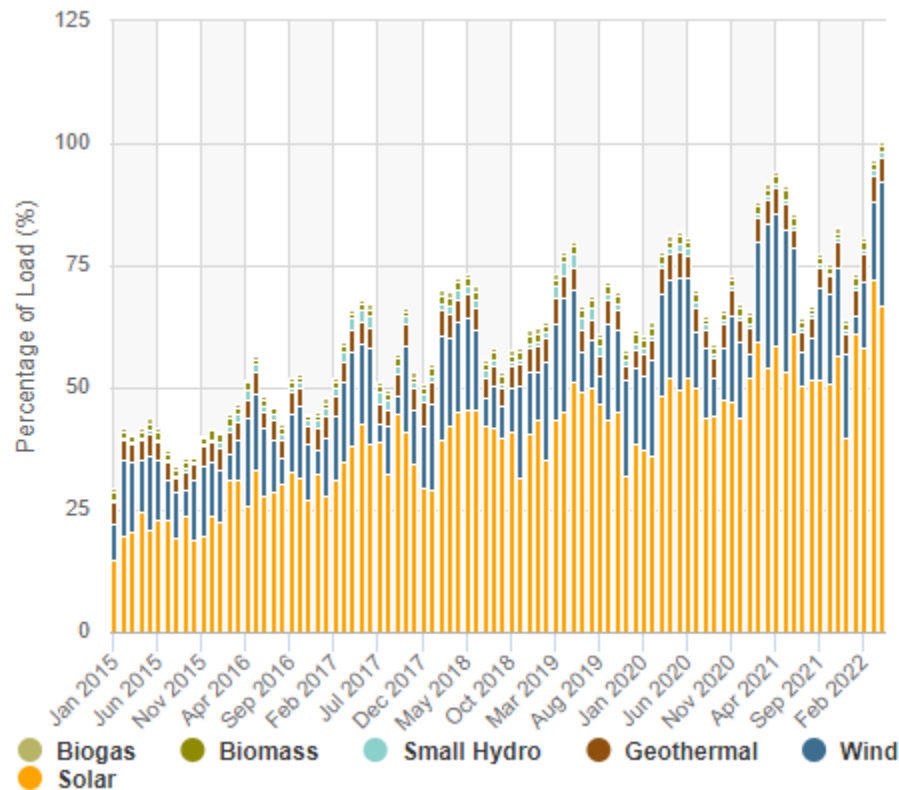
Due in large part to the rapid increase in the amount of wind and solar generating facilities that have been brought online throughout the western United States, the CAISO balancing authority area has experienced an increasing frequency and magnitude of curtailment and negative pricing events. As of June 2022, CAISO had over 15,400 MW of solar and 800

²⁸ See, e.g., Renewables Power Purchase Agreement with Clines Corners Wind Farm LLC, available at https://sanjosecleanenergy.org/wp-content/uploads/2021/02/Pattern.SJCE_PPA_PUBLIC.pdf.

²⁹ ACR at 33.

MW of wind.³⁰ This increased capacity results in discrete periods where the majority of load in the CAISO is served by solar and wind resources. The monthly maximum load served by wind and solar in the CAISO has averaged 69.7 percent over the past three years (April 2019 to April 2022), and in April of 2022 the monthly maximum load exceeded a record 92 percent (see Figure 2 below).³¹

Figure 2. Monthly Maximum Percent of Load Served by Renewables³²



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 187,000 MWh in 2015 to 1,504,840 MWh in 2021. As of April 2022, the total curtailment of solar and wind year to date is 1,379,033 MWh (see chart below).³³

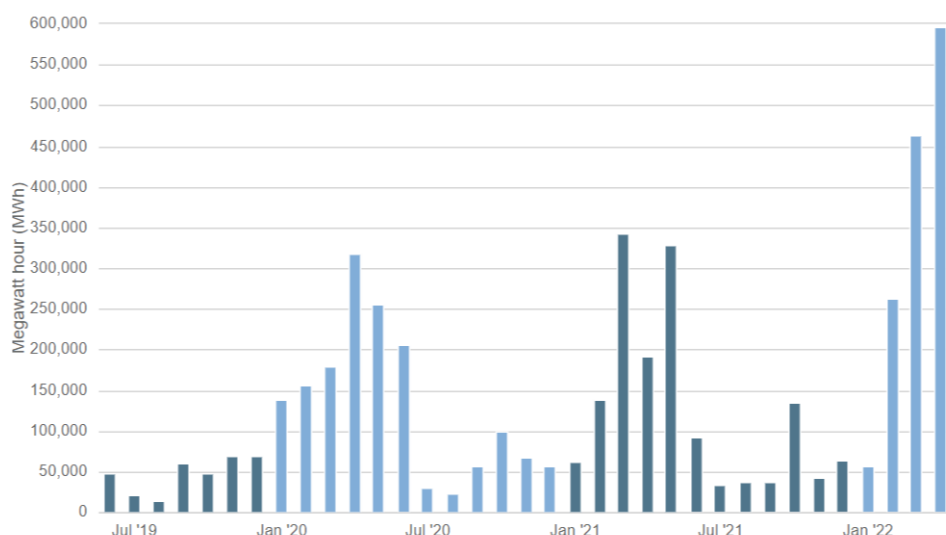
³⁰ *Going Green*, CAISO, available at <http://www.caiso.com/informed/Pages/CleanGrid/default.aspx>.

³¹ *Monthly Renewables Performance Report*, CAISO (Apr. 2022), available at <http://www.caiso.com/Documents/MonthlyRenewablesPerformanceReport-Apr2022.html>.

³² *Id.*

³³ *Managing Oversupply*, CAISO, available at <http://www.caiso.com/informed/Pages/ManagingOversupply.aspx#dailyCurtailment>.

Figure 3. Wind and Solar Curtailment Totals by Month³⁴



Curtailment is typically the highest during the months of March, April, and May when electric consumption is low due to mild temperatures, solar generation is high due to the longer days, and hydroelectric generation is historically at its highest due to snow melt and runoff.

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

As of December 2021, SJCE has two operating Variable Energy Resources (“VER”) that are scheduled into the CAISO market, which are exposed to negative pricing at each VER’s price node. Negative pricing occurs in the Day Ahead (“DA”) market and the two intra-hour markets, the Fifteen Minute Market (“FMM”), and Real Time (“RT”) market. In 2019 and 2021, when SJCE evaluated RPS project bids, it considered curtailment risk. SJCE has begun an assessment of pricing and node-level curtailment risk but has minimal data to analyze since the PPAs have come online at the end of 2021 and in early 2022. SJCE has looked more generally at system-level curtailment at the NP-15 and SP-15 Trading Hubs and will continue to monitor negative pricing and node-level curtailment risk as it relates to the new PPAs.

For RPS planning purposes on a system level, Table 5 below provides information on negative prices for both the SP-15 and NP-15 Trading Hubs for DA and FMM prices (as an example of the intra-hour market) from 2018 through 2021. Note that in order to provide a

³⁴ *Id.*

comparison with DA prices, the price data for FMM in the table below shows the average hourly price. SJCE is unable to provide a ten-year forecast of negative price events for its specific resources since those resources are still under development or have recently come online. However, based on the analysis conducted by EQ Research for SJCE in 2021 using data collected on California IRPs, the annual proportion of wind and solar not supported by storage to total net capacity additions between 2020-2030 is approximately 1.7 percent per year, which could contribute to an increase in negative prices.³⁵

Table 5: Number of Negative Pricing Intervals and Average Prices for CAISO Trading Hubs

CAISO Market	2018	2019	2020	2021
NP-15 DA	Average price: \$38.08 Average negative price: -\$5.06 # negative hours: 83	Average price: \$35.63 Average negative price: -\$2.30 # negative hours: 164	Average price: \$32.22 Average negative price: -\$1.51 # negative hours: 37	Average price: \$52.36 Average negative price: -\$0.18 # negative hours: 16
SP-15 DA	Average price: \$41.58 Average negative price: -\$4.91 # negative hours: 76	Average price: \$35.51 Average negative price: -\$2.09 # negative hours: 149	Average price: \$33.98 Average negative price: -\$1.24 # negative hours: 141	Average price: \$49.94 Average negative price: -\$3.66 # negative hours: 57
NP-15 FMM	Average price: \$35.04 Average negative price: -\$6.64 # negative hours: 133	Average price: \$35.58 Average negative price: -\$4.99 # negative hours: 224	Average price: \$31.50 Average negative price: -\$2.95 # negative hours: 171	Average price: \$50.46 Average negative price: -\$1.52 # negative hours: 214
SP-15 FMM	Average price: \$37.51 Average negative price: -\$5.71 # negative hours: 171	Average price: \$35.75 Average negative price: -\$4.45 # negative hours: 240	Average price: \$32.62 Average negative price: -\$5.22 # negative hours: 248	Average price: \$48.86 Average negative price: -\$2.26 # negative hours: 339

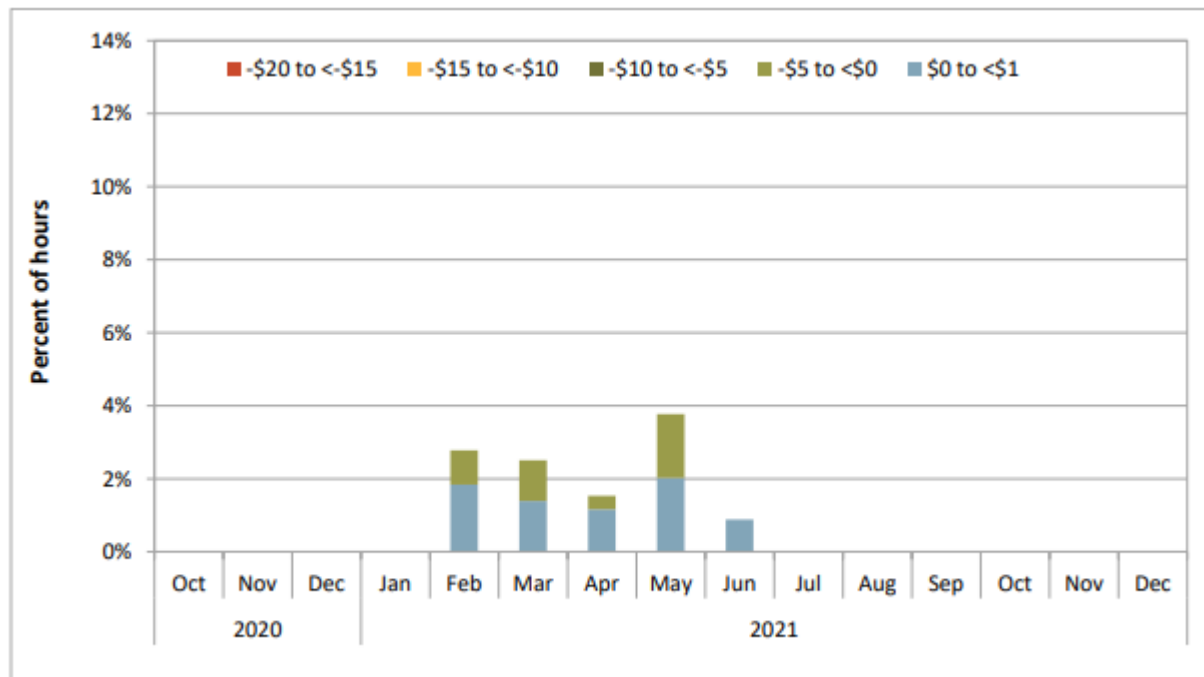
³⁵ Data collected by EQ Research using IRP as a Data Service™ on California 2020 IRPs shows that 18.5 GW of solar and wind will be added to the electrical grid between 2020-2030 along with 12.7 GW of storage. In perspective, the total capacity planned to be added in California during that period is 34 GW with 3.4 GW of capacity set to retire.

Although SJCE cannot provide a forecast for negative pricing and curtailment or “downward dispatch” for its resources yet, it is aware that the instances are increasing systemwide. According to the CAISO’s Q4 2021 Department of Market Monitoring Report, economic downward dispatch in the quarter accounted for about 358,750 MWh in March 2021 compared to 175,000 MWh of curtailment in 2020 and 125,000 MWh in 2019 during the same month.³⁶ The CAISO attributes this high level of economic downward dispatch over the quarter to higher renewable production, lower load, and congestion from south to north. The CAISO notes that most renewable generation dispatched down were solar resources, rather than wind and that negative DA prices typically occur during the middle of the day when production from solar resources, which has low marginal costs, is at its highest.³⁷ See Figure 4 for an example of the frequency of negative DA prices by month.

³⁶ *Q4 2021 Report on Market Issues and Performance*, CAISO, 9 (Apr. 4, 2022), available at <http://www.caiso.com/Documents/2021-Fourth-Quarter-Report-on-Market-Issues-and-Performance-Apr-4-2022.pdf>; *Q1 Report on Market Issues and Performance* (Sept. 11, 2020), available at <http://www.caiso.com/Documents/2020FirstQuarterReportonMarketIssuesandPerformance-Sep112020.pdf>.

³⁷ *Q4 2021 Report on Market Issues and Performance*, *supra* note 36.

Figure 4: Frequency of Negative Day-Ahead Prices (\$/MWh) by Month³⁸



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

As discussed in Section IV.C, the E3 valuation model SJCE used to assess renewable project values considered the impact of curtailment. The E3 model produced an implied REC value for each project, taking into account the project location, curtailment assumptions, negative price risks, and more. SJCE expects to complete a comparable analysis when it undertakes long-term procurement going forward.

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

SJCE has two long-term contracts with facilities that came online in December 2021. SJCE also became its own Scheduling Coordinator (“SC”) in December 2021, and it evaluates the best approaches to mitigating overgeneration and associated negative market prices in coordination with its former SC and current Scheduling Agent, Northern California Power Agency. Northern California Power Agency’s subject matter experts have years of experience

³⁸ *Id.* at Figure 1.18.

managing these issues for its municipal members. SJCE will also utilize its new Energy Trading and Risk Management software to further understand risk of overgeneration and negative prices.

SJCE reviews regular performance reports for the PPAs that are delivering energy, including considering negative costs. SJCE can question or dispute charges, especially when the contracted price floor is exceeded and/or energy curtailment should have occurred during negative market pricing events.

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

As described in Section IV.A, in the context of the 2020 IRP, SJCE undertook a sophisticated analysis that incorporates production cost modeling and stochastic analysis to identify a robust portfolio that allows SJCE to meet its regulatory requirements and local goals cost-effectively and in a manner that prudently manages risks, including overgeneration and negative market prices. SJCE's 2020 IRP submissions were, as required, developed using CPUC assumptions (with any deviations noted and supported). SJCE will update its IRP in 2022 in compliance and coordination with the CPUC, including and considering updated information on projected curtailment, and negative market prices.

Further, as described in Section IV.C., SJCE considers the impact of curtailment and negative pricing when evaluating new procurement and has, where appropriate, used historical data to assess locational risks.

Moreover, because overgeneration and negative market price conditions are largely driven by State policy, it is appropriate to consider macro-level mitigation measures through CAISO initiatives, CPUC rulemakings, and possibly legislation.

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

SJCE has clauses in its long-term agreements to avoid exposure to negative pricing and manage associated risks. Price floors and economic curtailment rights are contractual tools that support these efforts. When scheduling in the Real-Time market, exposure to negative prices can be mitigated by price floors and curtailment orders up to an annual cap. SJCE can also use price floors in the Day-Ahead market.

XIV. Cost Quantification

Pursuant to § 399.12(j)(2), CCAs shall participate in the RPS program subject to the same terms and conditions applicable to an electrical corporation, and as such, shall provide information related to RPS procurement costs and sales information required in this section. SJCE has provided the Cost Quantification Table as Appendix E. As directed in the ACR, SJCE has completed those cells in the Cost Quantification tables that correspond to Table 3, Rows 1-5 in the ACR.

XV. Coordination with Integrated Resource Planning Proceeding

As required by the ACR,³⁹ SJCE includes the following table that describes how SJCE's Draft 2022 RPS Procurement Plan conforms with the IRP proceeding and aligns with the information in SJCE's 2020 IRP that was approved in D. 22-02-004. SJCE is currently undertaking modeling for its 2022 IRP individual plan filing and will update the final 2022 RPS Procurement Plan with its findings after the IRP is approved by City Council in the Fall of 2022.

IRP Section Subsection	RPS Alignment in IRP
III. Study Results 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.
	In its approved 2020 IRP filing, SJCE selected its 38 MMT GHG resource portfolio as its preferred portfolio, which, in addition to the RPS resources already under contract with SJCE, adds 100 MW of wind, 320 MW of solar, and 200 MW of battery storage by 2030. 1. <u>Contracted Existing RPS resources</u>: SJCE has two RPS resources online as of December 2021: 1) a 62 MW solar resource with fixed energy deliveries between HE7 and HE 22 and 2) a 225 MW New Mexico wind resource delivering dynamically scheduled PCC1 imports. SJCE relies on short-term REC contracts until the remainder of its new resources under long-term contracts come online. 2. <u>Planned Existing RPS resources</u>: SJCE may enter into additional short-term contracts with existing resources as needed. SJCE also

³⁹ ACR at 37-39.

	plans to accept some amount of the short-term voluntary allocations from PG&E. 3. <u>New RPS resources</u>: SJCE has contracted for a total of 487 MW of renewable generation, including 262 MW of new in-state solar and 225 MW of new out-of-state wind, as well as 10 MW of co-located 4-hour lithium-ion batteries. SJCE expects two in development-renewable resources agreements to be delivering power (although potentially not from a new facility initially) by 2024, including 100 MW solar paired with 10 MW storage and an additional solar resource. 4. <u>New and existing resources that will be used to meet CPUC Mid-Term Reliability (MTR) obligations adopted in D.21-06-035</u>: SJCE has entered two contracts for long-duration storage totaling 27 MW and plans to enter additional contracts for geothermal, energy storage, and renewable energy paired with energy storage. SJCE will use its new online wind resource to meet the first year of its MTR compliance.	
IV. Action Plan A. Proposed Activities	Retail sellers should describe how they propose to use RPS resources to implement both Conforming Portfolios.	
	<i>1. Proposed RPS procurement activities as required by Commission decision or mandated procurement.</i>	SJCE has contracted for 487 MW of new renewable generation which will supply roughly 44 percent of SJCE’s load by 2024, the first full year when all SJCE new resources are anticipated to be operational. SJCE expects its currently contracted resources to exceed the 65 percent long-term contracting requirement in the 2021-2024 compliance period and beyond. SJCE plans to add new solar, wind, geothermal or biomass, and storage at a measured pace over the next decade to ensure SJCE’s portfolio is cost-effective, meets State law requirements and does not result in excess supply. SJCE will also continue to procure short-term renewable resources to ensure compliance with State RPS mandates and to meet Council-approved portfolio content goals.
	<i>2. Procurement plans, potential barriers, and resource viability for</i>	Potential barriers for all procurement include: (1) risks associated with power procurement, which is addressed in SJCE’s risk management

	<i>each new RPS resource identified.</i>	strategy; (2) regulatory and market uncertainties such as dramatically fluctuating IOU PCIA rates; global supply chain constraints; tariffs on solar panels; and (4) changes to RA requirements, cost, counting rules, and system reliability needs. Additionally, SJCE’s procurement activities seeking long-duration storage could reduce the risk of curtailment of wind and solar.
IV. Action Plan	The retail seller should describe the solicitation strategies for the RPS resources that will be included in both Conforming Portfolios. This description should include:	
B. Procurement Activities	<i>1. The type of solicitation.</i> <i>2. The timeline for each solicitation.</i> <i>3. Desired online dates.</i> <i>4. Other relevant procurement planning information, such as solicitation goals and objectives.</i>	In fall of 2020, SJCE joined seven other CCAs to issue a joint-RFO for long duration storage (eight hours or longer) to cost-effectively enhance renewable energy portfolios and aid in achieving California’s aggressive GHG reduction targets. As of this filing, SJCE has entered into two agreements with CODs of 2025 and 2026. These storage projects will add reliability and decrease system renewable energy curtailment. In fall of 2021, CC Power issued a solicitation for firm clean resources on behalf of its members including SJCE. As of this filing, CC Power contracted with two developers, and SJCE expects to seek City Council approval to participate in those projects in the Fall. In February 2022, SJCE and EBCE jointly issued a solicitation seeking long-term agreements for renewables, renewables paired with storage, and standalone storage to meet the Mid-Term Reliability requirements and satisfy some of the mid-term RPS resource procurement identified in SJCE’s preferred IRP portfolio. To address procurement needs out to 2032, SJCE will take a measured approach to

		procurement of the identified needed RPS resources to allow for technology maturation, resolution of regulatory uncertainty, additional load certainty, and flexibility as market prices adjust over time. Solicitations in partnership with other CCAs have been successful in the past and SJCE anticipates continuing this approach in the future.
IV. Action Plan 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:	
	<i>1. Key market, regulatory, financial, or other resource viability barriers or risks associated with the RPS resources coming online in both retail sellers' Conforming Portfolios.</i>	SJCE has identified key risks associated with RPS resources coming online. Risks include: • Project development delays due to, for example, supply chain disruptions or interconnection issues • Resource delivery disruptions • Regulatory uncertainty regarding future resource adequacy value of renewable and storage • Uncertainty regarding cost declines for forecasted wind, solar, and storage resources • Curtailment and negative pricing • Viability of long-lead time resources SJCE seeks to mitigate these risks and other impacts through continued development of a diversified portfolio and following its established risk management policy.
	<i>2. Key risks associated with the potential retirement of existing RPS resources on which the retail seller intends to rely in the future.</i>	Key risks associated with the potential retirement of existing RPS resources include under-procurement of long-term RPS contracts and increased costs associated with filling an open position. As SJCE continues to expand its portfolio with long-term contracts, it will rely less on market purchases from existing resources.

