

STATE OF CALIFORN

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

Rulemaking 24-01-017 (Filed January 25, 2024)

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### AVA COMMUNITY ENERGY'S DRAFT 2024 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN

(PUBLIC VERSION)

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July 24, 2024

# BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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Pursuant to the May 17, 2024, Assigned Commissioner and Assigned Administrative Law Judge's Ruling Identifying Issues and Schedule of Review for 2024 Renewables Portfolio Standard Procurement Plans ("Ruling"), June 18, 2024 E-Mail Ruling Granting Request from Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric to Extend 2024 RPS Plan Procedural Deadlines, and July 19, 2024 Administrative Law Judge Division E-Mail Notice Regarding Outage of CPUC E-Filing System, Ava Community Energy ("Ava") hereby submits its Draft 2024 Renewables Portfolio Standard Procurement Plan.

Respectfully submitted,

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July 24, 2024



## **AVA COMMUNITY ENERGY**

## DRAFT 2024 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN

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## Table of Contents

I.	Major Changes to RPS Plan.	4
II.	Executive Summary of Key Issues	5
III.	Compliance with Recent Legislation and Impact of Regulatory Changes	7
III.A.	Implementation of SB 350	7
III.B.	Implementation of SB 100	7
III.C.	Compliance with SB 255	9
III.D.	Compliance with SB 901	9
III.E.	PCIA Impacts	10
III.F.	IRP Procurement Requirements	11
III.G.	RA Procurement Requirements	13
IV.	Assessment of RPS Portfolio Supplies and Demand	13
IV.A.	Portfolio Supply and Demand	13
IV.A	.1. Portfolio Optimization	16
IV.B.	Responsiveness to Local and Regional Policies	18
IV.B	1. Long-term Procurement	19
IV.C.	Portfolio Diversity and Reliability	20
IV.C	1. Transportation Electrification	23
IV.C	2. Emerging Technologies	24
IV.D.	Lessons Learned	25
V.	Project Development Status Update	26
VI.	Potential Compliance Delays	29
VII.	Risk Assessment	30
VII.A.	Compliance Risk	30
VII.B.	Risk Modeling and Risk Factors	31
VII.C.	System Reliability	32
VII.D.	Lessons Learned	33
VIII.	Renewable Net Short Calculation	36
IX.	Minimum Margin of Procurement (MMoP)	38
IX.A.	MMoP Methodology and Inputs	38
IX.B.	MMoP Scenarios	39
X.	Bid Solicitation Protocol, Including Least-Cost Best-Fit (LCBF) Methodologies	40
X.A.	Solicitation Protocols for Renewables Sales	41
X.B.	Bid Selection Protocols	41

42
43
43
44
45
45
46
47
47
47
Iours Per 49
nd/or 52
idences 53
53
54
56
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#### I. Major Changes to RPS Plan

In 2023 East Bay Community Energy officially changed our name to Ava Community Energy ("Ava") to better represent the growing area that Ava will serve moving forward, including service to parts of San Joaquin County. Ava's 2024 Renewable Portfolio Standard Procurement Plan ("RPS Plan") includes several modifications and improvements to its 2023 RPS Plan. These changes are summarized in Table 1 below and include revisions to certain sections in accordance with the direction provided in the Assigned Commissioner's Ruling ("ACR")<sup>1</sup> as well as the results of Ava's latest procurement activities.

Table 1. Major Changes from Revised Final 2023 RPS Procurement Plan to 2024 RPS Procurement Plan

Plan Reference	Plan Section	Summary of Change		
Section II	Executive Summary of Key Issues	Included updated information on Ava solicitations, inclusion of Stockton, and inclusion of Voluntary Allocation and Market Offer ("VAMO") in RPS planning		
Section IV.A	Portfolio Supply and Demand	Included updated information on Ava's procurement solicitations		
Section IV.A.1	Voluntary Allocation and Market Offer	Removed section on VAMO		
Section IV.B.1	Long-term Procurement	Updated project and contract information, including forecasted CP generation		
Section IV.C	Portfolio Diversity and Reliability	Updated information on EV adoption and electrification under a new Transportation Electrification sub-header		
Section V	Project Development Status Update	Provided updated information for multiple projects reflecting a range of progress		

<sup>&</sup>lt;sup>1</sup> Assigned Commissioner and Assigned Administrative Law Judge's Ruling Identifying Issues and Schedule of Review for 2024 Renewables Portfolio Standard Procurement Plans, R.24-01-017 (May 17, 2024).