Dated: July 1, 2022

Respectfully submitted,

/s/ Kari Smith

Kari Smith
Division Manager, Legislative and
Regulatory Division
San José Clean Energy
88 South 4th Street, Suite 130
San José, CA 95112
(408) 535-4867
kari.smith@sanjoseca.gov

/s/ Jeanne Solé

Jeanne M. Solé
Deputy Director, Power Resources
San Jose Clean Energy
88 South 4th Street, Suite 130
San Jose, CA 95112
(408) 535-4867
jeanne.sole@sanjoseca.gov

Appendix A

Redlined Version of Draft 2022 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 18-07-003

**DRAFT 2022~~FINAL 2021~~ RENEWABLES PORTFOLIO STANDARD PROCUREMENT
PLAN**

OF CITY OF SAN JOSÉ, ADMINISTRATOR OF SAN JOSÉ CLEAN ENERGY

**PUBLIC VERSION
(Appendix E Redacted)**

Kari Smith
Division Manager, Legislative
and Regulatory Division
San José Clean Energy
88 South 4th Street, Suite 130
San José, CA 95112 (408) 535-4867
kari.smith@sanjoseca.gov

Jeanne M. Solé
Deputy Director, Power Resources
San Jose Clean Energy
88 South 4th Street, Suite 130
San Jose, CA 95112
(408) 535-4867
jeanne.sole@sanjoseca.gov

July 1~~February 17~~, 2022

**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 18-07-003

**DRAFT 2022~~FINAL 2021~~ RENEWABLES PORTFOLIO STANDARD PROCUREMENT
PLAN
OF CITY OF SAN JOSÉ, ADMINISTRATOR OF SAN JOSÉ CLEAN ENERGY

PUBLIC VERSION
(Appendix E Redacted)**

In accordance with the California Public Utilities Commission's ("~~Commission~~" or "~~CPUC~~") April 11, 2022~~March 30, 2021~~ Assigned Commissioner and Assigned Administrative Law Judges' Ruling Identifying Issues and Schedule of Review for 2022~~2021~~ Renewables Portfolio Standard Procurement Plans and Denying Joint IOUs' Motion to File Advice Letters for Market Offer Process ("~~ACR~~") ~~and the Decision on 2021 Renewables Portfolio Standard Procurement Plans, issued on January 18, 2022 ("D.22-01-004")~~, the City of San José, ("~~City~~"), Administrator of San José Clean Energy ("~~SJCE~~") hereby submits this Draft 2022~~Final 2021~~ Renewables Portfolio Standard Procurement Plan ("2022 Draft RPS Procurement Plan"). As directed by the ACR, this Draft 2022 RPS Procurement Plan addresses sections 65.1-65.16 of the ACR.

I. Major Changes to RPS Plan

This Section describes the most significant changes between SJCE's Final ~~2020 RPS Procurement Plan and its Final~~ 2021 RPS Procurement Plan ~~and its Draft 2022 RPS Procurement Plan~~. The list of the key differences between the Final 2021 and Draft 2022 RPS Procurement Plans are provided in Table 1 below, and a ~~A~~-redline of this ~~Draft 2022 RPS Procurement Plan against SJCE's~~ Final 2021 RPS Procurement Plan ~~against SJCE's Draft 2021 RPS Procurement~~

Plan is also included as Appendix A. ~~Table 1 below provides a list of key differences between the 2020 and 2021 RPS Procurement Plans:~~

Table 1: Major Changes to RPS Plan

Plan Reference	Plan Section	Summary/Justification of Change
Draft 2022 <u>Final 2021</u> RPS Procurement Plan: Section III	Summary of Legislation Compliance	Updated to describe <u>compliance with Senate Bill (“SB”) 255</u> the process for taking official positions on legislation.
Draft 2022 <u>Final 2021</u> RPS Procurement Plan: Section IV	Assessment of RPS Portfolio Supplies and Demand	Updated to describe SJCE procurement since <u>2021</u> 2020 , San José City Council (“ <u>City Council</u> ”)’s latest decision on SJCE’s power mix, and SJCE’s latest renewable procurement goals.
Draft 2022 <u>Final 2021</u> RPS Procurement Plan: Section IV.A. <u>2</u> +	Portfolio Optimization	Removed <u>Updated</u> discussion of <u>Power Charge Indifference Adjustment (“PCIA”)</u> allocations in optimizing existing resources <u>and updated section to illustrate how optimization satisfies numerous regulatory obligations and advances SJCE’s RPS goals.</u>
Draft 2022 <u>Final 2021</u> RPS Procurement Plan: Section IV.B	Responsiveness to Local and Regional Policies	Updated to describe impacts of local and regional policies on procurement targets, bid solicitation protocols, and forecasted supply.
Draft 2022 <u>Final 2021</u> RPS Procurement Plan: Section IV.D <u>VIII</u>	<u>Lessons Learned</u> Renewable Net Short (“RNS”) Calculation	<u>Updated to reflect on SJCE’s approaches to optimizing RPS resource planning and procurement and adapting to market disruptions and interconnection issues.</u> Updates SJCE’s RPS Procurement targets as described in Table 4.
Draft 2022 <u>Final 2021</u> RPS Procurement Plan: Section VIII <u>X</u>	Renewable Net Short (“RNS”) Calculation <u>Bid Solicitation Protocol</u>	Updated to include discussion of <u>SJCE’s failure risk assessment and how it is incorporated into the Renewable Net Short calculation</u> joint solicitations.

Draft 2022 Final 2021 RPS Procurement Plan: Section IX XII	<u>Minimum Margin of Procurement ("MMoP")</u> Safety Considerations	<u>Updated to describe SJCE's quantitative method for determining the MMoP and Voluntary Margin of Procurement ("VMoP") and relation to the State's and SJCE's RPS Procurement targets as illustrated in Table 4.</u> Added discussion on SJCE's safety consideration in contracts.
--	---	--

II. Executive Summary

SJCE's Draft 2022 RPS Procurement Plan demonstrates its progress towards meeting the State's renewable electricity procurement requirements set forth in SB 100, SB 350, and its own local renewable energy goals set forth in the City of San José's Climate Smart Plan¹ ("Climate Smart") and San José's goal to be carbon neutral by 2030.² The Draft 2022 RPS Procurement Plan also builds on the 38 million metric tons ("MMT") portfolio, which was SJCE's preferred 2020 Integrated Resource Plan ("IRP"),³ a 30 MMT portfolio it developed during the 2020 IRP process to inform its procurement⁴ and the mid-term reliability requirements adopted by the CPUC in Decision ("D.") 21-06-035.⁵ SJCE plans to update its carbon reduction and renewable energy procurement strategy based on the City of San José's target to become carbon neutral by 2030 during the 2022 IRP process. As illustrated throughout this Draft 2022 RPS Procurement Plan, SJCE's planned procurement is expected to result in RPS procurement above the State's requirement for the RPS Compliance Period from 2021-2024 and for each year through 2032.

SJCE has entered into five Power Purchase Agreements ("PPAs") over the last three years, including a 225 mega-watt ("MW"), fifteen-year agreement for wind, a 62 MW twelve-year agreement for fixed delivery solar, a 100 MW fifteen-year agreement for solar, a 100 MW

¹ Climate Smart San José: A People-Centered Plan for a Low Carbon City (2018), *available at* <https://www.sanjoseca.gov/yourgovernment/environment/climate-smart-san-jos>.

² San José City Council, Res. No. 80284 (2021) (enacted), *available at* <https://www.sanjoseca.gov/home/showpublisheddocument/81390/637783661846800000>.

³ San Jose Clean Energy's 2020 Integrated Resource Plan (Sept. 1, 2020), *available at* <https://sanjosecleanenergy.org/resources/>.

⁴ *Id.* at 2.

⁵ *See* D.21-06-035, *available at* <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M389/K603/389603637.PDF>.

twenty-year agreement for solar plus 10 MW of energy storage, and a 1.736 MW fifteen-year agreement for solar to serve disadvantaged communities. With these agreements, SJCE has procured in excess of its State RPS and IRP requirements and diversified its portfolio with contracts of different lengths and products. Notwithstanding supply chain disruptions from the COVID-19 pandemic, two of these agreements commenced operation in December of 2021. Based on information provided by the respective developers, supply chain and other issues are affecting the two remaining agreements that were slated to commence operation on December 31, 2022, with one project delayed to April 2023, and the second unlikely to be built. SJCE is in conversations with both developers about potential alternatives that would retain the contract value for SJCE's customers. Despite the delays with these two agreements, SJCE is on track to comply with the State's RPS requirements.

In addition to issuing its own solicitations for RPS resources, in 2020 and 2022, SJCE issued two solicitations with other Community Choice Aggregators ("CCAs") for renewables, renewables paired with storage, and stand-alone storage. No agreements resulted from the 2020
~~In this RPS Plan, SJCE sets out an RPS procurement plan that would result in SJCE emissions consistent with its proportional share of a case resulting in 30 million metric tons ("MMT") by 2030 for the California electric sector. To develop this plan, SJCE relied in part on modeling undertaken during the 2020 Integrated Resource Plan ("IRP"). This plan is also consistent with Council's approval in 2021 of a 55 percent RPS content for SJCE's 2021 default product GreenSource.⁶ Finally, this plan incorporates the Commission's directives from D. 21-06-035 on Mid-Term Reliability signed on June 24, 2021.⁷ SJCE's 30 MMT Portfolio is more aggressive than the requirements of D. 21-06-035 so SJCE only had to replace certain types of renewables with others to meet the D. 21-06-035 requirements. SJCE, along with other Community Choice Aggregators ("CCAs"), continues to face significant regulatory challenges, but in this plan, SJCE~~

~~6 Council approved a 60 percent RPS content for SJCE's 2022 default product GreenSource.~~

~~⁷ In August of 2020, when SJCE took its IRP recommendations to Council, SJCE recommended adoption of the 38 MMT Portfolio in light of regulatory challenges, but also stated: "SJCE should continue implementing prudent portfolio management to manage regulatory and economic risks. SJCE will need to add new renewables at a measured pace to ensure SJCE's portfolio is cost effective and does not result in excess supply. SJCE will use the information in the carbon neutral and 30 MMT Portfolio to guide its procurement." SJCE's 2020 IRP is available at:-~~

nonetheless charts a path forward that is consistent with City Council actions and San José's aggressive climate action goals:

~~SJCE commenced providing service to customers in September of 2018 and now serves the majority of the City of San José's retail demand. SJCE's 2018 IRP set forth SJCE's goals with respect to renewable and greenhouse gas ("GHG") free power content, derived in large part from Climate Smart San José, San José's road map to achieve its commitment to meet the greenhouse gas emission reduction targets of the United Nations Paris Agreement. SJCE's 2018 IRP projected that SJCE would procure 460 megawatts ("MW") of in-state solar and 310 MW of in-and out-of-state wind to commence service in 2021. No further long-term renewable procurement was identified until 2027.~~

~~SJCE's 2020 IRP updated the 2018 projections based on actual operations. SJCE submitted two portfolios:~~

- ~~• A conforming portfolio that results in SJCE emissions equal to its proportional share of a statewide electric system case that emits 46 MMT of GHG emissions by 2030 (the "46 MMT Portfolio"); and~~
- ~~• A conforming portfolio that results in SJCE emissions equal to its proportional share of a statewide electric system case that emits 38 MMT of GHG emissions by 2030 (the "38 MMT Portfolio").~~

~~SJCE presented the 38 MMT Portfolio as its preferred portfolio. In addition, during the 2020 IRP process, SJCE modeled a portfolio that resulted in SJCE emissions equal to its proportional share of a statewide electric system case that emits 30 MMT of GHG emissions by 2030 (the "30 MMT Portfolio") but did not present this portfolio to the CPUC. SJCE informed Council that it would "use the information in the carbon-neutral and 30 MMT portfolios to guide its procurement."⁸~~

~~The 2018 SJCE IRP also provided for the addition of 5 MW of distributed solar generation. SJCE is evaluating the possibility of implementing a "feed-in tariff" program under which SJCE would agree to enter into power purchase agreements ("PPA") from customers who build renewable power resources on their buildings or adjacent lands (and who choose not to use~~

⁸City of San José, *Council Memorandum, Integrated Resource Plan and Power Procurement*, Aug. 25, 2020, download link available at:

~~those resources in the net energy metering program). The earliest that the implementation of such a program would happen would be in late 2022.~~

~~In spring of 2021, Council approved new rate and product offerings effective May 15, 2021. The renewable energy content in the default product offering, GreenSource, was increased to 55 percent and a new product was created, GreenValue, which has a renewable energy content that will align with the state minimum compliance targets.⁹ TotalGreen will remain 100 percent renewable energy content. Finally, a new program called SJ Cares was established that offers California Alternate Rates for Electricity (“CARE”) and Family Electric Rate Assistance (“FERA”) customers price parity to Pacific Gas and Electric Company (“PG&E”) rates for GreenSource generation.¹⁰ This approval put SJCE on the path to meet the 30 MMT Portfolio. In addition, the CPUC is directing additional procurement by load-serving entities in the IRP proceeding.¹¹ This Final 2021 RPS Procurement Plan integrates the requirements set forth in D. 21-06-035 with the procurement needs identified in SJCE’s 30 MMT Portfolio. This plan smooths out the RPS target for GreenSource consistent with the 30 MMT Portfolio, and assumes SJCE will maintain TotalGreen, GreenValue, and CARE/FERA programs consistent with those approved by Council in May of 2021.~~

~~SJCE noted in its 2020 IRP that “[a] handful of important regulatory and market risks are affecting SJCE’s ability to pursue its aggressive environmental goals and to provide for the RA resources that are a necessary complement.” Nevertheless, to date, SJCE has entered into four long-term RPS agreements:~~

- ~~• 62 MW of solar in Kern County with an achieved in-service date of December 31, 2021 and guaranteed daily delivery during Hours Ending 07 to 22.~~
- ~~• 225 MW of wind in New Mexico with an achieved in-service date of December 31, 2021.~~
- ~~• 100 MW of solar and 10 MW co-located battery storage in Fresno County with an in-service date of December 31, 2022.~~
- ~~• 100 MW of solar in Kern County with an in-service date of December 31, 2022.~~

⁹ City of San José, *Council Memorandum, 2021 Service and Rate Changes*, Apr. 26, 2021, download link available at :-

¹⁰ GreenSource generation service will be set at parity to PG&E generation rates after accounting for the Franchise Fee Surcharge and the Power Charge Indifference Adjustment.

¹¹ , D.21-06-035.

~~This RPS Plan provides for the addition of the following resources by 2030:~~

- ~~• 350 MW battery storage~~
- ~~• 475 MW solar PV~~
- ~~• 100 MW wind~~
- ~~• 21.5 MW geothermal or biomass~~

~~Pending commercial operation of contracted and planned projects, SJCE will buy short-term Renewable Energy Credits (“RECs”) from existing projects to meet its RPS requirements and its internal goals. SJCE intends to issue an RPS solicitation, but SJCE shortlisted a few projects in the first quarter of 2022 solicitation and is in active negotiations.~~

SJCE also participated in working on joint procurement undertaken with other CCAs through the California Community Power (“CC Power”), a Joint Powers Authority formed by 10 CCAs to combine their buying power to acquire new, cost-effective clean energy, and reliability resources and continue advancing local and state climate goals. SJCE joined solicitations in 2020 for long-duration storage and in 2021 for firm clean resources. Through these solicitations, SJCE will purchase long-duration storage from two CC Power 8-hour lithium-ion battery projects in California and, if approved by City Council, will receive firm clean resources from two CC Power agreements for geothermal resources in Nevada. Lastly, SJCE is planning to accept portions of its short-term and long-term allocations in the Voluntary Allocation Market Offer (“VAMO”) process.”

SJCE assesses portfolio supply and demand and the risks that may impact its compliance with state and local renewable energy policies on a regular basis. This Draft 2022 RPS Procurement Plan describes SJCE’s assessment of key risks and the risk mitigation strategies it employs to ensure regulatory compliance such as increasing diversity of resources, geographies, and contracting terms, and re-evaluating the Minimum of Over-Procurement (“MMoP”) and Voluntary Margin of Procurement (“VMoP”) above the State’s RPS mandates.

City Council approved increasing SJCE’s base product, GreenSource, to 60 percent renewable, keeping SJ Cares customers receiving power at 5% below Pacific Gas & Electric’s (“PG&E”) rates in GreenSource service, and increasing SJCE’s GreenValue product to 40 percent renewable in 2022. The renewable energy content in these product offerings allows SJCE

to satisfy the State's RPS requirements and make progress towards its local goal of achieving carbon neutrality by 2030.

This Draft 2022 RPS Procurement Plan also reflects on lessons learned in SJCE's three years of operation and during the challenging past year when projects have been adversely affected by global supply chain disruptions related to COVID measures in Asia and around the world. Key insights include diversifying its portfolio with differing contract lengths, technologies, and locations to minimize risk and increase reliability on the grid. In addition, SJCE will seek improvements to contracts with developers to improve accountability and will monitor project progress to ensure supply chain challenges are addressed without compromising contract value, reliability, carbon reduction, or compliance.

III. Summary of Legislation Compliance

SJCE's planned renewable energy procurement detailed in this Draft 2022 ~~This RPS Procurement Plan comports with and advances its compliance with~~ addresses the requirements of all relevant legislative mandates, legislation and the Commission's regulatory framework. This Section describes the relevant statutory and regulatory requirements and ~~how this RPS Procurement Plan~~ demonstrates how that SJCE meets these requirements through its procurement planning.

~~Senate Bill ("SB") 350 (de Leon), enacted stats. 2015) was signed by the Governor on October 7, 2015, increased California Load Serving Entity ("LSE") renewable electricity. SB 350 set a new RPS procurement targets to target of 50 percent by December 31, 2030. On December 20, 2016, the Commission issued D.16-12-040, which partially implemented the increased targets of SB 350 by establishing new compliance periods and implemented a requirement that at least 65 percent of all energy procurement counted towards its RPS compliance must be pursuant to quantity requirements. On July 5, 2017, the Commission issued D.17-06-026, which implemented some of the key remaining elements of SB 350, including adopting new minimum procurement requirements for long-term contracts of 10 years or more in duration.¹² A few years later, SB and owned resources, as well as revising the excess procurement rules.~~

¹² See Cal. Pub. Util. Code § 399.13(b) and D.17-06-026 at 49, available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M191/K530/191530416.PDF>.

~~SB-100 (de Leon) came into effect~~~~was signed by the Governor on September 10, 2018 and became effective~~ on January 1, 2019 ~~and~~. ~~SB-100 increased LSE renewable~~~~the RPS~~ procurement ~~goals~~~~requirements~~ to 44 percent by December 31, 2024, 52 percent by December 134, 2027, and 60 percent by December 31, 2030.¹³ ~~On June 6, 2018, the Commission issued D.18-05-026, which implemented changes made by SB-350 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 SJCE's RNS Calculation Table as described in Section VIII below and attached as Appendix C. SJCE's current and planned procurement, as reflected in SJCE's RNS Calculation Table and described in Sections IV and V,~~ is sufficient to meet ~~and/or~~ exceed these State RPS procurement requirements, as described in Sections V and VII, and includes statutorily required long-term contracts, as described in Sections V and VII. SJCE's executed and planned renewable power procurement includes targets, including a minimum margin of over-procurement based on SJCE's risk assessment, as further described in Sections VII and IX. State RPS~~SJCE is also positioned to meet the SB-350 long-term~~ procurement targets are incorporated into SJCE's RNS Table~~requirement,~~ as described in Section VIII below~~Sections V and~~ attached as Appendix C. SJCE has adopted higher annual renewable procurement percentage targets~~VII.~~

~~SB-901, signed by Governor Brown on September 21, 2018, added to the Public Utilities Code section 8388, which requires any investor-owned utility ("IOU"), publicly-owned electric utility, or community choice aggregator ("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 required by state law to meet City of San José's climate policy goals and its initiative to reach carbon neutrality city-wide by 2030.~~~~the expiration date that was operative as of 2018. SJCE does not have a contract with a biomass facility that is covered by Public Utilities Code section 8388.~~

¹³ See Cal. Pub. Util. Code § 399.15(b)(2)(B).

~~Regarding support for legislation, SJCE will generally post a press release regarding official positions on major legislation to SJCE's website at the following link:~~

~~[https://sanjosecleanenergy.org/resources/#prSB 255](https://sanjosecleanenergy.org/resources/#prSB255) (Bradford, Stat. 2019, Ch. 407) was signed by Governor Newsom in September 2019 and requires CCAs with more than \$15 million in annual revenues to submit a Supplier Diversity Report and Plan to the CPUC every March 1st.¹⁴ Reporting requirements include an annual plan describing activities to increase procurement, including but not limited to energy supply, from small, local, and diverse business enterprises.¹⁵ In April 2022, the CPUC issued D.22-04-035, which revised the CPUC's Supplier Diversity program established in General Order 156 to incorporate CCAs and Electric Service Providers.¹⁶ SJCE is complying with the reporting requirements and Proposition 209 limitations that regulate public entities. SJCE activities include vendor outreach and information sharing regarding General Order 156 supplier certification and SJCE procurement opportunities.~~

~~=~~

~~SJCE is a member of the California Community Choice Association ("CalCCA"), which regularly takes formal support positions on legislation. However, a support position of CalCCA does not necessarily reflect the uniform support of every member of CalCCA, and thus should not be imputed to the individual members of CalCCA.~~

IV. Assessment of RPS Portfolio Supplies and Demand

~~SJCE~~ ~~SJCE met and exceeded its RPS obligations for the 2017 to 2020 compliance period and expects to meet and exceed its RPS obligations through 2030, including its RPS obligations under SB 350 and SB 100, and meeting the long-term contracting requirement. SJCE~~ structures its procurement ~~efforts~~ to balance customer demand with resource commitments. As part of its forecasting, planning, and procurement processes, SJCE considers the deliverability characteristics of its resources (including the resource's dispatchability and available capacity) and reviews the respective risks associated with short-, medium-, and long-term purchases. These efforts lead to a ~~more~~ diverse resource mix, address grid integration issues, and provide

¹⁴ General Order 156, Section 9, *available at*

~~<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M466/K761/466761945.pdf>.~~

¹⁵ *Id.*, at Section 11.

¹⁶ D.22-04-035 at 73, Ordering Paragraph 2, *available at*

~~<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M466/K761/466761944.PDF>.~~

value to the local community. SJCE met and exceeded its RPS obligations for the 2017 to 2020 compliance period and is on track to meet and exceed its RPS obligations through the 2032 planning horizon.

~~SJCE has entered into one solar PPA with a guaranteed delivery profile and will continue to explore contracting approaches that provide maximum benefit and moderate risks for its customers.~~

IV.A. Portfolio Supply and Demand

DEMAND

SJCE regularly evaluates supply and customer demand to plan procurement. SJCE's demand for RPS eligible resources is a function of State RPS requirements, expected SJCE customer load, greenhouse gas ("GHG") emission reduction goals and requirements, and the City Council-approved renewable energy content of SJCE's products. In addition, to comply with the City of San José's Climate Smart plan and its policy to become carbon neutral by 2030,¹⁷ SJCE has adopted renewable energy targets that exceed the State's SB 100 annual RPS targets. Table 2 shows SJCE's demand for RPS resources as established in the 2021 RPS procurement plan. The numbers also reflect the retail products City Council approved for 2022. Because the City of San José's goals exceed the State's mandates, SJCE will comfortably meet the RPS requirements (measured on a percentage basis) for the 2021-2024 compliance period but will need to procure additional RPS resources over time to fill its open position to meet the City of San José planned targets. SJCE is in the process of undertaking modeling for the 2022 IRP and identifying the most cost-effective approach to meet the recently adopted Carbon Neutral by 2030 goal. SJCE will update its internally adopted RPS targets as appropriate in its 2022 IRP.

~~As shown in Table 2, in order to meet its local RPS targets, SJCE has an open position for RPS energy of approximately 350 GWh in 2022, growing to approximately 1,350 GWh in 2030.~~

¹⁷ San José City Council, *supra* note 2.

Table 2: SJCE 2021-2032 RPS Procurement Targets

Year	Retail Energy Forecast (GWh)¹⁸	Compliance RPS (%)	Compliance RPS (GWh)	Planned Target RPS (%)	Planned Target RPS (GWh)	RPS Under Contract (GWh)
2021	3,852	35.8%	1,595	53.8%	2,072	1,871
2022	3,785	38.5%	1,709	54.1%	2,049	1,689
2023	4,496	41.3%	1,830	54.3%	2,443	1,902
2024	4,525	44.0%	1,952	59.1%	2,672	1,904
2025	4,552	46.7%	2,074	59.4%	2,702	1,898
2026	4,576	49.3%	2,192	59.7%	2,731	1,896
2027	4,594	52.0%	2,312	64.4%	2,958	1,894
2028	4,613	54.7%	2,433	64.7%	2,984	1,896
2029	4,629	57.3%	2,548	65.0%	3,008	1,890
2030	4,647	60.0%	2,669	70.0%	3,253	1,888

<u>Year</u>	<u>Retail Energy Forecast (GWh)¹⁹</u>	<u>California RPS Compliance (%)</u>	<u>California RPS Compliance (GWh)</u>	<u>SJCE Planned Target RPS (%)</u>	<u>SJCE Planned Target RPS (GWh)</u>	<u>RPS Under Contract (GWh)</u>
<u>2021</u>	<u>3,787</u>	<u>35.8%</u>	<u>1,361</u>	<u>50.1%</u>	<u>1,896</u>	<u>1,939</u>
<u>2022</u>	<u>3,770</u>	<u>38.5%</u>	<u>1,452</u>	<u>60.4%</u>	<u>2,276</u>	<u>2,214</u>
<u>2023</u>	<u>3,790</u>	<u>41.3%</u>	<u>1,565</u>	<u>61.4%</u>	<u>2,326</u>	<u>1,835</u>
<u>2024</u>	<u>3,821</u>	<u>44.0%</u>	<u>1,681</u>	<u>63.1%</u>	<u>2,411</u>	<u>1,903</u>
<u>2025</u>	<u>3,844</u>	<u>46.7%</u>	<u>1,795</u>	<u>64.4%</u>	<u>2,478</u>	<u>1,903</u>
<u>2026</u>	<u>3,868</u>	<u>49.3%</u>	<u>1,907</u>	<u>65.8%</u>	<u>2,545</u>	<u>1,901</u>
<u>2027</u>	<u>3,894</u>	<u>52.0%</u>	<u>2,025</u>	<u>67.1%</u>	<u>2,615</u>	<u>1,898</u>
<u>2028</u>	<u>3,922</u>	<u>54.7%</u>	<u>2,145</u>	<u>68.5%</u>	<u>2,685</u>	<u>1,901</u>
<u>2029</u>	<u>3,958</u>	<u>57.3%</u>	<u>2,268</u>	<u>69.8%</u>	<u>2,763</u>	<u>1,895</u>

¹⁸SJCE internal load forecast: 2021-2022. 2019 IEPR Form 1.1e Retail Load Forecast: 2023-2030.

¹⁹ 2021 is actual load. All remaining years are from the Baseline Mid-Demand scenario, 2021 California Energy Commission Integrated Energy Planning Report Forecast, available at <https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2021-integrated-energy-policy-report/2021-1>.

<u>2030</u>	<u>3,996</u>	<u>60.0%</u>	<u>2,397</u>	<u>71.1%</u>	<u>2,842</u>	<u>1,892</u>
<u>2031</u>	<u>4,040</u>	<u>60.0%</u>	<u>2,424</u>	<u>72.5%</u>	<u>2,928</u>	<u>1,890</u>
<u>2032</u>	<u>4,079</u>	<u>60.0%</u>	<u>2,448</u>	<u>73.8%</u>	<u>3,010</u>	<u>1,893</u>

SUPPLY

SJCE uses a combination of short-, medium-, and long-term agreements to meet its RPS obligations and goals. SJCE has five long-term PPAs with new renewable resources totaling 489 MW:

- Renewable PPA between Clines Corners Wind Farm LLC and the City of San José, dated April 30, 2020 (“Clines Corners”).
- Renewable PPA between Edwards Solar IV, LLC and the City of San José, dated November 13, 2020 (“Edwards IV”).
- Renewable PPA between EDPR CA Solar Park VI LLC (“EDPR”) and the City of San José, dated August 6, 2019, as amended by the First Amendment to Renewable Purchase Power Agreement between RE Scarlet LLC and City of San Jose, dated March 18, 2022 (“Scarlet”).
- Renewable PPA between Edwards Solar V, LLC and the City of San José, dated December 16, 2019 (“Edwards V”).
- Renewable PPA between West Tambo Clean Power, LLC and the City of San Jose, dated May 8, 2022 (“West Tambo”).

At the end of 2021, notwithstanding challenges associated with the COVID19 pandemic, two of SJCE’s long-term agreements began delivery. The 225 MW Clines Corners wind project located in New Mexico and the 62 MW Edwards IV solar project located in California together represent approximately 32 percent of SJCE load in 2022 and approximately 60 percent of SJCE’s State RPS compliance requirements in 2021-2024. By 2024, SJCE expects to have deliveries from five long-term RPS energy agreements when the 100 MW Scarlet solar project and the West Tambo solar Project come online in April 2023 and provided SJCE successfully finalizes negotiations with the developer for alternative supply to the 100 MW Edwards V solar project. These projects are expected to meet 80 percent of the RPS Compliance Period 4

requirements and meet the State’s 65 percent RPS long-term contracting requirement. SJCE will procure the remaining 20% from a to-be-determined combination that could include new projects from current or~~In fall of 2018, SJCE participated in an East Bay Community Energy Authority long-term renewable agreements solicitation. Through this participation, SJCE signed two PPAs, each with a 100-MW solar project, and one of which includes a 10-MW battery energy storage component. On May 16, 2019, SJCE released its 2019 Request for Offers for Long-term Renewables with commercial operation dates (“COD”) in 2020-2021, seeking to purchase Portfolio Content Category 1²⁰-eligible renewable energy and associated products.²¹ SJCE signed two PPAs from this solicitation, a 62-MW solar project with guaranteed delivery profile in on-peak hours and a 225-MW out-of-state wind project. Both projects achieved commercial operation by December 31, 2021 and are now online.~~

~~In the summer of 2020, SJCE and Peninsula Clean Energy (“PCE”) jointly issued a request for offers (“RFO”) entitled ‘2020 Request for Offers for Long-Term Renewable Energy + Storage’ for long-term renewable agreements. SJCE did not enter into further~~ solicitations, supply from the PG&E VAMO and/or Renewable Energy Credits (“RECs”) from existing projects.

The characteristics of SJCE’s portfolio will vary over time, influenced by legislative and regulatory changes, market drivers and technology improvements as well as changes to the community’s needs and preferences. SJCE expects to ~~agreements as a result of that solicitation. Instead, SJCE expects to~~ conduct additional solicitations on a staggered basis over the coming years to ~~incrementally and cost-effectively~~ fill in remaining net open RPS positions incrementally and cost-effectively, as described in Section VIII Renewable Net Short, while retaining the opportunity to benefit from rapidly maturing technologies and declining market costs. ~~SJCE plans to issue a solicitation in the first quarter of 2022 that focus on meeting its needs defined in the mid-term reliability procurement mandate. SJCE will issue additional solicitations and continue to buy RECs from existing projects as needed to achieve its state requirements and local goals.~~

²⁰~~As defined in California Public Utilities Code § 399.16(b)(1).~~

²¹~~San José Clean Energy, 2019 Request for Offers for Long-Term Renewables COD 2020-2021, available at: -~~

IV.A.1. Voluntary Allocation Market Offer (VAMO)

On May 20, 2021, the CPUC adopted D.21-05-030 to accept and implement the staff VAMO proposal for Investor-Owned Utility (“IOU”) RPS resources. PG&E sent SJCE RPS allocations in May 2022, and per the revised CPUC schedule in the May 20, 2022 Ruling,²² SJCE has until July 29, 2022 to complete the VAMO election process. SJCE intends to accept portions of its short-term and long-term allocations on a short-term basis and is still considering whether to accept any portion of the long-term allocation on a long-term basis. As directed in the *Modifying the Renewables Portfolio Standard Program’s Procedural Schedule to Accommodate Filing of Voluntary Allocation and Market Offer Information Adopted in Decision 21-05-030* Ruling, SJCE will update this Draft 2022 RPS Procurement Plan after SJCE has completed the election process with PG&E.²³

IV.A.2. Portfolio Optimization

SJCE has implemented various policies, goals, strategies, and solicitations to optimize its portfolio through 2032. SJCE’s goal is to meet its locally adopted renewable energy and carbon reduction policies and statewide renewable energy mandates in a manner that is ~~both~~-cost - effective and ~~that~~-supports a well-balanced, reliable resource portfolio. Portfolio optimization strategies can help reduce costs and increase portfolio value.~~align SJCE’s portfolio of resources with its forecasted load needs. In order to support this goal,~~ SJCE regularly considers and utilizes the portfolio optimization strategies described below.

JOINT SOLICITATIONS

Joint solicitations can expand the procurement opportunities available to a CCA ~~and, as well as~~ potentially provide better contract terms by allowing CCAs to buy at a larger scale. SJCE regularly evaluates participating in joint solicitations with other CCAs.~~, particularly when considering procuring new, long-term eligible renewable energy resources. As previously stated, SJCE entered into four PPA agreements since the 2019 RPS Procurement Plan was filed.~~ In

²² Administrative Law Judge’s Ruling *Modifying the Renewables Portfolio Standard Program’s Procedural Schedule to Accommodate Filing of Voluntary Allocation and Market Offer Information Adopted in Decision 21-05-030* at 4-7 (May 20, 2022), available at <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M477/K591/477591987.PDF>.

²³ See *id.* at 3-4 (illustrating that LSEs that do not have up-to-date information in their Draft 2022 RPS Procurement Plan are to include the Voluntary Allocation information in the RPS Plan Motion to Update due on August 15, 2022).

2020, SJCE jointly solicited proposals for long-term renewable resources with [Peninsula Clean Energy \(“PCE”\)](#).²³ SJCE participated in a Joint CCA request for information (“RFI”) for long-duration storage, and subsequent [Request for Offers \(“RFO”\)](#) ~~still underway~~, as further described in Section IV.C. [SJCE is currently partnering with East Bay Clean Energy \(“EBCE”\) in an RFO for long-term renewable resources and standalone storage to meet the procurement requirements in D.21-06-035.](#) SJCE will continue to collaborate with other CCAs and ~~load-serving entities (“LSEs”)~~ to find innovative opportunities to procure new, long-term ~~eligible~~-renewable energy resources and maintain SJCE’s commitment to [offering affordable and reliable clean power](#).~~affordability and reliability.~~

~~CALIFORNIA COMMUNITY POWER~~

SJCE is ~~also~~ a founding member of CC Power, a Joint Powers Authority focused on joint CCA procurement [of renewable power and energy storage](#). CC Powers’ members include 10 ~~and~~. ~~California Community Power members~~ represent more than 3 million customer accounts and 7.6 million people across more than 145 municipalities and 17 counties.²⁴ [CC Power enables participating CCAs to increase their purchasing power and streamline negotiations through one agreement for a larger project that can be allocated across multiple CCAs.](#) SJCE’s membership in CC Power has provided it with ~~Joining CC Power gives SJCE~~ the option to participate in [larger projects, or to take a smaller share of a number of projects contracted by CC Power that may not otherwise be possible.](#) ~~CC Power allows for economies of scale needed to support larger projects~~ [to meet its needs, and thus reduce its delivery risk,](#) ~~that help ensure grid reliability such as long-duration storage projects.~~ CC Power ~~undertook two~~~~has undertaken~~ solicitations [in 2021](#) for long ~~-~~duration storage and ~~for~~ firm clean resources, ~~and~~ SJCE is participating in both these efforts [which are further discussed in Section IV.C.](#)

PURCHASES FROM RETAIL SELLERS

Purchases of resales 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~~

²⁴ [Leonard, Pamela, CleanPower SF and Valley Clean Energy Join California Community Power, California Community Power \(May 5, 2021\), available at .](#)
~~<https://eacommunitypower.org/cleanpowersf-and-valley-clean-energy-join-ea-community-power/>~~

~~development.~~ SJCE regularly evaluates and participates in resale solicitations offered by other retail sellers.

SALES SOLICITATIONS

While SJCE's procurement practices are designed so power supplies do not exceed SJCE's load needs, occasionally, SJCE over-procures to ensure it has sufficient resources. SJCE may also procure excess supply due to the size and shape of certain offerings available in the market, uncertainty in regulatory requirements, difficulty in procuring in certain months, and actual load or generation. If excess procurement occurs, SJCE may sell the excess to the extent possible to reduce the total cost of its portfolio. SJCE released a solicitation to sell excess renewable energy in October of 2021. After receiving no responses, SJCE sold the product bilaterally. SJCE will release additional solicitations to sell renewable energy and other products to other retail sellers as necessary.

OPTIMIZING EXISTING PROCUREMENT

When available, SJCE will evaluate opportunities~~regularly reviews alternatives~~ to increase output from existing PPAs through facility upgrades or by adding new capacity to ~~procure~~ the generating facility. ~~To RPS resources it needs and seeks to pursue alternatives that~~ maximize value and minimize risk to its customers, SJCE also considers pursuing new, cost-effective. ~~SJCE's 2020 IRP reviewed an optimal procurement mix including a consideration of different technologies and new~~ projects versus procurement from existing facilities. ~~During the 2020 IRP process, SJCE modeled a 30 MMT Portfolio and SJCE has used that case to develop its procurement requirements for this RPS Procurement Plan.~~

~~In addition, in 2021 SJCE purchased an energy trading and risk management ("ETRM") solution to assist in complex portfolio analysis, risk management, and asset valuation. The new software will allow staff to conduct timely and complex analysis, co-optimization, review and tracking, and hedge optimization. Since SJCE's portfolio is constantly evolving and the market is regularly changing, staff must monitor the portfolio's risks and performance to determine if additional procurement activities are prudent. The ETRM will free existing resources (such as third-party consultants) for other projects, improve decision making, and allow for cost savings.~~

~~SJCE's solicitations commonly accept offers from existing facilities.~~

Moreover, in evaluating procurement and particularly longer term contracts, SJCE must consider the possibility of opting to take PG&E RPS resources from PG&E's voluntary allocation.

The Final Report of Working Group 3 Co-Chairs: Southern California Edison Company (U-338E) California Community Choice Association, and Commercial Energy ("Final Report") was filed on February 21, 2020, in the Commission's PCIA rulemaking (R.17-06-026). One of the Final Report's key proposals was for the Commission to create a "Voluntary Allocation Market Offer" ("VAMO") framework, where each LSE serving customers subject to the PCIA would be provided an annual option to receive an allocation ("Voluntary Allocation") from the IOUs' PCIA-eligible RPS energy portfolios, based on that LSE's forecasted, vintaged load share, and subject to certain conditions. Further, the Final Report proposed that any declined shares would be offered to LSEs through a market process ("Market Offer"). On May 20, 2021, the Commission adopted Decision 21-05-030 ("D.21-05-030"), addressing the proposals in the Final Report. D.21-05-030 adopted the Final Report's VAMO proposal, subject to certain limitations and additional requirements. To implement this modified VAMO structure, D.21-05-030 identifies various next steps, including a meet and confer process with the IOUs regarding the method for calculating potential Voluntary Allocations based on vintaged, annual load forecasts and a method for dividing the IOU's RPS portfolios into shares. This will be followed by the submission of an advice letter and workshops.

As currently scheduled, IOUs and LSEs will confirm the LSEs' elections for Voluntary Allocation in February 2022, with contracting occurring in January or February of 2023. At this early stage, SJCE is preliminarily reviewing its portfolio to determine whether and to what extent any Voluntary Allocation of RPS energy or participation in IOU Market Offers would benefit its position. SJCE will provide an update on this topic in its next RPS Procurement Plan. When undertaking procurement planning, SJCE also considers load migration, including the potential loss of nonresidential customers to Direct Access if the program is re-opened. In D. 21-06-033, the Commission stated that "expansion of Direct Access to all non-residential customers would present an unacceptable risk to the state's long-term reliability goals."²⁵

²⁵ <https://docs.epuc.ca.gov/PublishedDocs/Efile/G000/M384/K264/384264848.PDF>

~~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 2026 and assigned each retail seller a specific procurement responsibility based on its share of peak demand. SJCE’s total obligation is 248 MW, which must include minimum amounts of procurement from certain subcategories: (1) 54 MW from firm, zero-emitting capacity by 2025; (2) 21.5 MW from long duration storage resources by 2026; and (3) 21.5 MW from firm, non-fossil fueled baseload generating resources by 2026. SJCE has adjusted its procurement strategy to comply with this order. SJCE will continue to assess its needs under the order and include details of future procurement in the 2022 RPS Procurement Plan.~~

IV.B. Responsiveness to Local and Regional Policies

RESPONSIVENESS TO LOCAL POLICIES

SJCE’s procurement efforts are responsive to local and state policies, regulations, and statutes. SJCE is a program within the Community Energy Department of the City of San José and is therefore subject to San José municipal law and oversight by the [San José](#) City Manager and City Council. SJCE is thus directly accountable to the community that it serves.

~~In 2018, City~~[SJCE has adopted minimum renewable energy based on](#) Council [adopted Climate Smart, a detailed city plan for reaching the GHG emission targets of the international Paris Agreement.](#)²⁶ [Climate Smart San José set ambitious goals for clean energy and transportation, prudent water management, and sustainable local jobs. To approval in order to meet the clean energy and GHG emissions reduction objectives of Climate Smart, SJCE sets a minimum renewable energy content for the retail energy products it offers to customers.](#) ~~San José, San José’s Climate Action Plan.~~²⁷ SJCE and [City](#) Council review and update ~~these~~ locally adopted targets [at least annually](#)~~periodically~~.

~~In December 2021, City~~ Council [approved an](#) ~~approves SJCE rates and resource mix.~~ ~~SJCE updated SJCE’s power mix of 60~~[its products in May 2021, offering customers three choices: TotalGreen, which is 100](#) percent renewable energy [content for](#); GreenSource, [SJCE’s base product, and 40](#)~~which is 55~~ percent renewable energy [content for](#),~~and~~ GreenValue, [SJCE’s](#)

²⁶ See *Climate Smart San José*, *supra* note 1.