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		towards commercial operation
Section XI.D	Impacts During Public Safety Power Shut-Off ("PSPS") Events	Updated information on outcome and status of efforts to support community resilience
Section XII.B	Written Description of Quantitative Analysis of Forecast of the Number of Hours Per Year of Negative Market Pricing for the Next 10 Years	Updated analysis of forecasted negative pricing
Section XVI	Impact of Transmission and Interconnection Delays	New section

#### **II.** Executive Summary of Key Issues

Ava has been serving customers since 2018, with commercial and industrial customers in June followed by residential customers in November. Ava has expanded our service territory since inception, beginning service to the Cities of Tracy, Newark and Pleasanton in 2020.

Additionally, the Ava Board of Directors ("Board") approved the addition of the Cities of Stockton and Lathrop which will begin service as Ava customers in April, 2025. With 2024 being the last year of the 2021–2024 Renewables Portfolio Standard ("RPS") Compliance Period 4, Ava is expecting to exceed the Compliance Period requirement with renewable generation from the portfolio of long-term, additional short-term contracts, and from the Voluntary Allocation ("VAMO") as part of the Power Charge Indifference Adjustment ("PCIA") proceedings. Ava achieved an estimated 68 % RPS in 2023, with approximately 94% of the RPS annual compliance target met from long-term contracted generation. Ava has increasingly relied on renewable generation from long-term projects to meet its RPS goals as projects from the portfolio continue to come online. The renewable generation comes from a combination of executed long-term contracts that have resulted from formal Request for Offers ("RFOs") and

through the VAMO process. Together, the renewable energy from the projects will have Ava exceed the requirement that 65% of RPS generation come from contracts of 10 or more years. Ava's portfolio of long-term RPS resources has grown since the 2023 RPS Plan filing and now has twenty executed long-term agreements for RPS resources with sixteen of those projects located in California, including four located in Alameda County and two in San Joaquin County. These agreements are for both stand-alone renewable energy projects (13) and renewable projects paired with storage (7); all from new resources with terms of 10-years or longer. Ava is wrapping up its fourth RFO, the 2023 Long-Term Resource Request for Offers ("2023 RFO") and this resulted in executed contracts for six new RPS-eligible projects with online dates in 2027 and 2028. Ava also executed contracts for five RPS-eligible solar resources as part of the Disadvantaged Communities and Community Solar Green Tariff ("DAC-GT and CS-GT") proceedings. Ava is currently preparing to launch a fifth RFO, the 2024 Long-Term Resource Request for Offers ("2024 RFO"). With this next RFO Ava is looking for new renewable resources and energy storage projects that fit into our growing portfolio of resources. These projects will support an increase in renewable generation needs for the Cities of Stockton and Lathrop for 2025 and supply Resource Adequacy ("RA") with contract language aligning to the new Slice of Day methodology supporting both the requirements for RPS compliance and system reliability. Ava's 2022 Integrated Resource Plan ("IRP") evaluated its RPS- and greenhouse gas ("GHG")-free procurement needs and included plans allowing Ava to serve customers with 100% GHG-free energy by 2030

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

The section below summarizes potential impacts to Ava's RPS position associated with changes to the RPS program resulting from Senate Bill ("SB") 350, SB 100, SB 255 and SB 901 requirements, and ongoing developments in the PCIA proceeding and IRP proceeding.

#### III.A. Implementation of SB 350

SB 350 was signed by the Governor on October 7, 2015. Among other things, SB 350 set minimum procurement requirements for long-term contracts and owned renewable resources. In 2017, the California Public Utilities Commission ("Commission" or "CPUC") issued D.17-06-026, which adopted the requirement that 65% of RPS procurement must come from long-term contracts. Ava's previous solicitations addressed a significant portion of its long-term contracting needs,

Due to the diversity of Commercial Operation Dates ("CODs") among projects that are executed, Ava will use generation from the RPS allocations and from the Market Offer set forth by the PCIA Phase 2 Decision, discussed in Section III.D, and generation from other potential future long-term agreements to ensure that Ava is compliant with the SB 350 RPS requirements over Compliance Period 4 and throughout the planning horizon.