²⁷ ~~More information about Climate Smart San José is available at: :~~

lower cost product, effective January 1, 2022.²⁸ ~~City which tracks to the State's RPS compliance targets (e.g. 35.75 percent in 2021). To limit bill impacts for San José's lowest income residents and increase customer access to renewable energy,~~ Council also approved decreasing the rates of the SJ Cares, a discount program to 5 percent below that would allow customers enrolled in state discount programs CARE and FERA to remain at parity with PG&E's generation E rates while still supplying (GreenValue) but remain in GreenSource service at 60, receiving 55 percent renewable energy content for the City's lowest-income customers. Each of these products exceeds the State's RPS Compliance 2022 target of 38.5 percent.²⁹ These diverse products enable SJCE to align its renewable content and carbon-neutral goals with Climate Smart while also offering affordable options to customers.

In November of 2021, the City of San José pledged to become carbon neutral³⁰ by 2030 to address worsening climate change impacts in California and San José. To achieve this initiative, SJCE expects to increase procurement of low-carbon resources and implement customer-facing programs to reduce GHG emissions from buildings. Approximately 77,300 customer accounts (22 percent of SJCE's customer base) are enrolled in CARE and transportation. By 2030, SJCE intends to provide carbon-neutral electricity on an annual basis. SJCE plans to undertake additional modeling to analyze the impacts of increased EV adoption and building electrification on its load as the City of San José further develops its implementation plan.~~FERA programs.~~³¹

SJCE must follow all applicable municipal rules related to energy procurement. For example, SJCE's RPS bid solicitation criteria follow the City of San José's City's purchasing policies, which include compliance with environmental requirements and any applicable prevailing wage laws, as well as extra credit in its evaluation criteria for local and small businesses.³²

²⁸ *2022 Power Mix Rates*, SJCE 1-2 (Dec. 1, 2021), available at <https://www.sanjoseca.gov/home/showpublisheddocument/80600/637752673325570000>.

²⁹ See D.19-06-023 at 11, Ordering Paragraph 1, available at <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M307/K595/307595168.PDF>.

³⁰ Carbon neutrality means having net zero GHG emissions in a given year.

~~³¹ The Council memo and adopted resolution can be found at: -~~

³² For more detail on purchasing policies, see *Purchasing*, City of San José, available ~~Purchasing policies can be found~~ at: <https://www.sanjoseca.gov/your-government/departments/finance/purchasing>.

RESPONSIVENESS TO REGIONAL POLICIES

In addition to local policies, SJCE reviews regional policies that could impact RPS procurement. These include county and regional climate action plans, ~~and~~ regional transportation planning, and air quality management district rules and initiatives.³³ For example, SJCE monitors local, regional and state building decarbonization and transportation electrification policies and program development. State and local, ~~as both~~ building and vehicle electrification trends are ~~is~~ expected to significantly increase SJCE electric load in the coming decades:

~~SJCE requires adherence to local~~ and will impact the City of San José's Carbon Neutral by 2030 goals.

SJCE's PPAs ~~regional ordinances and land use plans as part of its contracts. SJCE power purchase agreements~~ require counterparties to adhere to all applicable local/regional land use regulations and permitting processes. As part of ~~During~~ its ~~most recent~~ long-term renewable solicitation evaluation process, SJCE seeks to avoid negative impacts to important lands, species, and waters, and prioritize projects that are ~~with Peninsula Clean Energy~~, SJCE considered multi-benefit renewable energy projects located ~~project location and shapefiles~~ in areas zoned ~~relation to plans and geographic overlays such as the Desert Renewable Energy Conservation Plan, the San Joaquin Valley Least Conflict Assessment, the West Mojave Assessment~~ for renewable energy development. ~~Least Conflict Solar Energy, the CA Department of Fish and Game's Renewable Energy Transmission Initiative and the Protected Areas Database of the United States, to name a few.~~

IV.B.1. Long-term Procurement

LSEs are required to meet 65 percent of energy procurement towards the State RPS requirements from contracts with term lengths of 10 years or more.³⁴ ~~As SJCE has signed four PPAs as~~ detailed in Appendix D, SJCE signed five PPAs to ensure SJCE meets the 65 percent long-term requirement while building a staggered portfolio with contracts of different lengths and structures to maximize diversity. These contracts include more expected renewable

³³ SJCE has reviewed Regional Climate Action Plans such as the Santa Clara County Climate Action Plan.

³⁴ See Cal. Pub. Util. Code § 399.13(b); D.17-06-026 at 49, *available at* <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M191/K530/191530416.PDF>.

generation than SJCE needs to meet State RPS requirements to provide a buffer for potential project delays or failures.

On December 16, 2021, the Clines Corners wind project achieved its commercial online date (“COD”) ahead of schedule. SJCE has a 225 MW, fifteen-year agreement with Clines Corners Wind Farm LLC for wind power delivered from New Mexico for this project. On December 31, 2021, SJCE’s Edwards IV project achieved its COD on schedule. SJCE has a 62 MW, twelve-year agreement with Edwards Solar IV, LLC for solar power delivered from Kern County, California. This agreement has an innovative guaranteed delivery profile of 16 hours per day, Hours Ending 07 to 22. Edwards Solar IV, LLC can offer this product in part by installing and managing storage systems at the solar facility.

On August 6, 2019, SJCE signed a twenty-year PPA with EDPR for a 100 MW solar plus 10 MW of storage Sonrisa project located in Fresno County, California with EDPR with a guaranteed in-service date of December 31, 2022. On December 19, 2019, SJCE signed a fifteen-year PPA for the 100 MW solar ‘Edwards Solar V’ project with Terra-Gen with a guaranteed in-service date of December 31, 2022. Due to permitting delays, EDPR and SJCE agreed on an assignment of the PPA for the development of Scarlet,’ also located in Fresno County, California that will provide the same MW of solar and storage as Sonrisa. The Scarlet project This project is currently facing construction permitting delays resulting in a new in-service date of located in Kern County. On April 1, 2023. SJCE has accounted for this delay in its assessment of SJCE RPS compliance in this Draft 2022 RPS Procurement Plan.

On December 19, 2019~~22, 2020~~, SJCE signed a ~~fifteen~~twelve-year PPA with Edwards Solar V, LLC for a 100~~for 62~~ MW of the solar ‘Edwards Solar V~~IV~~’ project in with a guaranteed in-service date of December 31, 2021. This agreement has a guaranteed delivery profile of 16 hours per day, Hours Ending 07 to 22. The project is also located in Kern County, California. On August 31, 2020, SJCE signed a fifteen-year PPA for 225 MW of the New Mexico wind ‘Clines Corners’ project with Pattern Energy with a guaranteed in-service date of December 31, 2022. This project will not be built. SJCE is negotiating the terms to contract for replacement resources with the developer. Pending the conclusion of these negotiations, SJCE maintained the Edwards V solar power output in its analysis for this Draft 2022 RPS Procurement Plan~~2021~~.

On October 15, 2020, ~~These contracts were selected to ensure~~ SJCE and six other CCAs jointly issued an RFO entitled ‘Joint Long Duration Storage Request for Offers’ via CC Power

seeking offers for long-duration storage (8 hours or longer) that allowed for pairing with renewable resources. From this solicitation, SJCE has entered into two agreements for long-duration storage from 8-hour lithium-ion batteries: the LS Power's Tumbleweed project in Kern County with a COD of June 2026 and Goal Line's Onward project in Escondido with a COD of June 2025. SJCE's share of these projects are 15.37 MW and 12.11 MW, respectively.

On October 25, 2021, SJCE joined eight CCAs to issue an RFO via CC Power seeking ~~could meet the 65 percent~~ long-term agreements for firm, clean resources (geothermal or biomass). This effort resulted in two signed agreements between CC Power and developers that are still subject to ratification by the individual participating CCA boards: one with Ormat Nevada Inc. for a ~~RPS requirement while building a staggered~~ portfolio of geothermal resources located in Nevada and California, and a second with Fish Lake Geothermal LLC for a small geothermal project located in Nevada. If approved, SJCE's expected share of these agreements will be 24.5 MW and 2.26 MW, respectively.

On February 17, 2022, SJCE and EBCE jointly issued an RFO seeking long-term agreements for renewables, renewables paired with storage, and standalone storage in order ~~with contracts of different lengths and structures to maximize diversity. These agreements provide for SJCE to meet the~~ Mid-Term Reliability requirements. SJCE and EBCE have shortlisted a number of projects and are in active negotiations.

On May 8, 2022, SJCE signed a fifteen-year PPA with West Tambo Clean Power II LLC, for the 1.736 MW solar West Tambo Clean Power project in Merced County, California with a guaranteed in-service date of April 30, 2023. SJCE plans to use this contract to fulfill its capacity obligation in the Disadvantaged Community Green Tariff ("DAC-GT") program. This contract is pending CPUC approval,³⁵ and SJCE will provide an update on its status in the Final 2022 RPS Procurement Plan.

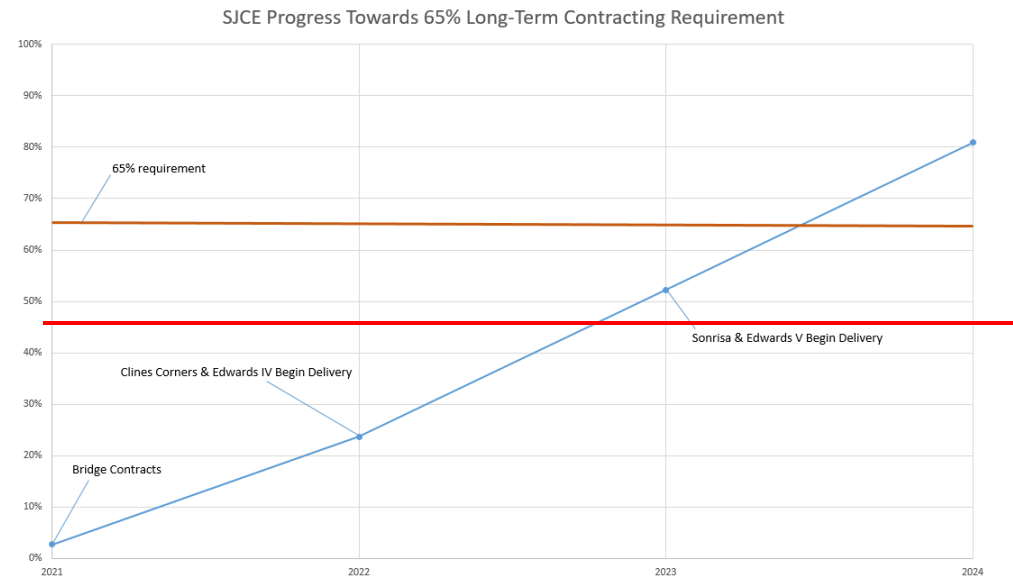
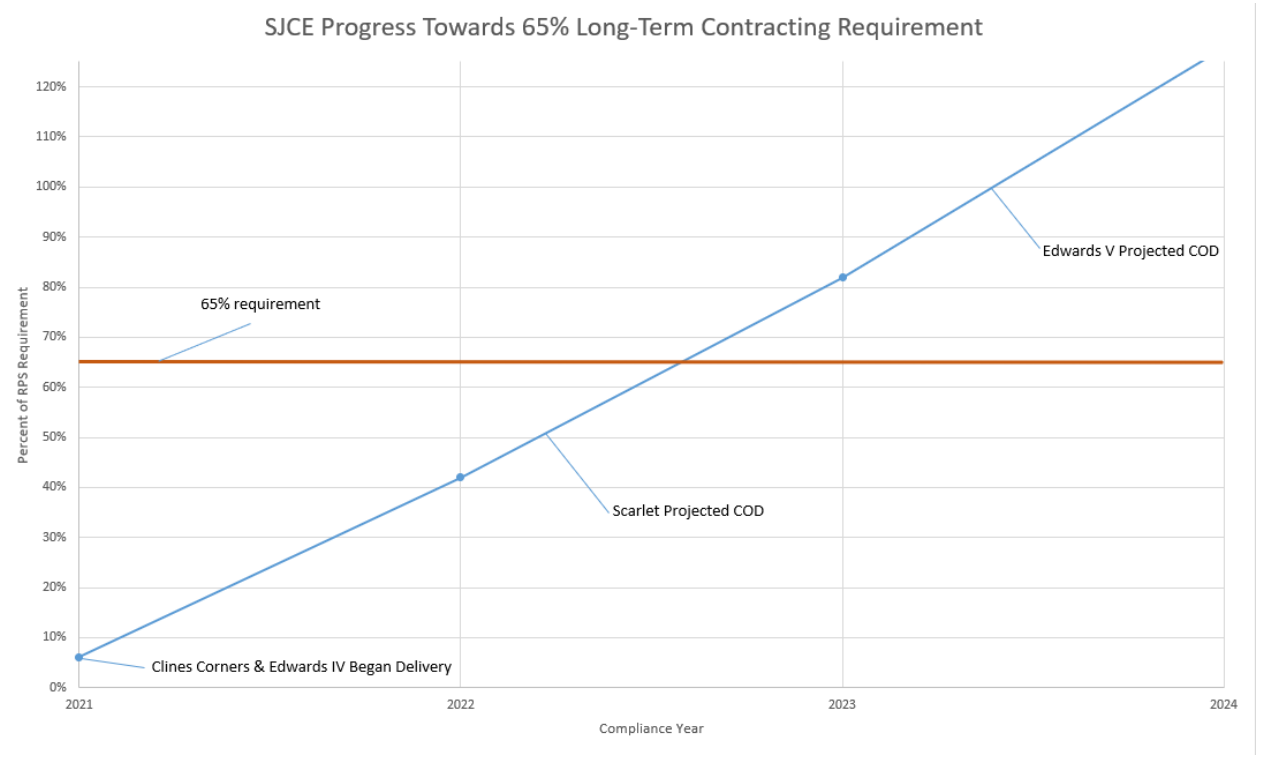
~~65 percent long-term procurement requirement in the 2021-2024 compliance period.~~

Figure 1 demonstrates SJCE's long-term contracting timeline and progress towards the long-term

³⁵ Resolution No. E-5124, Ordering Paragraph 8 (stating that CCAs shall submit all executed PPAs used toward its DAC-GT/CSGT program obligations via a Tier 2 Advice letter for approval), *available at* <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M378/K421/378421442.PDF>.

contracting requirement through the 2021-2024 compliance period and beyond. [We have updated this figure to include anticipated project delays.](#)

Figure 1: SJCE Progress Towards 65% Long-Term Contracting Requirement



SJCE continues to track the development and commercialization of new technologies such as renewable hydrogen or renewable fuels, flow batteries, stacked blocks, and offshore wind, among others.

IV.C. Portfolio Diversity and Reliability

PORTFOLIO DIVERSITY

SJCE is committed to diversifying its ~~procuring a diverse~~ portfolio of resources to mitigate risks and promote grid reliability. SJCE has entered long-term PPAs for ~~procured five~~ four different projects, each with diverse technologies and characteristics, including hybrid battery storage in conjunction with solar, ~~an~~ out-of-state wind resource, ~~and a~~ guaranteed on-peak delivery ~~profile~~ solar and long-duration storage. SJCE continues to evaluate opportunities for renewables, including firm clean resources such as geothermal and biogas, renewables with storage, agreement. ~~SJCE has also actively explored~~ standalone storage, natural gas battery storage hybridized with battery storage or with the capability to burn green hydrogen ~~natural gas~~, and longer duration energy storage. In November 2019, SJCE led a RFI ~~Request for Information~~ on battery storage that was shared with five other LSEs. SJCE received a ~~A~~ robust response of seventeen submittals covering numerous technologies. The results of the RFI informs SJCE's ~~was received, which has informed~~ ongoing procurement, ~~research,~~ and planning efforts. In June 2020, SJCE joined a large cohort of CCAs to issue a joint RFI³⁶ on long-duration storage (eight hours or longer) to prepare for expected needs in the 2026 timeframe. SJCE has entered into two long-term long duration storage agreements as a result ~~On October 15, 2020, SJCE joined seven other CCAs to issue a joint RFO³⁷ for long duration storage to 'cost-effectively enhance renewable energy portfolios and aid in achieving California's aggressive greenhouse gas reduction targets.'~~ As of this effort as detailed in Section IV.B.1 ~~filing, offers are being negotiated by the Joint Powers Authority, CC Power. Council authorized SJCE to join CC Power on January 5, 2021. Primary drivers for forming CC Power are to increase the purchasing power of CCAs and to streamline negotiations where one agreement for a larger project could be allocated across multiple CCAs. SJCE continues to track the development and commercialization of new~~

³⁶ ~~RFI for Long Duration Storage, available at: - ;~~

³⁷ ~~Joint Long Duration Storage Request for Offers, available at - ;~~

~~technologies such as hydrogen or renewable fuels, flow batteries, stacked blocks, offshore wind and many others.~~

EVALUATION OF PROJECTS

In 2019, ~~in order to evaluate and select long-term PPA offers as a part of a solicitation,~~ SJCE retained Energy and Environmental Economics, Inc. (“E3”) to evaluate and quantify the ~~undertake a quantitative evaluation of value of that considered~~ SJCE’s load, the generation profile of the potential resources, and their potential resource adequacy (“RA”) value considering ~~in light of~~ their location, and curtailment risk as part of SJCE long-term PPA solicitations. In 2019, SJCE also. ~~In addition, SJCE~~ retained Flynn Resource Consultants to review historic pNode prices and projected transmission system changes to add to the PPA analysis. In 2020 ~~Later~~, the SJCE/PCE joint RFO discussed in Section IV.A used Ascend Analytics to complete PPA ~~similar~~ offer evaluations using quantitative stochastic analysis, this time incorporating more robust analysis of ~~on~~ battery storage, ~~a now predominant technology~~ paired with solar. In the current joint RFO with EBCE, as discussed in Section IV.B.1, the CCAs are relying on in-house quantitative stochastic analysis. This RFO allows for numerous product types including standalone storage, storage paired with renewables, and standalone renewables. Allowing numerous products under one RFO casts a wide net and can help meet SJCE procurement and compliance needs across several programs including RPS and reliability requirements.

The quantitative stochastic analysis considers the delivery profiles of different types of resources, and their basis risk. SJCE’s ~~SJCE’s most recent~~ project scoring rubric provides additional points for technological and project feasibility, developer financial strength and experience, environmental and disadvantaged community impacts, and local and small businesses status. In addition ~~These combined analyses evaluate the diverse generation profiles and locational attributes of different kinds of renewable resources, considers likelihood of timely and successful development and operation, and rewards local and small developers. In addition to this quantitative analysis,~~ SJCE has applied a more qualitative review as it proceeds with procurement to ensure that its portfolio includes an appropriate level of diversity in terms of technology, location, length of contract, and counterparties and retains room to benefit from technological innovation and cost reductions.

~~SJCE also tracks and re-evaluates projects for renewable integration issues and concerns. As new and emerging technologies evolve and are deployed on the grid, new issues arise and are~~

~~assessed for impacts to projects and broader portfolio performance. In the past year, an issue related to Aggregate Capability Constraint for co-located resources was identified by stakeholders that may have implications for in-development resources. CAISO is in the process of mitigating the issue through proposed tariff changes.~~

In 2021, SJCE procured an Energy Trading Risk Management (“ETRM”) model. The ETRM will allow SJCE to undertake more frequent and sophisticated in-house analyses of its portfolio. SJCE has invested considerable staff time in learning to use the model and expects to use the model increasingly to identify optimal procurement alternatives, assess RFP responses, and double-check consultant IRP modeling results.

SJCE also uses the State’s IRP planning and modeling process as an important tool to identify least-cost alternatives to meet State policy goals. ~~2020 IRP~~

The 2020 IRP provided ~~insights~~additional insight into the respective benefits and relative risks of different energy technologies, and SJCE utilized its 2020 modeling results to inform RFPs and resource selection. To ~~intends to~~ consider the suitability of emerging technologies~~outcome of the 2020 IRP analysis in undertaking subsequent procurement. As noted above, SJCE’s 2020 IRP filed with the Commission consisted of two portfolios:~~

- ~~• the 46 MMT Portfolio~~
- ~~• the 38 MMT Portfolio~~

~~The more aggressive 38 MMT Portfolio required an additional 100 MW of battery storage before 2024, with renewable energy additions selected for~~ its portfolio~~later years.~~

~~In addition to the two cases submitted to the CPUC, SJCE also modeled the 30 MMT Portfolio. While this was not required by the CPUC, SJCE sought to understand the cost of a portfolio with more aggressive environmental targets. SJCE’s procurement is informed by the 30 MMT Portfolio.~~

~~In the IRP proceeding R. 20-05-003, the CPUC recently released Decision 21-06-035 requiring procurement to address mid-term reliability which mandates significant additional procurement of both renewables and storage. If SJCE were to procure to the 30 MMT Portfolio, SJCE would meet and exceed the amount of procurement mandated in the proposed decision, but with differing technology types. In this RPS Procurement Plan, SJCE~~ has included emerging technologies like offshore~~substituted procurement mandated in the D. 21-06-035 for~~

~~procurement identified in the 30 MMT Portfolio and retained any remaining procurement in the 30 MMT Portfolio. This plan provides for the following additions by 2030:~~

- ~~• 350 MW battery storage~~
- ~~• 475 MW solar PV~~
- ~~• 100 MW wind~~ and green hydrogen as candidate resources in its 2022 IRP modeling.
- ~~• 21.5 MW geothermal or biomass~~

~~On June 15, 2021, SJCE obtained authorization from Council to undertake additional procurement. This authorization will suffice to meet the requirements of D. 21-06-035 and additional procurement required by the 30 MMT Portfolio. SJCE will undertake actual procurement as appropriate in light of state law, the results of competitive solicitations, and further direction from Council.~~

RELIABILITY

In procuring to meet RPS requirements, SJCE ~~SJCE is also~~ considers ~~committed to meeting its obligations for~~ RA and reliability obligations. In ~~—In 2019, SJCE entered into a three-year agreement for RA with Calpine, in addition to its five long-term PPAs and the two CC Power agreements, , SJCE has entered numerous short-term~~ other contracts for RA ~~required to~~ meet its immediate RA obligations. ~~In 2020, SJCE entered into a seven-year RA agreement with Calpine.~~ In 2020, SJCE entered into mid- to long-term RA agreements (seven and a twelve years)-year RA agreement with natural gas and ~~Edwards Solar IV, LLC for~~ battery storage resources. Additionally, in 2021 and 2022 SJCE entered into medium-term RA agreements (through 2025) for resources that are available/dispatchable in all 24 hours of the day. In June 2022, SJCE launched an RFO seeking RA with dispatchable energy from resources with terms up to 15 years. Bids were received on June 15, 2022, and SJCE is currently evaluating the bids. If any of these offers are attractive it, SJCE will shortlist offers and negotiate contracts over the summer.