#### III.B. Implementation of SB 100

SB 100 was approved by Governor Brown on September 10, 2018, and took effect on January 1, 2019. The bill increases the RPS compliance targets for Ava from 40% to 44% by 2024, from 45% to 52% by 2027, and from 50% to 60% by 2030.<sup>2</sup> The quantitative and qualitative portions of Ava's 2024 RPS Plan reflect the new RPS targets established by SB 100,

<sup>&</sup>lt;sup>2</sup> Senate Bill 100, Section 3. Amending California Public Utilities Code § 399.15(b)(2)(B).

through the year 2034, pursuant to the Assigned Commissioner Ruling ("ACR") requiring an RPS portfolio assessment over a detailed 10-year planning horizon.<sup>3</sup>

On June 27, 2019, the Commission adopted the *Decision Implementing Provisions of*Senate Bill 100 Relating to Procurement Quantity Requirements under the California

Renewables Portfolio Standard (D.19-06-023). The decision established compliance periods and procurement quantity requirements in accordance with SB 100 such that the annual megawatt hour ("MWh") targets for RPS-eligible procurement are as follows:

Compliance Period 4 (2021–2024): (.3575 \* 2021 retail sales) + (.385 \* 2022 retail sales) + (.4125 \* 2023 retail sales) + (.44 \* 2024 retail sales)

Compliance Period 5 (2025–2027): (.4667 \* 2025 retail sales) + (.4933 \* 2026 retail sales) + (.52 \* 2027 retail sales)

Compliance Period 6 (2028–2030): (.5467 \* 2028 retail sales) + (.5733 \* 2029 retail

Compliance Period 6 (2028–2030): (.5467 \* 2028 retail sales) + (.5733 \* 2029 retail sales) + (.60 \* 2030 retail sales)

Ava's quantitative analysis of its RPS compliance position, shown in its Renewable Net Short ("RNS") table, reflects the updated annual targets defined above. In addition, in December 2020, Ava's Board adopted a target of providing customers with 100% clean energy by 2030 and in April 2022 the Board adopted the renewable targets to reach the 2030 goal which were increased in June of 2022, June of 2023, and again in June of 2024, and are included on the RNS table.

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<sup>&</sup>lt;sup>3</sup> See, e.g., ACR at 14; see also id. at 17.

#### III.C. Compliance with SB 255

SB 255 was adopted in 2019, expanding the requirements of the Commission's Supplier Diversity program to apply to community choice aggregators ("CCAs") to ensure that an equitable proportion of utility expenditures go to diverse business enterprises.

Per the requirements of SB 255 and General Order ("GO") 156, Ava submitted its annual Supplier and Diversity Annual Report in March 2024. As a California local government entity bound by California Proposition 209, Ava is prohibited from considering race, color, ethnicity, or national origin in its contracting. However, Ava places a high value on diversity and includes standard language in all of our goods, services, and power solicitations pertaining to Supplier Diversity. Solicitation materials and solicitation webinars also provide background on GO 156 and share our commitment to supporting the certification process of eligible contractors.

In addition, Ava has a strong commitment to investing locally and does have preference to transact with businesses based in its service territory, certified as disabled veteran-owned businesses, and/or located in a disadvantaged community ("DAC"), as well as for generating resources and/or energy storage that will be sited in its service territory. Detailed further in Section V, Ava executed five DAC-GT and CS-GT contracts as part of the 2023 DAC-GT and CS-GT RFO, including three projects in Alameda County and two in San Joaquin County. All of these contracts are in Ava's service territory.

#### III.D. Compliance with SB 901

SB 901 requires CCAs with contracts for certain biomass facilities operative in 2018 to seek contract extensions. Ava did not have any specific biomass contracts operative at any time in 2018 and therefore is not subject to Section 8388 of the Public Utilities Code. Ava discusses considerations around biomass procurement in Section XI.E.

#### **III.E. PCIA Impacts**

On October 11, 2018, the Commission adopted Decision Modifying the Power Charge Indifference Methodology (D.18-10-019) in the PCIA proceeding. The decision notes the need for coordination with the RPS proceeding on issues related to defining and managing excess RPS products in investor-owned utilities' ("IOU") portfolios. Additionally, it includes in the scope for Phase 2 of the proceeding a working group established to address portfolio optimization and voluntary auction frameworks for utility portfolio resources.<sup>4</sup> On February 21, 2020, the Final Report of this working group ("Working Group Three") was filed with the Commission.<sup>5</sup> On May 20, 2021 the Commission issued a *Phase 2 Decision on Power Charge Indifference* Adjustment Cap and Portfolio Optimization (D.21-05-030) that deviates from many of the consensus proposals identified in the Final Report. The decision put forth an RPS allocation process beginning in 2023, whereby load-serving entities ("LSEs") were offered shares of an IOU PCIA-eligible RPS portfolio in proportion to their vintaged, forecasted annual load share: i.e., the VAMO. Allocations were either short- or long-term, and LSEs could decline all or a portion of their allocation. Any unaccepted allocations were then offered to the market through a formal Market Offer process, and if unsold remained in the IOU's portfolio, Ava accepted the full generation volume of both the long- and short-term allocation and executed a long-term agreement following participation in the Market Offer process. These totals are included on Ava's RNS tables as part of this submission.