~~—~~ SJCE has a load curve that largely aligns with that of other LSEs in the Bay Area, driven both by weather, air conditioning demand and the composition of its customer base. With peak demand in the summer and generally in the late afternoon and evening hours, SJCE must build a supply portfolio that cost-effectively meets load at all times, including more costly evening hours. SJCE intends to meet its energy and renewable needs through a combination of

resources along with the RA resources needed to support grid reliability. As an LSE participating in the power markets of the California Independent System Operator (“CAISO”), SJCE’s imbalances are settled in the CAISO’s settlement markets. In addition, SJCE seeks to reduce its risk of negative prices through a combination of attention to the generation profile of resources it contracts with, exploring and pursuing opportunities for flexible resources, and contractual arrangements that either provide for guaranteed delivery profiles and/or facilitate greater control over resource operation~~resources’ operations~~, including economic curtailment when and where it is cost-effective.

SJCE expects load growth in the coming years due to building and transportation electrification. As such, assumptions for increased electrification are incorporated into SJCE’s load forecasting process. The CPUC and CAISO use this load~~This forecast is used~~ to define SJCE reliability requirements.~~SJCE also intends to use the CEC IEPR demand forecast case that includes high additional achievable electrification in its upcoming 2022 IRP modeling.~~

SJCE is monitoring the stakeholder processes in both CAISO and CPUC proceedings that address issues related to renewables integration and system reliability. SJCE intends to adjust its procurement activity to mitigate potential future cost exposure and develop a portfolio that aligns with both State and the City of San José’s renewable objectives and the reliability needs of the power system. Further discussion of reliability takes place in Section VII.

IV.D. Lessons Learned

In over~~The following are some key lessons learned during SJCE’s~~ three years of operations, SJCE has learned the following key lessons related to RPS resource planning and :

- ~~Continue conducting long-term~~ procurement that help with compliance: ~~to achieve RPS goals.~~
- Diversify contract duration~~lengths~~ to balance the near-term cost-benefits of long - term RPS contracting with the risk~~risks~~ of over procurement, and to~~procuring due to potential future load changes and~~ balance the risk that prices in the future may be more attractive or more expensive.
- ~~Monitor load carefully to avoid over or under procurement~~ but create a buffer .
- ~~Explore opportunities to~~ manage risk~~engage customers as partners with a stake in case of~~~~and responsibilities as to~~ long-term project delay or failure~~commitments.~~

- Diversify project locations and technology types ~~technologies~~ to reduce the risk of disruptions resulting from problems associated with particular locations or technologies and to reduce the curtailment and negative price risk at a certain interconnection point.
- Research and evaluate opportunities for new and emerging renewable and storage technologies.
- To the extent possible, diversify counterparties in order to minimize concentration risk. ~~(Unfortunately, due to load migration, PG&E and SCE control a large volume of existing resources and it is difficult to avoid significant purchases from these financially unstable counterparties.)~~
- ~~Expand list of potential suppliers and streamline transaction costs by entering into form enabling agreements such as the Edison Electric Institute Master Agreement.~~
- Partner with other CCAs and LSEs on procurement of RA and long-term renewable energy PPAs to achieve efficiencies, ~~and~~ contract with large projects that a single CCA could not offtake on their own and diversify risk by taking small shares in more projects.

In addition to the key lessons above, SJCE is also incorporating lessons learned from current market disruptions from the pandemic, global supply chain delays, and more recently, legal questions associated with solar panel tariff compliance. While the concerns with the tariff have been addressed in the near term, supply chain issues remain relevant. The impact of these market disruptions has coincided with accelerated CPUC procurement mandates, exacerbating procurement challenges. A disciplined focus on containing costs is critical in this challenging environment. Approaches should include:

- Hold renewable providers to their contractual obligations but constructively seek opportunities for win-win amendments that address the challenges experienced by developers without eroding contract value.
- Increase development security provisions, evaluate additional contractual remedies and insist on realistic contract in-service dates.
- Carefully monitor project development and have early, regular and meaningful discussions with project developers about project status.

- Continue to advocate for reasonably timed government mandates to limit exacerbated market power for generation projects that are already in development.

Interconnection issues also remain challenging as the State's and local climate goals continue to accelerate new project development. To address this challenge, it is important to:

- Carefully assess the interconnection status of bidders in RFP responses.
- Continue to work with the CAISO to relieve interconnection bottlenecks and inform parties of project development and procurement objectives.
- Monitor project development and be open to alternatives if projects in one location become infeasible as the interconnection process continues.

Additional energy and RA value may be available from out-of-state resources, but their viability is dependent on adequate transmission to California, including timely transmission upgrades. Moreover, the value of out-of-state resources depends on obtaining sufficient, reliable, and cost-effective import capability. To address these challenges, it is important to:

- Carefully assess the transmission requirements of any out-of-state project bid into a solicitation.
- Monitor project development, including the status of necessary transmission upgrades.
- Participate in CAISO processes to improve import capability and to obtain necessary allocations of import capability.

Advocate for better coordination between CPUC and CAISO on Maximum Import Capability ("MIC") enhancements.

V. Project Development Status Update

As described in Section IV.B above, SJCE's current and planned procurement is sufficient to meet both the applicable State RPS procurement requirements as well as support the State's~~state's~~ GHG reduction targets. SJCE has attached the Project Development Status Update Report as Appendix D.

SJCE has entered ~~three~~into the following contracts, which are not yet online:

- Scarlet: PPA with counterparty RE Scarlet~~EDPR-CA Solar Park VI~~ LLC (formerly EDPR) with a 20-year delivery period. This is a 100 MW ~~of~~ solar facility~~facilities~~ with 10 MW of lithium-ion battery energy storage in Fresno County, California. It is~~are~~ under development with an in-service date of April 1, 2023. The developer~~and was expected to~~

~~be operational by December 31, 2022. Pre-Construction phase. This project~~ is addressing the following challenges:

1. CAISO unexpectedly withdrew the previous interconnection approval for storage for EDPR, which is constructing the Sonrisa facility. The Parties agreed to assign the PPA to RE Scarlet LLC, another subsidiary of EDPR, which is developing an adjacent project (Scarlet) that has similar characteristics to the original Sonrisa facility, including storage, and that is further along in the development process.~~The previous approval for storage was unexpectedly withdrawn by CAISO.~~
2. Transmission network~~Network~~ upgrades required for Full Capacity Deliverability Status (“FCDS”) are behind schedule, but the project is projected to receive 100% interim deliverability until FCDS is achieved in 2026~~are delayed by PG&E.~~
3. The project is facing permitting challenges and will ~~likely~~ be delayed until April 1, 2023 (90 days from original in-service date of December 31, 2022).

These issues could affect RPS volumes but not enough to impact ~~SJCE’s RPS~~ compliance given coverage from other projects. ~~Resource Adequacy value may also be affected in the short term. SJCE is actively working with the developer to address these issues and is optimistic that a viable solution is available to mitigate the delay impacts. SJCE will provide further updates about this project in subsequent RPS plans.~~

- Edwards V: PPA with counterparty Edwards Solar V, LLC with a ~~(15-year delivery period. This is a)~~ 100 MW ~~of solar facility~~facilities in Kern County, California. It was ~~are~~ under development with an in-service date of ~~and expected to be operational by~~ December 31, 2022. Pre-Construction phase. SJCE has recently learned that Edwards V faced insurmountable development challenges and will not be built. SJCE is currently working with the developer to seek alternatives that preserve the value of the contract and will provide updates in the 2022 IRP if available.~~this project faces issues.~~ SJCE has enough coverage to meet the 65% long-term contract rule without this project and will provide further updates in subsequent RPS Procurement plans.
- ~~West Tambo Clean: PPA~~Edwards Solar IV, LLC (12-year delivery period): 62 MW of ~~solar facilities (firmed~~ with counterparty West Tambo Clean Power II LLC with a storage ~~to daily Hour Ending 07-22 delivery) in Kern County that achieved commercial on-line~~

~~date on December 31, 2021. Post-construction phase. The developer built the gen-tie and new delivery point, 'EDWARD_7_N001' and is successfully delivering energy to the grid.~~

- ~~• Clines Corners Wind Farm LLC (15-year delivery period): 225 MW of wind facilities in Torrance and Guadalupe Counties, New Mexico, that achieved commercial on-line date on December 16, 2021. Post-construction phase. This is a 1.736 MW solar facility in Merced County, project relies on the new Western Spirit Transmission Line, now complete, owned and operated by Public Service Company of New Mexico. The project delivers at two separate delivery points into California. It is under development with an in-service date of April 30, 2023. This contract is still pending CPUC-approval.³⁸ SJCE will provide further updates on its status in its Final 2022 RPS Procurement Plan. offering some diversity on market pricing and potential transmission outages.~~

VI. Potential Compliance Delays

SJCE does not currently anticipate ~~any~~ compliance delays for the upcoming RPS Procurement Plan compliance period from, ~~which includes calendar years~~ 2021 through 2024. As referenced in Sections IV and V, SJCE ~~already~~ has five~~four~~ long-term renewable energy PPAs in place, two of which are already online and delivering energy and one that will come online April 30, 2023. While one of SJCE's ~~SJCE receives progress reports from developers for the two~~ outstanding projects (Scarlett) is delayed, SJCE consented to the assignment of the contract to replace the facility with a new resource that~~be constructed and~~ has an~~contractual~~ protections in-service date of April 1, 2023, which is 90 days place to ensure development, and later~~than originally expected~~. Despite this delay, SJCE's renewable energy procurement will meet the 2022 State RPS requirement of 38.5 percent. For the project that will not be built (Edwards V),~~performance, stays on track~~. SJCE is working with the developer on an alternate solution that will preserve the value of the agreement. Additionally, SJCE is currently reviewing offers submitted~~considering alternative strategies to the joint~~ address potential delays with the two outstanding projects and intends to issue a further solicitation with EBCE issued in March~~the first quarter~~ of 2022.

³⁸ Id.

~~SJCE will continue to monitor developments and will consider issuing further solicitations as additional procurement becomes necessary to ensure timely compliance. While COVID-19 related impacts were unknown at the time of signing the first two of SJCE's PPAs, language related to risks specific to COVID-19 was incorporated into the third and fourth and will also be included in any future contracts as long as it is appropriate. Even where there is no explicit COVID-19 contract language, SJCE keeps in regular contact with the developers of its PPA projects and has specifically asked whether COVID-19 is affecting progress in any way. As of this report, no developer has reported (formally or informally) any such issues. SJCE will remain vigilant in tracking this important issue.~~

SJCE is aware of issues that are affecting the energy industry that could lead to compliance delays if new projects under development cannot or do not get built on time. These include supply chain disruptions, increasing shipping costs, labor shortages, other pandemic impacts (e.g., Covid related lockdowns in China), inflation, and the U.S. Department of Commerce anti-circumvention trade investigation (which, fortunately, has been resolved for the next two years). SJCE will continue to closely track these market conditions as they relate to SJCE procurement and compliance and seek opportunities to address these challenges cooperatively with its developer counterparties in a manner that preserves contract value for its customers and timely compliance.~~PG&E delays on reconductoring projects (i.e. network upgrades) supporting Full Capacity Deliverability Status³⁹ could affect the ability of SJCE's EDPR-CA Solar Park PPA to provide RA but this would not impact RPS compliance. SJCE is working with EDPR and others to highlight and address these concerns in hopes of minimizing delays and ensuring maximum RA value.~~

VII. Risk Assessment

Pursuant to § 399.13(a)(6)(F), SJCE assesses the risk that a renewable energy resource will face delays or failures before achieving online status, will not operate as planned, or have inherent variability when delivering energy. SJCE evaluates and incorporates the potential impacts of these risks on long-term contract supply in portfolio planning and risk management activities.

³⁹~~An April 15, 2021 presentation by PG&E is available at: -~~

To mitigate~~mitigates~~ the risk that a project will not deliver as contemplated under the contract, SJCE utilizes~~through~~ contractual incentives, diligence conducted before and during contract negotiation, ~~and~~ diligence during contract management pre- and post-commercial online date, and timely negotiations if problems arise. SJCE also incorporates provisions into. ~~SJCE includes in~~ its long-term PPAs to minimize risk of delayed project performance. These include construction and performance standards, progress reporting requirements, delay damages, and termination rights.

~~as well as buyer rights to mitigate project non-performance during the development and operational phases of the contract term.~~ In addition, SJCE engages in~~includes in its current evaluation of potential counterparties and projects~~ a review of project interconnection status, site control, permits status, project team experience, and developer financial strength when evaluating potential counterparties and project proposals. Table 3 lists the experienced developers that SJCE has entered ~~into~~ long-term PPA agreements with.

**Table 3: SJCE's~~Developers SJCE has Entered into~~ Long-term Power Purchase Agreement
Developers~~PPA Agreements With~~**

Developer	Portfolio	Parent	Notable <u>SJCE Counterparts</u>Counterparties
EDP Renewables	11 GW worldwide	Energias de Portugal	• East Bay Community Energy • Redwood Coast Energy Authority • MCE Clean Energy
Terra-Gen	3+ GW, half of all wind in CA	Energy Capital Partners and First State Investments	• MCE Clean Energy • Clean Power SF • East Bay Community Energy
Pattern Energy	10 GW worldwide	Canada Pension Plan Investment Board	• Southern California Public Power Authority • Sacramento Municipal Utility District • Investor-Owned Utilities

In addition to project development risk, SJCE addresses other risks described in the CPUC ACR, such as lower than expected generation, variable generation, and resource availability through an allocation of risks and responsibilities between itself and project developers/operators. Guaranteed minimum production levels and terms addressing reduced payment for excess energy production in contracts mitigate the risk that energy deliveries fall below or above projections due to poor forecasting.

Finally, in collaboration with the City~~by encouraging developers to face financial consequences of San José, SJCE overly conservative or overly optimistic production estimates.~~

~~At this time, SJCE anticipates relatively low risk of RPS non-compliance due to (1) identification of feasible projects with strong and experienced counterparties; (2) pursuing a portfolio of diverse technologies, locations, counterparties, and contract lengths; (3) active monitoring of projects during development phases; (4) buying smaller amounts from multiple projects through collaboration with other CCAs, and recently, CC Power, rather than larger single projects; and (5) standard renewable PPA terms that mitigate the potential for significant under or over production.~~

~~SJCE has~~ adopted an Energy Risk Management Policy and associated ~~regulations~~Regulations and formed a Risk Oversight Committee (“ROC”) made up of the Deputy City Manager, the Director of Community Energy, the Director of Finance, the City’s Risk Manager, the Budget Director, the Community Energy Department’s Deputy Director of Power Resources, and the Community Energy Department’s Division Manager of Administration and Finance to oversee and guide.~~The Policy and Regulations apply to SJCE and the ROC oversees SJCE procurement decisions.~~ Among other topics, the Risk Management Policy and Regulations provide for counterparty risk management, ~~balanced load,~~ minimum coverage requirements, diversification of the portfolio, concentration limits, and other risk controls. ~~The ROC meets regularly to review SJCE procurement strategy and progress and to provide expertise in risk avoidance.~~

COMPLIANCE RISK

At this time, SJCE anticipates compliance with the RPS 65% SJCE developed a model to assess viability risk levels of long-term contract requirement and assessed a low-medium risk of noncompliance. Factors that mitigate SJCE’s risk in meeting the long-term contracting requirement include (1) identification of feasible projects with strong and experienced counterparties; (2) pursuing a portfolio of diverse technologies, locations, counterparties, and contract lengths; (3) active monitoring of projects during development phases; (4) buying smaller amounts from multiple projects through collaboration with other CCAs, and recently, CC Power, rather than larger single projects; (5) over procuring for RPS compliance to create a buffer should long-term renewable projects be delayed or fail; (6) standard renewable PPA terms that mitigate the potential for significant under or over production; and (7) constructive but firm

negotiations with suppliers experiencing problems to seek to retain contract value. Given ongoing market disruptions including supply chain and interconnection challenges, SJCE will continue to monitor project progress and to work closely with its counterparties to seek mutually acceptable solutions to overcome development challenges.

SJCE has more alternatives to assure compliance with general RPS percentage targets for the 2021-2024 compliance period than the long-term contracting requirement. This is because SJCE closely tracks supply and demand volumes over time and can procure additional short-term REC contracts in the market if needed.

RISK MODELING AND RISK FACTORS

SJCE uses a deterministic model to assess risks associated with achieving State RPS requirements. To assess risks related to ~~in-development projects, SJCE considers~~ ~~were evaluated using~~ factors such as interconnection and permitting status, site control, financing, construction phase, developer ~~and engineering, procurement, and construction (“EPC”)~~ experience, transmission paths, and COD. Due to the recent global supply chain issues, SJCE has updated its risk assessment model to reflect a ~~Total project failure risk was below 2 percent for all four projects in development with~~ higher risk of project delays ~~rates for projects with further out online dates. The calculated portfolio risk was 1.5 percent. SJCE does not have any online projects~~ for near-term projects.

SJCE has limited operational data from online PPA projects to use for a historical assessment (since they came online at end of 2021). SJCE ~~but~~ modeled an online project failure rate ~~of 0.75 percent~~ using factors such as track record of counterparty contract termination, force majeure outages, and variances from forecast versus actual generation. These numbers are reflected in SJCE’s RNS Calculation in Appendix C.

~~Per the guidance of D.21-01-005, SJCE developed its risk assessment methodology for its 2020 Final RPS Plan and has applied a similar methodology in this 2021 Final RPS Plan. To develop this methodology, SJCE reviewed the risk assessment sections of other LSE draft RPS plans that the Commission identified as “best practices”. SJCE evaluated each of its PPAs pursuant to the following categories: interconnection status, permitting, site control, financing, construction status or progress, developer experience, engineering, procurement and construction experience, transmission, and contract milestone completion.~~

In the event of delivery shortages, contract provisions ~~would~~ offer industry standard compensation. However, shortages could affect the cost of RPS compliance, as SJCE would have to buy more short-term RECs. SJCE has developed ~~a~~ MMoP that incorporates the ~~forecasted~~ ~~calculated~~ failure rates into its risk adjusted portfolio. See Section IV.C for further discussion on how SJCE evaluates and mitigates risk through procurement of a diverse portfolio. See Section VIII for discussion of the role that ~~excess~~ ~~over~~-procurement plays in SJCE's risk assessment.

SYSTEM RELIABILITY

~~SJCE assesses the risk of retail sales uncertainty, including how SJCE may be impacted by Direct Access and load growth or declines, on an ongoing basis. SJCE also closely monitors customer opt-outs and now opt-downs. SJCE performed analysis on impact to load due to COVID-19. SJCE also models the impacts of increased electric vehicle penetration, building electrification, and recent changes to product offerings on SJCE's renewable demand and resultant RNS. In addition, in the context of preparing its 2020 IRP, SJCE undertook a stochastic portfolio risk analysis with its consultant.~~

SJCE considers the reliability of its portfolio and its impact on system reliability when entering ~~into~~ renewable energy commitments. Technology and geographic diversity of renewable resources are considered when making decisions about ~~the~~ supply portfolio. SJCE also considers the impacts that the declining RA values of some renewable resources may have on its long-term RA position. SJCE has entered into a solar project with a fixed delivery agreement, ~~and~~ an out-of-state wind agreement, ~~two~~ ~~and is evaluating both~~ long-duration storage agreements and is evaluating additional energy storage offers to ensure a balanced portfolio that contributes to both system reliability and RPS.

VIII. Renewable Net Short Calculation

SJCE has provided a quantitative assessment attached as Appendix C to support the qualitative descriptions provided in this Draft 2022 RPS Procurement Plan. To assess SJCE's RPS portfolio needs and risks and ultimately its RPS procurement net short, SJCE used a deterministic model updated with actual load ~~to assess its RPS portfolio risk~~ for 2021 and 2022 and the mid-case 2021 California Energy Commission's Integrated Energy Policy Report load forecast from 2023 through 2032. SJCE has not yet finalized how much of its available VAMO

allocation it will accept and will provide an update to its impact on SJCE's net short in the RNS template in August.

~~risk-adjusted RPS portfolio.~~ The RNS calculations ~~were~~^{are} performed using a combination of resource-specific variables that feed into the failure rate and other risks such as forecasting errors and market risk. As described in Section VII above, SJCE considers the risks of project failure for projects in development as well as the risk of over- or under-generation for projects in operation. In Appendix C, for projects that are online, we apply a forecast failure rate of 9.5 percent to reflect largely generation performance risks, and for projects in development or under construction, we utilize a forecast failure rate of 18.5 percent to account for additional risks in financing, interconnection, site control, and supply and to reflect current market inflation and supply chain disruptions.

~~Consistent with CPUC direction, rows 14 and of the RNS Calculator lists SJCE's Forecast Failure Rate calculated as set forth in Section VII. For projects that are online, the average annual portfolio risk is 1, which comprises 0.75 percent as the Forecast Failure Rate and 0.25 percent representing other risks not associated with any particular project as further described in Section VII. The Forecast Failure Rate varies by project and is evaluated based on the forecast rate of 1) contract failure; 2) equipment failure; and 3) expected energy delivery failure.~~

~~For projects that are in development, the average annual portfolio risk is 1.75 percent, representing a 1.5 percent Forecast Failure Rate plus 0.25 percent for other risks not specifically related to the project itself.~~

~~SJCE's RNS Calculator uses recently updated internal load forecasts for years 2021 and 2022 and the IEPR load forecast from 2023 through 2030.~~

IX. "Minimum Margin" of Procurement (~~"(MMoP)"~~)

To mitigate the risk that renewable projects under contract are delayed or terminated or do not perform as expected, SJCE implemented a MMoP above the minimum procurement level. As shown in Table 4 below, SJCE is building an electricity supply portfolio with short-term and long-term contracts that achieve City of San José requirements, and exceed State ~~and City~~ requirements, for increasing the RPS-eligible renewable energy content of its portfolio over time. SJCE has a VMoP that represents the difference between its internally adopted targets for

renewable energy for each year and the State's RPS requirement less the MMoP. Table 4 shows the margin of RPS ~~excess over~~-procurement based on the differential between the SB 100 and SJCE renewable energy procurement targets.

Table 4: State and Local Renewable Energy Requirements

RPS Content Goals	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
SB 100 RPS Requirement	35.75%	38.5%	41.3%	44.0%	46.7%	49.3%	52.0%	54.7%	57.3%	60.0%
SJCE RPS Procurement Targets	53.8%	54.1%	54.3%	59.1%	59.4%	59.7%	64.4%	64.7%	65.0%	70.0%
SJCE RPS MMoP	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%	1.75%
SJCE RPS VMoP	16.3%	13.9%	11.3%	13.3%	10.9%	8.6%	10.6%	8.2%	5.9%	8.3%

<u>RPS Content Goals</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>
<u>SB 100 RPS Requirement</u>	<u>38.5%</u>	<u>41.3%</u>	<u>44.0%</u>	<u>46.7%</u>	<u>49.3%</u>	<u>52.0%</u>	<u>54.7%</u>	<u>57.3%</u>	<u>60.0%</u>	<u>60.0%</u>	<u>60.0%</u>
<u>SJCE RPS Procurement Targets</u>	<u>60.4%</u>	<u>61.4%</u>	<u>63.1%</u>	<u>64.4%</u>	<u>65.8%</u>	<u>67.1%</u>	<u>68.5%</u>	<u>69.8%</u>	<u>71.1%</u>	<u>72.5%</u>	<u>73.8%</u>
<u>SJCE RPS MMoP</u>	<u>7.9%</u>	<u>11.4%</u>	<u>10.7%</u>	<u>10.0%</u>	<u>9.4%</u>	<u>8.9%</u>	<u>8.4%</u>	<u>7.9%</u>	<u>7.5%</u>	<u>7.4%</u>	<u>7.3%</u>
<u>SJCE RPS VMoP</u>	<u>13.9%</u>	<u>8.7%</u>	<u>8.4%</u>	<u>7.7%</u>	<u>7.0%</u>	<u>6.3%</u>	<u>5.4%</u>	<u>4.6%</u>	<u>3.7%</u>	<u>5.1%</u>	<u>6.5%</u>
<u>SJCE's Margin Over Procurement (MMoP + VMoP)</u>	<u>21.9%</u>	<u>20.1%</u>	<u>19.1%</u>	<u>17.8%</u>	<u>16.5%</u>	<u>15.1%</u>	<u>13.8%</u>	<u>12.5%</u>	<u>11.1%</u>	<u>12.5%</u>	<u>13.8%</u>

SJCE applied a Forecast Failure Rate of ~~18~~1.5 percent for RPS facilities in-development. ~~That failure rate is incorporated into SJCE's MMoP along with 0.25 percent for risk factors other than project failure such as market risk and forecasting risk as further described in Section VII.~~ SJCE plans to procure ~~a range of 11.4 to 7.3~~1.75 percent over its requirement from ~~2022~~2021 through ~~2032~~2030 as its MMoP to account for ~~development~~these various risks which vary by project. ~~based on the considerations in Section VIII.~~ After accounting for risks, SJCE has a significant VMoP, as detailed in Table 4 above.

SJCE's RPS-eligible renewable energy target ~~is 60 percent for 2022, and from the 2021 RPS plan increases linearly was 45 percent by 2020, increasing~~ to 70 percent by 2030. ~~Pending its IRP assessment, SJCE has assumed its RPS content will continue linearly thereafter. This assumption will be reviewed in SJCE's 2022 IRP.~~ SJCE will continue to evaluate the level of RPS resources SJCE plans to procure in excess of ~~State~~state RPS requirements, considering both

the risk-assessed MMoP and other policy developments, including the pathway to becoming carbon neutral.

IX.A. MMoP Methodology and Inputs

To adequately calculate~~SJCE considers its MMoP to be the~~ MMoP, procurement level above the RPS requirement to account for risk. SJCE conducted a deterministic risk analysis on its portfolio of resources. SJCE considered~~to ensure the current renewable energy procurement targets are sufficient to mitigate~~ risks of project failure, or project delay, and less than expected production for both online and in-development resources. This analysis produced SJCE's online and in-development forecast~~our failure rates~~rate, which were used to determine~~accounts for 1.5 percent of~~ SJCE's ~~1.75 percent~~ MMoP.

IX.B. MMoP Minimum Margin Scenarios

In calculating the proposed MMoP,~~SJCE plans to exceed the annual program renewable goals of 44 percent by December 31, 2024 and the increasing percentages over the 10-year planning horizon. SJCE also intends to exceed the requirement that 65 percent of RPS procurement in each compliance period starting in 2021 derive from long-term agreements.~~

SJCE assesses the risks associated with its contracted projects as described in Section VII and incorporates them into its MMoP sensitivity analyses. These include a project viability assessment based on factors including interconnection and permitting status, site control, financing, construction phase, developer ~~and EPC~~ experience, transmission paths, and COD.

SJCE is

~~Progress~~ on-track to exceed the annual State RPS requirement of 44 percent by December 31, 2024 and the total quantity requirement for the 2021-2024 compliance period. SJCE expects to meet and exceed the increasing percentages over the 10-year planning horizon. SJCE is also working to meet the requirement that 65 percent of RPS procurement come from long-term agreements in each compliance period starting in 2021-2024, as described ~~the in~~ Section IV.B.1 above ~~development projects is tracked through development progress updates from suppliers and regular check-ins with development team staff.~~

The MMoP and VMoP also consider forecasted growth of enrollment in TotalGreen, the 100% renewable content product, as well as GreenValue, the product that aligns with the SB 100 RPS required targets to offer customers a renewable product at a discounted rate.

X. Bid Solicitation Protocol

Pursuant to § 399.13(a)(6)(C), this section describes SJCE's bid solicitation requirements and practices. SJCE undertakes its procurement in accordance with Chapter 26.50 of San José's Municipal Code, its [Energy Risk Management Policy](#),⁴⁰ and the associated Energy Risk Management Regulations. These [documents](#) provide for competitive bidding processes. SJCE conducts solicitations for energy and related products by posting such solicitation notices and materials at www.sanjosecleanenergy.org/energy-procurement and sending solicitation notices to a list of interested counterparties including sellers that have asked to be notified. Specific information including product quantities, deliverability characteristics, term lengths, locational preferences, evaluation criteria, and other relevant solicitation terms and conditions are posted along with instructions for interested parties to submit responsive proposals.

Section IV.C. describes in more detail SJCE's evaluation of long-term renewable solicitations.

X.A. Solicitation Protocols for Renewables Sales

SJCE does not have immediate plans to issue a solicitation for sales of renewable energy projects.

X.B. Bid Selection Protocols

SJCE implements its own bid solicitation criteria when procuring and selling energy. The Least-Cost Best-Fit ("[LCBF](#)") methodologies approved by the [CPUC](#) ~~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 investor-owned utilities and the [CPUC](#) ~~Commission~~ does not have

⁴⁰~~Energy Risk Management Policy, May 1, 2017, available at :~~

jurisdiction over the solicitation protocols of CCAs. However, consistent with § 399.13(a)(9),⁴¹ as described in Section IV.C. above, SJCE does consider best-fit attributes that support a balanced mix of resources and help support reliability of the electrical grid.

D.14-11-042 created a renewable integration cost adder, ~~“RICA”~~, which has been implemented by other LSEs as a proxy cost adder for renewable project evaluation related to grid costs caused by renewable projects. ~~While~~ SJCE does not make use of this proxy. However, as an LSE subject to the tariff and business processes of the CAISO, in its evaluation of bid responses, SJCE considers prospective costs over the term of the project contract taking into account the specific location and operational characteristics of each project and includes a consideration of projected future power costs and prices in particular locations and the risk of curtailment. SJCE also requires project developers and operators to comply with CAISO rules, such as following CAISO dispatch instructions.

SJCE’s project evaluation process considers factors identified in D.11-04-030 (locational value of energy at the project delivery point). SJCE complies with D.12-11-016 (RA value) by ascribing value to ~~favoring~~ projects with ~~full capacity deliverability status (“FCDS”)~~, considering the RA capacity value in its evaluation rubric, and through monitoring trends in RA accounting rules for intermittent resources, including CPUC ~~Commission~~-determined Effective Load Carrying Capacity ~~“ELCC”~~ factors and hybrid resource counting methodology. SJCE does not impose transmission cost adders as the CPUC ~~Commission~~ addressed in D.12-11-016, as transmission costs directly necessitated by the project for project interconnection are the responsibility of the developer.

D.16-12-044, implementing the requirement of § 399.13(a)(8)(A) to give preference to renewable projects located in certain communities, is expressly only applicable to “electrical corporations” and is not mandatory for CCAs.⁴² However, SJCE evaluates projects on

⁴¹ 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.”).

⁴² 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.”).

compliance with environmental requirements and with prevailing wage laws and includes extra credit in its evaluation criteria for local and small businesses.

Moreover, the City of San José encompasses a very diverse group of residents and businesses including a large proportion of immigrants and disadvantaged communities. ~~("DACs")~~. SJCE is exploring initiatives to reduce impacts on its disadvantaged and other communities by:

- Administering a CPUC DAC-~~GT-Green-Tariff~~ program, which allows SJCE to solicit and procure energy from a new 1.7367 MW solar power plant in a disadvantaged community~~DAC~~ in PG&E territory. SJCE expects this project to come online in 2023.
- Exploring opportunities with the community to develop and target energy programs in a manner that maximizes benefits to the San José community, including targeting vehicle electrification and charging stations to reduce traffic emissions that disproportionately adversely impact disadvantaged communities.
- Exploring opportunities for non-fossil fuel powered~~clean~~ backup power at critical facilities, microgrids at new developments, and joint purchases~~opportunities for group buys~~ for solar plus storage for low- and moderate-income residents.

SJCE's solicitation information is available at the following website:

www.sanjosecleanenergy.org/energy-procurement.

X.C. ~~Least-Cost-Best-Fit~~LCBF Criteria

SJCE's ~~LCBF~~least-cost best-fit criteria aligns~~align~~ with statutory obligations mandated by Section 399.13(a)(9), as discussed above in Section IV.C and X.B. These include valuing projects considering their location and projected forward prices in particular locations, expected delivery profile, risk of congestion, and RA value. The projected forward prices in particular locations reflect renewable integration costs, and where appropriate, they include low or negative prices. Renewable integration costs are also considered by including consideration of curtailment risk. Further explanation of SJCE's evaluation criteria is contained in public solicitation materials available at www.sanjosecleanenergy.org/energy-procurement.

SJCE continues to refine its portfolio planning and project evaluation processes to prudently manage cost risk and bring the best value to its community and ratepayers under the direction of City Council.

XI. Safety Considerations

SJCE holds safety as a top priority ~~and although-~~ SJCE does not currently own, operate, or control generation facilities, ~~it incorporates provisions and standards in its~~ ~~at this time-~~ ~~SJCE currently~~ contracts ~~for RPS-eligible resources~~ with facility owners and power marketers to ~~procure renewable energy and relies on contract permitting requirements to~~ ensure safety. ~~For instance,~~ SJCE includes standard language in all PPAs requiring the seller to maintain a safe facility, including provisions that require notifying the buyer of safety issues and shutting down all or part of the facility in order to mitigate risk as necessary. SJCE's pro forma contract Section 6 addresses safe operations and maintenance of energy facilities. Specifically, SJCE requires facilities ~~to~~ comply with Prudent Operating Practice, per the definition below.

*“Prudent Operating Practice” means the practices, methods and standards of professional care, skill and diligence engaged in or approved by a significant portion of the electric power industry for facilities of similar size, type and design, that, in the exercise of reasonable judgment, in light of the facts known at the time, would have been expected to accomplish results consistent with Law, reliability, safety, environmental protection, applicable codes, and standards of economy and expedition. Prudent Operating Practices are not necessarily defined as the optimal standard practice method or act to the exclusion of others, but rather refer to a range of actions reasonable under the circumstances.*⁴³

SJCE standard contracts have a conditions precedent requirement stating that all applicable regulatory authorizations, approvals and permits, including those related to safety, for the operation of the ~~facility under agreement~~ ~~Facility~~ have been obtained prior to delivery from the lead agency in the region where a project is built. SJCE staff ~~collects~~ ~~collect~~ and ~~reviews~~ ~~review~~ these permit materials along with developer progress reports prior to and during construction.

XII. Consideration of Price Adjustment Mechanisms

⁴³ See, e.g., Renewables Power Purchase Agreement with Clines Corners Wind Farm LLC, available at: https://sanjosecleanenergy.org/wp-content/uploads/2021/02/Pattern.SJCE_PPA_PUBLIC.pdf

~~Pursuant to Consistent with~~ § 399.13(a)(6)(E), ~~LSEs must consider mechanisms for price adjustments with the costs of key components for eligible renewable energy resource projects with online dates more than 24 months after the date of contract execution.~~ SJCE will continue to evaluate incorporating price adjustments in contracts with online dates more than 24 months after the date of contract execution.

XIII. Curtailment Frequency, Forecasting, Costs

This Section responds to the questions presented in Section ~~6~~5.13 of the ACR⁴⁴ and describes SJCE's strategies and experience so far in managing SJCE's exposure to negative pricing events, overgeneration, and economic curtailment for SJCE'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

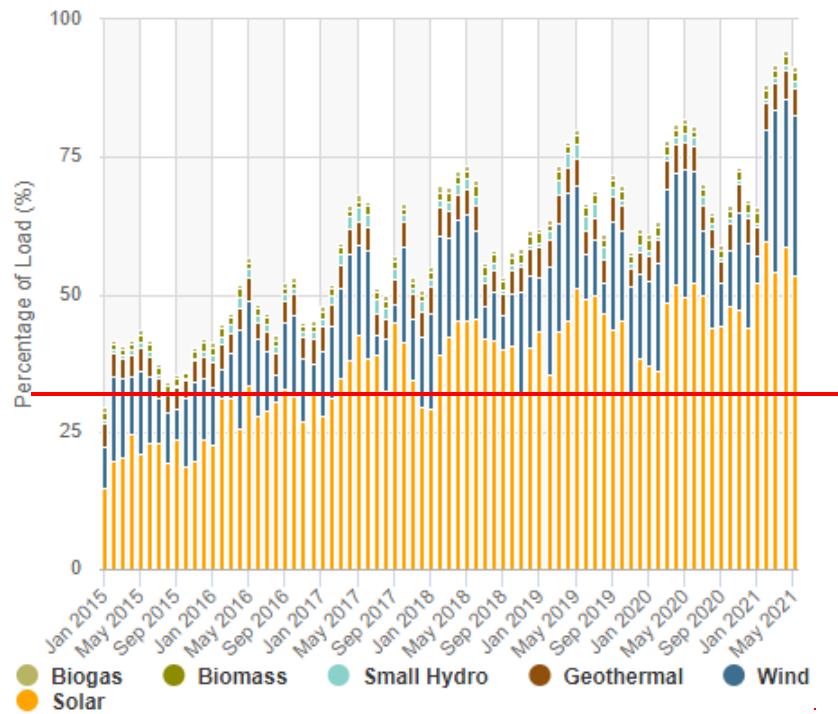
Due in large part to the rapid increase in the amount of wind and solar generating facilities that have been brought online throughout the western United States, the CAISO balancing authority area has experienced an increasing frequency and magnitude of curtailment and negative pricing events. As of ~~June 2022, CAISO~~~~the end of 2019, California~~ had over ~~1512,800 MW of solar, 9,400 MW of behind-the-meter solar, and 8005,900 MW of wind.~~⁴⁵ This increased capacity results in discrete periods where the majority of load in the CAISO is served by solar and wind resources. The monthly maximum load served by wind and solar in the CAISO has averaged ~~69.7~~~~64.4~~ percent over the past three years (~~April 2019~~~~May 2018~~ to ~~April 2022~~~~May 2021~~), and in April of ~~2022~~~~2021~~ the monthly maximum load exceeded ~~a record 92~~~~85~~ percent (see ~~Figure 2~~~~chart~~ below).⁴⁶

⁴⁴ ACR at ~~33, 28-30.~~

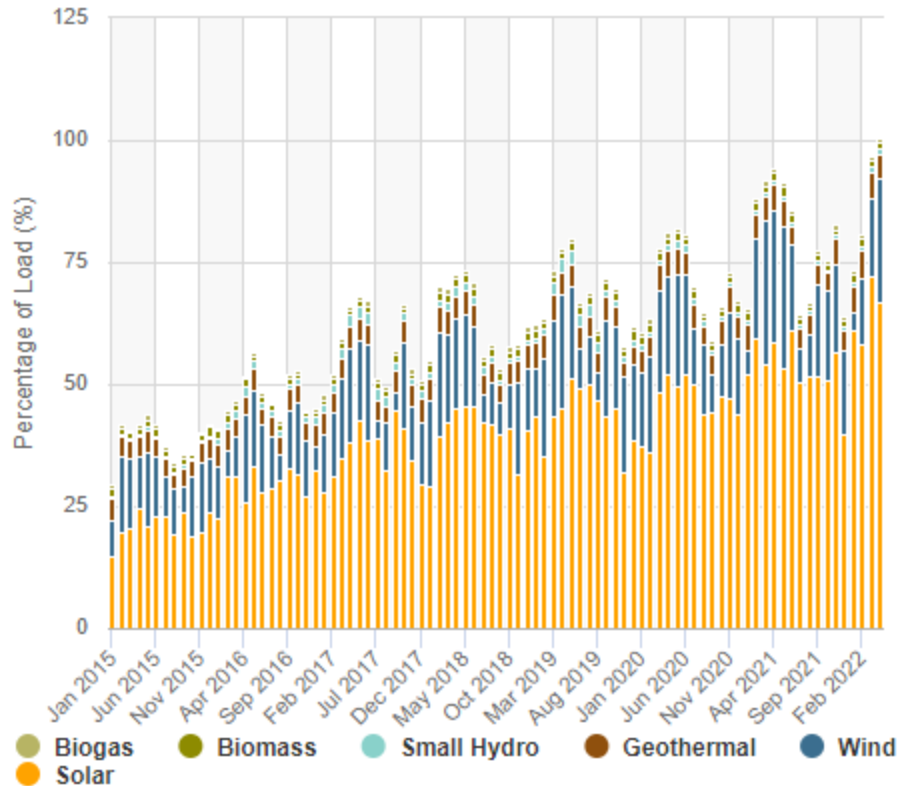
⁴⁵ ~~Going Green, CAISO~~ California Energy Commission, Renewable Energy Tracking Progress, Feb. 2020, at 6, available at https://www.energy.ca.gov/sites/default/files/2019-12/renewable_ada.pdf.

⁴⁶ ~~CAISO~~, Monthly Renewables Performance Report, ~~CAISO (Apr. 2022), May 2021~~, available at <http://www.caiso.com/Documents/MonthlyRenewablesPerformanceReport-May2021.html>

Figure 2. Monthly Maximum Percent of Load Served by Renewables⁴⁷



⁴⁷ *Id.*



Source: <http://www.caiso.com/Documents/MonthlyRenewablesPerformanceReport-May2021.html>

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, totaling 187,000 mega-watt hours~~ (“MWh”) in 2015 ~~to 1,504,840, 308,000 MWh in 2021.~~ 2016, 379,510 MWh in 2017, 461,043 MWh in 2018, 965,241 MWh in 2019, and 1,586,500 MWh in 2020.⁴⁸ As of ~~April 2022~~ May 31, 2021, the total curtailment of solar and wind year to date is ~~already 1,379,033~~ 62,270 MWh.⁴⁹ (see chart below).⁵⁰

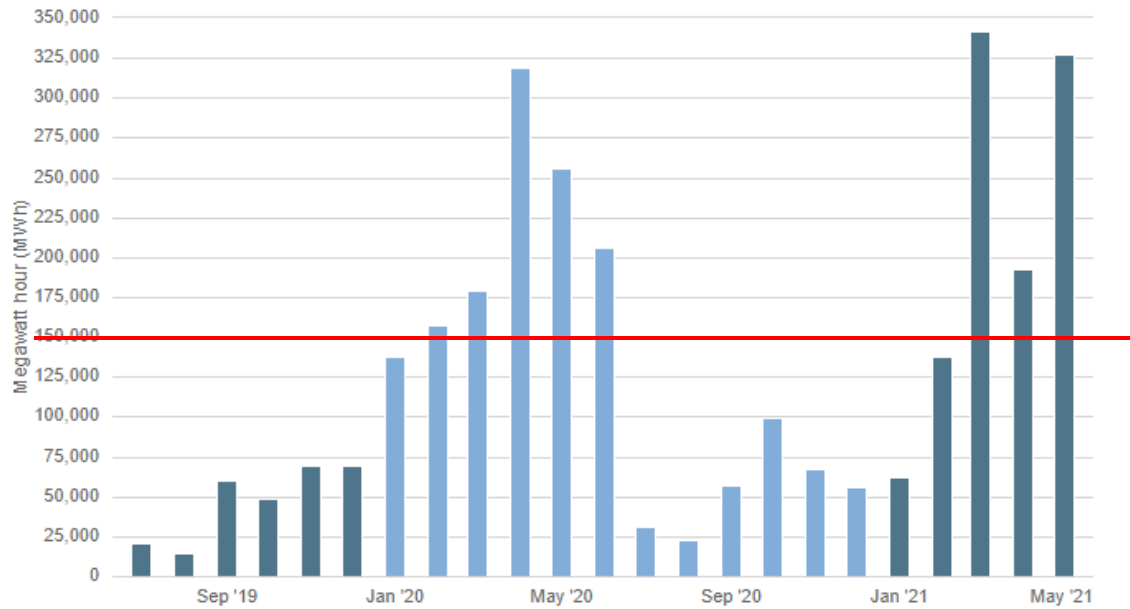
Figure 3. Wind and Solar Curtailment Totals by Month⁵¹

⁴⁸ ~~CAISO, Managing Oversupply, Wind and Solar Curtailment Totals, updated June 6, 2021, available at :~~

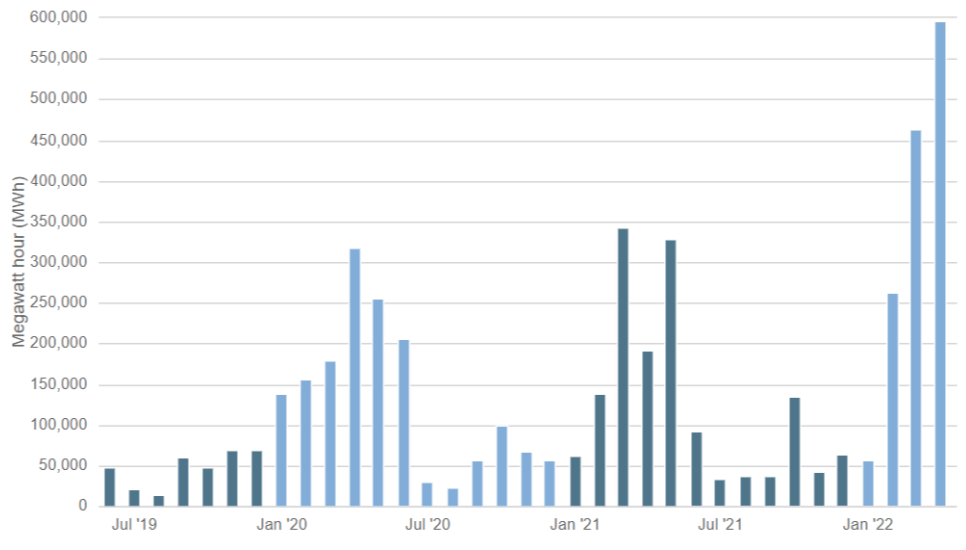
⁴⁹ ~~Id.~~

⁵⁰ ~~Managing Oversupply, CAISO, available at~~
[http://www.caiso.com/informed/Pages/ManagingOversupply.aspx#dailyCurtailment.](http://www.caiso.com/informed/Pages/ManagingOversupply.aspx#dailyCurtailment)

⁵¹ ~~Id.~~



Source: <http://www.caiso.com/informed/Pages/ManagingOversupply.aspx>



Curtailment is typically the highest during the months of March, April, and May when electric consumption is low due to mild temperatures, solar generation is high [due to the longer days](#), and hydroelectric generation is historically at its highest due to snow melt and runoff.

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

As of December 2021, SJCE ~~has~~[schedules](#) two [operating](#) Variable Energy Resources (“VER”) [that are scheduled](#) into the CAISO market, ~~which are where the VER will be~~ exposed to negative pricing at each VER’s price node. Negative pricing occurs in the Day Ahead (“DA”) market and the two intra-hour markets, the Fifteen Minute Market (“FMM”), and Real Time (“RT”) market. In 2019 and 2021, when SJCE evaluated RPS ~~project bids~~[projects](#), it considered curtailment risk. SJCE has ~~begun an~~[not undertaken a further](#) assessment of ~~pricing and price~~ node -level curtailment risk [but has minimal data to analyze](#) since [the PPAs have come online at the end of 2021 and in early 2022](#). ~~SJCE evaluating projects but~~ has looked more generally at system-level curtailment at the NP-15 and SP-15 Trading Hubs and will continue to monitor [negative pricing and node-level curtailment risk as it relates to the new PPAs](#)~~developments~~.

For RPS planning purposes on a system level, Table 5 below provides information on negative prices for both the SP-15 and NP-15 Trading Hubs for DA and FMM prices (as an example of the intra-hour market) from 2018 through ~~2021~~[2020](#). Note that in order to provide a ~~comparable~~ comparison with DA prices, the price data for FMM in the table below shows the average hourly price. SJCE is unable to provide a ten-year forecast of negative price events for its specific resources since those resources are still under development [or have recently come online](#).⁵² However, based on the analysis conducted by EQ Research for SJCE [in 2021](#) using data collected on California IRPs, the annual proportion of wind and solar not supported by storage to total net capacity additions between 2020-2030 is approximately 1.7 percent per year, which could contribute to an increase in negative prices.⁵²

Table 5: Number of Negative Pricing Intervals and Average Prices for CAISO Trading Hubs

CAISO Market	2018	2019	2020	2021
NP-15 DA	Average price: \$38.08 Average negative price: -\$5.06 # negative hours: 83	Average price: \$35.63 Average negative price: -\$2.30 # negative hours: 164	Average price: \$32.22 Average negative price: -\$1.51 # negative hours: 37	Average price: \$52.36 Average negative price: -\$0.18

⁵² Data collected by EQ Research using IRP as a Data Service™ on California 2020 IRPs shows that 18.5 GW of solar and wind will be added to the electrical grid between 2020-2030 along with 12.7 GW of storage. In perspective, the total capacity planned to be added in California during that period is 34 GW with 3.4 GW of capacity set to retire.

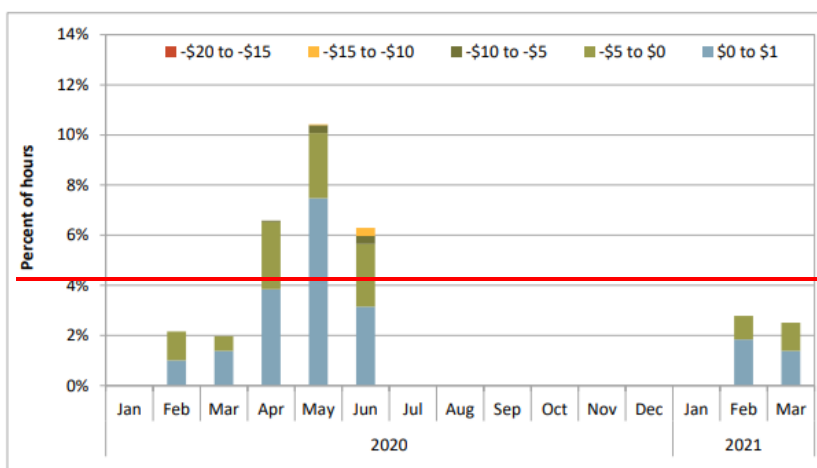
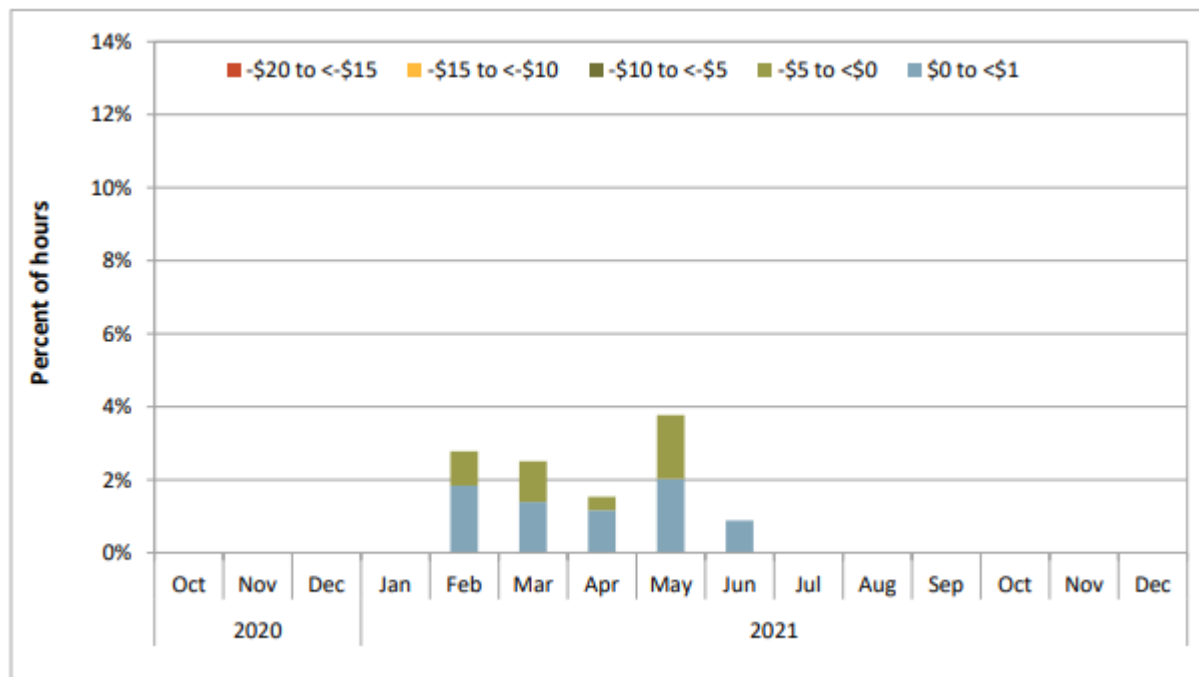
				# negative hours: 16
SP-15 DA	Average price: \$41.58 Average negative price: -\$4.91 # negative hours: 76	Average price: \$35.51 Average negative price: -\$2.09 # negative hours: 149	Average price: \$33.98 Average negative price: -\$1.24 # negative hours: 141	Average price: \$49.94 Average negative price: -\$3.66 # negative hours: 57
NP-15 FMM	Average price: \$35.04 Average negative price: -\$6.64 # negative hours: 133	Average price: \$35.58 Average negative price: -\$4.99 # negative hours: 224	Average price: \$31.50 Average negative price: -\$2.95 # negative hours: 171	Average price: \$50.46 Average negative price: -\$1.52 # negative hours: 214
SP-15 FMM	Average price: \$37.51 Average negative price: -\$5.71 # negative hours: 171	Average price: \$35.75 Average negative price: -\$4.45 # negative hours: 240	Average price: \$32.62 Average negative price: -\$5.22 # negative hours: 248	Average price: \$48.86 Average negative price: -\$2.26 # negative hours: 339

Although SJCE cannot provide a forecast for negative pricing and curtailment or “downward dispatch” for its resources ~~yet in development~~, it is aware that the instances are increasing systemwide. According to the CAISO’s ~~Q4~~~~Q1~~ 2021 Department of Market Monitoring Report, economic downward dispatch in the quarter accounted for about 358,750 MWh in March 2021 compared to 175,000 MWh of curtailment in 2020 and 125,000 MWh in 2019 during the same month.⁵³ The CAISO attributes this high level of economic downward dispatch over the quarter to higher renewable production, lower load, and congestion from south

⁵³ ~~Q4~~ ~~CAISO Department of Market Monitoring Q1~~ 2021 Report on Market Issues and Performance, ~~CAISO~~, ~~(June 9 (Apr. 4, 2022), available, 2020)~~ at ~~9, available at:~~ <http://www.caiso.com/Documents/2021-First-Quarter-Report-on-Market-Issues-and-Performance-Jun-9-2021.pdf> ~~Q1~~ ~~and CAISO Department of Market Monitoring Report Q1 2020~~ Report on Market Issues and Performance (Sept. 11, 2020), available at: <http://www.caiso.com/Documents/2020FirstQuarterReportonMarketIssuesandPerformance-Sep112020.pdf>

to north. The CAISO notes that most renewable generation dispatched down were solar resources, rather than wind and that negative DA prices typically occur during the middle of the day when production from solar resources, which has low marginal costs, is at its highest.⁵⁴ See Figure 4 for an example of the frequency of negative DA prices by month.

Figure 4: Frequency of Negative Day-Ahead Prices (\$/MWh) by Month⁵⁵



⁵⁴ [Q4 2021 Report on Market Issues and Performance](#), *supra* note 36. ~~*Id.* at 9.~~

⁵⁵ *Id.* at 23, Figure 1. ~~18-16 Frequency of Negative Day-Ahead Prices (\$/MWh) by Month.~~

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

As discussed in Section IV.C, the E3 valuation model SJCE used to assess renewable project values considered the impact of curtailment. The E3 model produced an implied REC value for each project, taking into account the project location, curtailment assumptions, negative price risks, and more. SJCE expects to complete a comparable analysis when it undertakes long-term procurement going forward. ~~Further, SJCE management, the ROC, and Council undertake careful projections in establishing budgets and delegating procurement authority for the program. SJCE's staff and the ROC monitor the performance of SJCE's procurement regularly including mark-to-market analysis and ensuring SJCE resource procurement remains within pre-established budgets and consistent with SJCE's financial proforma.~~

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

SJCE has two long-term contracts with facilities that came online in December 2021. SJCE also became its own Scheduling Coordinator ("SC") in December 2021, and it evaluates the best approaches to mitigating overgeneration and associated negative market prices in coordination with its former SC and current Scheduling Agent, Northern California Power Agency. Northern California Power Agency's ~~NCPA~~. ~~NCPA's~~ subject matter experts have years of experience managing these issues for its municipal members. SJCE will also utilize its new Energy Trading and Risk Management software ~~ETRM~~ to further understand risk of overgeneration and negative prices. ~~In the interim, SJCE has purchased attributes in the open market to meet its clean energy goals.~~

SJCE reviews regular performance reports for the PPAs that are delivering energy, including considering negative costs. SJCE can question or dispute charges, especially when the contracted price floor is exceeded and/or energy curtailment should have occurred during negative market pricing events.

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

As described in Section IV.A, in the context of the 2020 IRP, SJCE undertook a sophisticated analysis that incorporates production cost modeling and stochastic analysis to identify a robust portfolio that allows SJCE to meet its regulatory requirements and local goals cost-effectively and in a manner that prudently manages ~~a plethora of~~ risks, including overgeneration and negative market prices. SJCE's 2020 IRP submissions were, as required, developed using CPUC assumptions (with any deviations noted and supported). SJCE will continue to update its IRP in 2022 in compliance and coordination with the CPUC, including and considering ~~over-time,~~ updated information on projected curtailment, and negative market prices.

Further, as described in Section IV.C., SJCE considers the impact of curtailment and negative pricing when evaluating new procurement and has, where appropriate, used historical data to ~~further~~ assess locational risks.

Moreover, because overgeneration and negative market price conditions are largely driven by ~~State~~ policy, it is appropriate to consider macro-level mitigation measures through CAISO initiatives, ~~CPUC Commission~~ rulemakings, and possibly ~~even~~ legislation.

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

SJCE has clauses in its long-term agreements to avoid exposure to negative pricing and manage associated risks. Price floors and economic curtailment rights are contractual tools that support these efforts. When scheduling in the Real-Time market, exposure to negative prices can be mitigated by price floors and curtailment orders up to an annual cap. SJCE can also use price floors in the Day-Ahead market.

XIV. Cost Quantification

Pursuant to § 399.12(j)(2), CCAs shall participate in the RPS program subject to the same terms and conditions applicable to an electrical corporation, and as such, shall provide information related to RPS procurement costs and sales information required in this section. SJCE has provided the Cost Quantification Table as Appendix E. ~~As directed Pursuant to the direction~~ in the ACR, SJCE has completed those cells in the Cost Quantification tables that correspond to Table 3, Rows 1-5 in the ACR.

XV. Coordination with Integrated Resource Planning Proceeding

As required by the ACR,⁵⁶ SJCE includes the following table that describes how SJCE's ~~Draft 2022~~~~Final 2021~~ RPS Procurement Plan conforms with the ~~determinations made in the~~ IRP proceeding~~Proceedings (R.16-02-007~~ and ~~aligns with the information in SJCE's 2020 IRP that was approved in D. 22-02-004. SJCE is currently undertaking modeling for its 2022 IRP individual plan filing and will update the final 2022 RPS Procurement Plan with its findings after the IRP is approved by City Council in the Fall of 2022.~~~~R.20-05-003).~~

IRP Section Subsection	RPS Alignment in IRP
III. Study Results 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 2020 IRP Plans for Commission approval and certification. InAs part of its approved 2020 IRP filing, SJCE selectedsubmitted two Conforming Portfolios that achieve its proportional share of both a 46 MMT and 38 MMT GHG resource portfolio scenario. Under each of these portfolios, SJCE's currently contracted RPS resources are included and planned resources are added to achieve the relevant GHG target as its preferred portfolio, which, in well as RPS procurement requirements, including the 65 percent long-term contracting requirement. In addition to the RPS resources already under contract with SJCE, the 38 MMT portfolio adds 100 MW of wind, 320 MW of solar, and 200 MW of battery storage by 2030. The 46 MMT portfolio adds 90 MW of wind, 100 MW of solar and 150 MW of battery storage by 2030. SJCE used a 30 MMT Portfolio to develop this RPS plan. The 30 MMT Portfolio is more aggressive than its 38 MMT Portfolio and is consistent with the 38 MMT Portfolio as follows: 1. Contracted Existing RPS resources: SJCE has twono existing RPS resources online as of December 2021: 1) a 62 MW solar resource with fixed energy deliveries between HE7 and HE 22 and 2) a 225 MW New Mexico wind resource delivering dynamically scheduled PCC1 imports. SJCE reliesunder contract. SJCE is relying on short-term REC contractspurchases until the remainder of its

⁵⁶ ACR at ~~37-39~~~~32-35~~.

	contracted new resources <u>under long-term contracts come</u> online. at the end of 2021. 2.1. <u>Planned Existing RPS resources:</u> SJCE may enter into additional short-term contracts with existing resources as needed. <u>SJCE also plans to accept some amount of the short-term voluntary allocations from PG&E.</u> <u>2. New RPS resources:</u> SJCE has contracted for <u>a total of</u> 487 MW of renewable generation, including 262 MW of new in-state solar and 225 MW of new out-of-state wind, as well as 10 MW of co-located 4-hour lithium-ion batteries. <u>SJCE expects two in development-renewable resources agreements to be delivering power (although potentially not from a new facility initially) by 2024, including 100 MW solar paired with 10 MW storage and</u> Based on procurement activities to date, SJCE will need to procure an additional <u>solar resource.</u> <u>3. New and existing resources that will be used to meet CPUC Mid-Term Reliability (MTR) obligations adopted in D.21-06-035:</u> <u>SJCE has entered two contracts for long-duration storage totaling</u> 27350 MW of battery storage, 100 MW of wind, 475 MW and <u>plans to enter additional contracts for</u> of solar, and 21.5 MW of either geothermal, <u>energy storage, and renewable energy paired with energy storage.</u> <u>SJCE will use</u> or biomass is required to be in service by 2030 to be on track to achieve its <u>new online wind resource to meet</u> emission targets in the first year of its MTR compliance. 30 MMT Portfolio and to comply with D. 21-06-035.	
IV. Action Plan A. Proposed Activities	Retail sellers should describe how they propose to use RPS resources to implement both Conforming Portfolios.	
	<i>1. Proposed RPS procurement activities as required by Commission decision or mandated procurement.</i>	In the last two years, SJCE has contracted for 487 MW of new renewable generation which will supply <u>roughly</u> 44 percent of SJCE's load by 2024<u>2023</u>, the first full year when all <u>SJCE new</u> resources are anticipated to be operational. SJCE expects its currently contracted resources to exceed the 65 percent long-term contracting requirement in the 2021-2024 compliance period and beyond. SJCE plans to add new solar, wind, geothermal or biomass, and storage at a measured pace over the next decade to ensure SJCE's portfolio is cost-

		effective, meets State law requirements, and does not result in excess supply. SJCE will also continue to procure short-term renewable resources to ensure compliance with State RPS mandates and to meet Council-approved portfolio content goals.
	<i>2. Procurement plans, potential barriers, and resource viability for each new RPS resource identified.</i>	Modeling suggests that in the more aggressive 30 MMT Portfolio that SJCE is actively pursuing, an additional 350 MW of battery storage, 100 MW of wind, and 475 MW of solar is required to be in service by 2030. SJCE will also amend this plan to procure geothermal or biomass to comply with the mandated procurement set forth in D. 21-06-035 signed on June 24, 2021. Potential barriers <u>for all procurement</u> include: (1) risks associated with power procurement, which is addressed in SJCE’s risk management strategy; (2) regulatory and market uncertainties such as dramatically fluctuating<u>increasing PCIA rates, allocation of IOU PCIA rates; global supply chain constraints; tariffs on solar panels</u>resources, and the expansion of Direct Access over the longer term; (3) the ongoing impacts of the COVID-19 pandemic; and (4) changes to <u>RA Resource Adequacy requirements, cost, counting rules,</u> and system reliability <u>needs</u>. Additionally, SJCE’s procurement activities seeking long-duration storage could <u>reduce the risk of</u>mitigate renewable energy curtailment impacts of wind and solar.
IV. Action Plan 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:	
	<i>1. The type of solicitation.</i>	In partnership with Peninsula Clean Energy, SJCE issued a ‘2020 Request for Offers for Long-Term Renewable Energy + Storage’ in the summer of 2020 and received a robust response. After assessing the responses, SJCE

	2. The timeline for each solicitation. 3. Desired online dates. 4. Other relevant procurement planning information, such as solicitation goals and objectives.	decided not to procure any projects via this solicitation. In fall of 2020, SJCE joined seven other CCAs to issue a joint-RFO for long duration storage (eight hours or longer) to cost-effectively enhance renewable energy portfolios and aid in achieving California’s aggressive GHGgreenhouse gas reduction targets. As of this filing, <u>SJCE has entered into two agreements with CODs of 2025 and 2026. These storage projects will add reliability and decrease system renewable energy curtailment.</u> offers are being evaluated with a target of executing contracts in 2022. In fall of 2021, CC Power issued a solicitation for firm clean resources on behalf of its members including SJCE. As of this filing, <u>CC Power contracted</u>offers are being evaluated with <u>two developers</u>, and <u>SJCE expects to seek City Council approval to participate</u>a target of executing contracts in those projects in the Fall2022. <u>In February 2022, SJCE and EBCE jointly issued a solicitation seeking long-term agreements for renewables, renewables paired with storage, and standalone storage to meet the Mid-Term Reliability requirements and satisfy some of the mid-term RPS resource procurement identified in SJCE’s preferred IRP portfolio.</u> <u>To address procurement needs out to 2032,</u> SJCE expects to issue an RFO for additional resources in the first quarter of 2022. SJCE will take a measured approach to procurement of the identified needed RPS resources to allow for technology maturation, resolution of regulatory uncertainty, additional load certainty, and flexibility as market prices adjust over time. Solicitations in partnership with other CCAs have been successful in the past and SJCE anticipates continuing this approach in the future.
--	---	--

IV. Action Plan 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:	
	<i>1. Key market, regulatory, financial, or other resource viability barriers or risks associated with the RPS resources coming online in both retail sellers' Conforming Portfolios.</i>	SJCE has identified key risks associated with RPS resources coming online. Risks but does not expect any procurement barriers to impede SJCE's future contracting for new resources. The risks include: • Project development delays <u>due to, for example, supply chain disruptions or interconnection issues</u> • Resource delivery disruptions for contracted volume and energy capacity • <u>Regulatory uncertainty</u> Uncertainty regarding future resource adequacy value of renewable and storage resources • Uncertainty regarding cost declines for forecasted wind, and solar, <u>and storage</u> resources • Curtailment and negative pricing • Viability of long-lead time resources such as out-of-state and offshore wind • Aggregated Capability Constraint uncertainty. These issues are consistent between both Portfolios and the conforming 38 MMT Portfolio with an increased risk in the 30 MMT Portfolio due to the increased proportion of use-limited resources. SJCE <u>seeks to</u> will mitigate these risks and other impacts through continued development of a diversified portfolio and following its <u>established</u> risk management policy.
	<i>2. Key risks associated with the potential retirement of existing RPS resources on which the retail seller intends to rely in the future.</i>	<u>Key risks</u> SJCE did not identify any major risk associated with <u>the</u> potential retirement of existing RPS resources <u>include under-procurement of long</u> because SJCE only has short-term RPSREC contracts and increased costs associated with filling an open position. A <u>existing resources. Additionally, as</u> SJCE

		continues to expand its portfolio with long-term contracts, it will rely less on market purchases from ^{of} existing resources.
--	--	---

Dated: ~~July 1~~^{February 17}, 2022

Respectfully submitted,

/s/ Kari Smith

Kari Smith
Division Manager, Legislative and
Regulatory Division
San José Clean Energy
88 South 4th Street, Suite 130
San José, CA 95112
(408) 535-4867
kari.smith@sanjoseca.gov

/s/ Jeanne Solé

Jeanne M. Solé
Deputy Director, Power Resources
San Jose Clean Energy
88 South 4th Street, Suite 130
San Jose, CA 95112
(408) 535-4867
jeanne.sole@sanjoseca.gov

Appendix B

2022 RPS Procurement Plan Checklist and Verification

Draft 2022 RPS Procurement Plan Checklist- Task Completed

Retail seller name: City of San José, Administrator of San José Clean 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. Voluntary Allocation and Market Offer (VAMO)	YES	
IV.A.2. Portfolio Optimization	YES	
IV.B. Responsive to Policies, Regulations, and Statutes	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	
Appendix A: Redlined Version of the Final 2021 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 July 1, 2022 at San Jose, California.

/s/Kari Smith

Kari Smith
Division Manager, Legislative and Regulatory Division
San José Clean Energy
88 South 4th Street, Suite 130
San José, CA 95112
(408) 535-4867
kari.smith@sanjoseca.gov

Appendix C

Renewable Net Short Calculation

Renewable Net Short Calculations - 2022 RPS Procurement Plans

LSE Name:	San José Clean Energy																
Date Filed:	7/1/22																
Variable	Calculation	Item	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2017-2020	2021 Actual	2022 Forecast	2023 Forecast	2024 Forecast	2021-2024	2025 Forecast	2026 Forecast	2027 Forecast	2025-2027	
		Forecast Year					CP 3		1	2	3	CP 4	4	5	6	CP 5	
		Annual RPS Requirement															
A		Total Retail Sales (MWh)		38,387	3,462,743	4,008,652	7,509,782	3,787,868	3,770,400	3,789,737	3,820,787	15,168,792	3,844,492	3,867,615	3,894,499	11,606,606	
B		RPS Procurement Quantity Requirement (%)		27.0%	29.0%	31.0%	33.0%	32.1%	35.8%	38.5%	41.3%	44.0%	39.9%	46.670%	49.330%	52.0%	49.3%
C	A*B	Gross RPS Procurement Quantity Requirement (MWh)		-	11,132	1,073,450	1,322,855	2,407,437.6	1,354,163	1,451,604	1,563,267	1,681,146	6,050,179.7	1,794,224	1,907,894	2,025,139	5,727,258.4
D		Voluntary Margin of Over-procurement (MWh)		4,223	484,784	481,038	970,045	670,697	748,543	642,236	606,100	2,667,576	560,092	513,168	466,408	1,539,668	
E	C+D	Net RPS Procurement Need (MWh)		-	15,355	1,558,234	1,803,893	3,377,482	2,024,860	2,200,147	2,205,502	2,287,246	8,717,755	2,354,316	2,421,063	2,491,547	7,266,926
		RPS-Eligible Procurement															
Fa		Risk-Adjusted RECs for Online Generation (MWh)		-	18,400	1,646,500	1,910,340	3,575,240	2,307,984	1,931,200	1,184,626	1,188,638	6,612,448	1,184,626	1,184,626	3,553,878	
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 for RPS Facilities in Development (MWh)						-	65,200	425,612	485,400	976,212	483,961	482,145	480,663	1,446,769	
Fbb		Forecast Failure Rate for RPS Facilities in Development (%)						#DIV/0!	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	
Fc		Pre-Approved Generic RECs (MWh)		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fd		Executed REC Sales (MWh)		-	-	-	74,823	74,823	100,000	-	-	-	100,000	-	-	-	-
F	Fa+Fb+Fc-Fd	Total RPS Eligible Procurement (MWh)		-	18,400	1,646,500	1,835,517	3,500,417	2,207,984	1,996,400	1,610,238	1,674,038	7,488,660	1,668,587	1,666,771	1,665,289	5,000,647
F0		Category 0 RECs		-	-	-	-	-	-	-	-	-	-	-	-	-	-
F1		Category 1 RECs		-	16,000	900,000	1,554,110	2,470,110	1,915,034	2,098,923	1,831,202	1,908,995	7,754,154	1,902,796	1,900,568	1,898,750	5,702,113
F2		Category 2 RECs		-	2,400	291,500	356,230	650,130	392,950	115,000	-	-	507,950	-	-	-	-
F3		Category 3 RECs		-	-	455,000	-	455,000	-	-	-	-	-	-	-	-	-
		Gross RPS Position (Physical Net Short)															
Ga	F-E	Annual Gross RPS Position (MWh)		-	3,045	88,266	31,624	122,935	183,125	(203,747)	(595,264)	(613,209)	(1,229,095)	(685,729)	(754,292)	(826,258)	(2,266,279)
Gb	F/A	Annual Gross RPS Position (%)		0%	48%	48%	46%	47%	58%	53%	42%	44%	49%	43%	43%	43%	43%
		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						-	-				-	-			-
J2		Category 2 RECs						-	-				-	-			-
		Expiring Contracts															
K		RECs from Expiring RPS Contracts (MWh)											-	-			-
		Net RPS Position (Optimized Net Short)															
La	Ga+Ia-Ib-Hc	Annual Net RPS Position after Bank Optimization (MWh)		-	3,045	88,266	31,624	122,935	183,125	(203,747)	(595,264)	(613,209)	(1,229,095)	(685,729)	(754,292)	(826,258)	(2,266,279)
Lb	(F+Ia-Ib-Hc)/A	Annual Net RPS Position after Bank Optimization (%)		#DIV/0!	0.479328939	0.475490138	0.457888836	0.466114349	0.582009458	0.52949291	0.424894371	0.438139549	0.493688621	0.434020039	0.430955832	0.42760032	0.430844885

Note: All values are to be input in MWhs

Renewable Net Short Calculations - 2022 RPS Procurement Plans

LSE Name:	San José Clean Energy
Date Filed:	7/1/22

Variable	Calculation	Item	2028 Forecast	2029 Forecast	2030 Forecast	2028-2030 CP 6	2031 Forecast	2032 Forecast
		Forecast Year	7	8	9		10	11
		Annual RPS Requirement						
A		Total Retail Sales (MWh)	3,921,635	3,957,583	3,995,713	11,874,931	4,040,379	4,079,400
B		RPS Procurement Quantity Requirement (%)	54.7%	57.3%	60.0%	57.3%	60.0%	60.0%
C	A*B	Gross RPS Procurement Quantity Requirement (MWh)	2,143,958	2,268,882	2,397,428	6,810,268.0	2,424,227	2,447,640
D		Voluntary Margin of Over-procurement (MWh)	418,392	370,650	322,335	1,111,377	380,886	439,500
E	C+D	Net RPS Procurement Need (MWh)	2,562,350	2,639,532	2,719,763	7,921,645	2,805,114	2,887,140
		RPS-Eligible Procurement						
Fa		Risk-Adjusted RECs from Online Generation (MWh)	1,188,638	1,184,626	1,184,626	3,557,890	1,184,626	1,188,638
Faa		Forecast Failure Rate for Online Generation (%)	9.5%	9.5%	9.5%	9.5%	9.5%	9.5%
Fb		Risk-Adjusted RECs from RPS Facilities in Development (MWh)	478,975	477,319	475,490	1,431,784	475,879	472,037
Fbb		Forecast Failure Rate for RPS Facilities in Development (%)	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%
Fc		Pre-Approved Generic RECs (MWh)	-	-	-	-	-	-
Fd		Executed REC Sales (MWh)	-	-	-	-	-	-
F	Fa+Fb+Fc-Fd	Total RPS Eligible Procurement (MWh)	1,667,613	1,661,945	1,660,116	4,989,673	1,658,505	1,660,675
F0		Category 0 RECs	-	-	-	-	-	-
F1		Category 1 RECs	1,901,111	1,894,646	1,892,402	5,688,160	1,890,426	1,892,598
F2		Category 2 RECs	-	-	-	-	-	-
F3		Category 3 RECs	-	-	-	-	-	-
		Gross RPS Position (Physical Net Short)						
Ga	F-F	Annual Gross RPS Position (MWh)	(894,738)	(977,588)	(1,059,647)	(2,931,972)	(1,146,608)	(1,226,465)
Gb	F/A	Annual Gross RPS Position (%)	43%	42%	42%	42%	41%	41%
		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				-	-	
J2		Category 2 RECs				-	-	
		Expiring Contracts						
K		RECs from Expiring RPS Contracts (MWh)				-	-	
		Net RPS Position (Optimized Net Short)						
La	Ga+Ia-Ib-Hc	Annual Net RPS Position after Bank Optimization (MWh)	(894,738)	(977,588)	(1,059,647)	(2,931,972)	(1,146,608)	(1,226,465)
Lb	(F+Ia-Ib-Hc)/A	Annual Net RPS Position after Bank Optimization (%)	0.425234007	0.41993935	0.415474293	0.420185467	0.410482617	0.40708804

Note: All values are to be input in MWhs

Appendix D

Project Development Status Update

[illegible]

[illegible]

[illegible]

[illegible]

Appendix E

Cost Quantification

(Public Version)

LSE Name:	San José Clean Energy
Date Filed:	July 1, 2022

 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)	2019	2020	2021
2	Biogas: Digester Gas			
3	Biogas: Landfill Gas			
4	Biodiesel			
5	Biomass	\$1,787,322	\$1,408,859	\$1,790,197
6	Muni Solid Waste			
7	Geothermal	\$1,146,454	\$1,670,658	\$6,757,872
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)	\$9,660,523	\$12,603,569	\$9,916,682
15	Solar Thermal			
16	Wind	\$4,442,982	\$13,558,353	\$15,473,379
17	Unbundled RECs (REC Only)	\$659,250		
18	Various (Index Plus REC)***	\$37,718		
19	Fuel Cell			
20	UOG: Small Hydro			
21	UOG: Solar PV			
22	UOG: Other			
23	Executed REC Sales (Revenue)		\$986,915	\$1,316,250
24	Total RPS-Eligible Procurement and Generation Net Cost	\$17,734,250	\$28,254,522	\$32,621,879
25	Total Retail Sales (MWh)	3,462,743	4,008,652	3,787,868
26	Incremental Rate Impact	0.512144563	0.704838405	0.861219967

LSE Name:	San José Clean Energy
Date Filed:	July 1, 2022

 Input Required

 No Input Required

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)**	2022	2023	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)				\$341,190	\$339,484	\$337,787	\$336,098	\$334,417	\$332,745
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				\$341,190	\$339,484	\$337,787	\$336,098	\$334,417	\$332,745
26	Total Retail Sales (MWh)	3,787,868	3,789,737	3,820,787	3,844,492	3,867,615	3,894,499	3,921,635	3,957,583	3,995,713
27	Incremental Rate Impact				0.01 ¢/kWh	0.01 ¢/kWh	0.01 ¢/kWh	0.01 ¢/kWh	0.01 ¢/kWh	0.01 ¢/kWh
28	Executed RPS-Eligible Contracts (Purchases and Sales)****	2022	2023	2024	2025	2026	2027	2028	2029	2030
29	Biogas: Digester Gas									
30	Biogas: Landfill Gas									
31	Biodiesel									
32	Biomass									
33	Muni Solid Waste									
34	Geothermal									
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)				\$29,544,089	\$29,493,288	\$29,451,850	\$29,448,104	\$29,358,278	\$29,307,057
42	Solar Thermal									
43	Wind				\$37,875,960	\$37,875,960	\$37,875,960	\$38,013,600	\$37,875,960	\$37,875,960
44	Unbundled RECs (REC Only)									
45	Various (Index Plus REC)***									
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				\$67,420,049	\$67,369,248	\$67,327,810	\$67,461,704	\$67,234,238	\$67,183,017
53	Total Retail Sales (MWh)	3,787,868	3,789,737	3,820,787	3,844,492	3,867,615	3,894,499	3,921,635	3,957,583	3,995,713
54	Incremental Rate Impact				1.753679	1.741880919	1.728792583	1.720244329	1.698871197	1.681377433
55	Total RPS-Eligible Procurement and Generation Cost				\$67,761,239	\$67,708,732	\$67,665,597	\$67,797,802	\$67,568,655	\$67,515,762
56	Total Incremental Rate Impact				1.762553778	1.75065853	1.737466016	1.728814679	1.707321237	1.689704989

*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:	San José Clean Energy
Date Filed:	July 1, 2022

Table 2: Cost Quantification (Forecast Costs and Revenues, \$)			
1	Executed But Not Approved RPS-Eligible Contracts (Purchases and Sales)**	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)	\$331,082	\$329,426
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	\$331,082	\$329,426
26	Total Retail Sales (MWh)	4,040,379	4,079,400
27	Incremental Rate Impact	0.01 ¢/kWh	0.01 ¢/kWh
28	Executed RPS-Eligible Contracts (Purchases and Sales)****	2031	2032
29	Biogas: Digester Gas		
30	Biogas: Landfill Gas		
31	Biodiesel		
32	Biomass		
33	Muni Solid Waste		
34	Geothermal		
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)	\$29,261,963	\$29,253,857
42	Solar Thermal		
43	Wind	\$37,875,960	\$38,013,600
44	Unbundled RECs (REC Only)		
45	Various (Index Plus REC)***		
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	\$67,137,923	\$67,267,457
53	Total Retail Sales (MWh)	4,040,379	4,079,400
54	Incremental Rate Impact	1.661673889	1.648954879
55	Total RPS-Eligible Procurement and Generation Cost	\$67,469,004	\$67,596,883
56	Total Incremental Rate Impact	1.669868207	1.657030238

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

LSE Name:	San José Clean Energy		Input Required		No Input Required
Date Filed:	July 1, 2022				

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)	2019	2020	2021
2	Biogas: Digester Gas			
3	Biogas: Landfill Gas			
4	Biodiesel			
5	Biomass	124,720	74,728	100,235
6	Muni Solid Waste			
7	Geothermal	80,000	114,195	419,549
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)	674,115	690,169	549,239
15	Solar Thermal			
16	Wind	310,033	957,331	1,138,961
17	Unbundled RECs (REC Only)	455,000		
18	Various (Index Plus REC)***	2,632		
19	Fuel Cell			
20	UOG: Small Hydro			
21	UOG: Solar PV			
22	UOG: Other			
23	Executed REC Sales (MWh)		74,823	100,000
24	Total RPS Eligible Procurement (MWh)	1,646,500	1,761,600	2,107,984

LSE Name:	San José Clean Energy		Input Required		No Input Required
Date Filed:	July 1, 2022				

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) **	2022	2023	2024	2025	2026	2027	2028
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)		3,485	4,763	4,739	4,715	4,691	4,668
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	3,485	4,763	4,739	4,715	4,691	4,668
26	Executed and Approved RPS-Eligible Contracts (Purchases and Sales) ****	2022	2023	2024	2025	2026	2027	2028
27	Biogas: Digester Gas							
28	Biogas: Landfill Gas							
29	Biodiesel							
30	Biomass	25,000						
31	Muni Solid Waste							
32	Geothermal							
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)	366,034	884,773	957,846	951,158	948,954	947,159	946,103
40	Solar Thermal							
41	Wind	902,889	946,899	950,340	946,899	946,899	946,899	950,340
42	Unbundled RECs (REC Only)							
43	Various (Index Plus REC)***	920,000						
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	2,213,923	1,831,672	1,908,186	1,898,057	1,895,853	1,894,058	1,896,443
51	Total RPS Eligible Procurement (MWh)	2,213,923	1,835,156	1,912,949	1,902,796	1,900,568	1,898,750	1,901,111

*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:	San José Clean Energy
Date Filed:	July 1, 2022

Table 4: Cost Quantification (Forecast Procurement / Generation and Sales, MWh)

1	Executed But Not Approved RPS-Eligible Contracts (Purchases and Sales) **	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)	4,645	4,621	4,598	4,575
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	4,645	4,621	4,598	4,575
26	Executed and Approved RPS-Eligible Contracts (Purchases and Sales) ****	2029	2030	2031	2032
27	Biogas: Digester Gas				
28	Biogas: Landfill Gas				
29	Biodiesel				
30	Biomass				
31	Muni Solid Waste				
32	Geothermal				
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)	943,103	940,882	938,929	937,683
40	Solar Thermal				
41	Wind	946,899	946,899	946,899	950,340
42	Unbundled RECs (REC Only)				
43	Various (Index Plus REC)***				
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	1,890,002	1,887,781	1,885,828	1,888,023
51	Total RPS Eligible Procurement (MWh)	1,894,646	1,892,402	1,890,426	1,892,598

*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