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<sup>&</sup>lt;sup>4</sup> R.17-06-026, PCIA Phase 2, Working Group 3.

<sup>&</sup>lt;sup>5</sup> See Final Report of Working Group 3 Co-Chairs: Southern California Edison Company (U-338E), California Community Choice Association, And Commercial Energy. Available at <a href="https://cal-cca.org/wp-content/uploads/2020/02/R1706026-Final-Report-of-WG-3-Co-Chairs.pdf">https://cal-cca.org/wp-content/uploads/2020/02/R1706026-Final-Report-of-WG-3-Co-Chairs.pdf</a>.

On December 19, 2023, PG&E issued its 7105-E Tier 2 advice letter ("AL") recommending that PG&E not hold future VAMO for RPS-eligible resources. Despite protests citing the inappropriateness and inconsistency with cost causation principles, including by the California Community Choice Association (of which Ava is a member), on May 8, 2024, the Commission Energy Division approved PG&E's AL 7105-E with an effective date of May 1, 2024. In light of Energy Division's disposition of PG&E's proposal, Ava does not anticipate further RPS-eligible volumes becoming available through the VAMO process.

#### **III.F. IRP** Procurement Requirements

D.21-06-035 ("Mid-Term Reliability Decision"), as adopted in the IRP proceeding (R.20-05-003) in June 2021, establishes a procurement target of 11,500 megawatts ("MW") of new net qualifying capacity ("NQC") coming online in 2023–2026, all from zero-emitting generation resources and/or energy storage, including RPS-eligible resources. Each retail seller is assigned a procurement responsibility based on its share of peak demand. Ava's share of the Mid-Term Reliability Decision's procurement target is over 400 MW of incremental NQC with different volume requirements for each year across the four-year period. Ava's existing long-term contracts with online dates in 2023 and 2024 will be providing incremental NQC that satisfies some of Ava's requirements.

The Mid-Term Reliability Decision has impacted Ava's procurement plans to meet RPS compliance requirements in that the Decision places a different and lower effective load carrying capability ("ELCC") value on stand-alone wind and solar resources than is used in the Resource Adequacy ("RA") compliance proceeding. The result is that Ava is less able to procure resources

<sup>7</sup> *Id*.

<sup>&</sup>lt;sup>6</sup> See CPUC Disposition of PG&E AL 7105-E and protests (May 8, 2024). Available at <a href="https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC">https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC</a> 7105-E.pdf

that contribute to all three requirements (RPS, RA, and Mid-Term Reliability) in an affordable manner.

Ava prioritizes affordability for its customers. The lowered and declining ELCCs paired with Ava's focus on affordability makes it harder for Ava to maintain a balance between purchasing sufficient but not excessive RPS resources and meeting its other regulatory obligations. In effect, Ava must procure more intermittent RPS resources than are needed for RPS compliance or contract with intermittent generation resources that are paired with energy storage.

The Mid-Term Reliability Decision's requirements were incorporated in the structure of Ava's 2022 RFO and 2023 RFO in order to address the incremental capacity and project type requirements of the Mid-Term Reliability Decision and secure Ava's outstanding long-term renewable energy needs with projects that maximize contribution to summer reliability, and zero on-site emissions and the lowest cost to Ava's customers. Projects from these RFO's will add generation that can meet the requirements of the Mid-Term Reliability Decision and at the same time add more long-term renewable generation for Ava's compliance obligations.

D.23-02-040 ("Supplemental MTR Decision"), issued February 28, 2023, established additional IRP-related procurement targets to be met in 2025 and 2026. As the Supplemental MTR Decision was issued so close in time, Ava did not expressly reference Supplemental MTR procurement in its 2023 long-term RFO (issued in March 2023). However, in light of the Supplemental MTR Decision, Ava is actively evaluating its portfolio needs and the potential for delay of any resources that are being relied upon to meet the new requirement.

#### **III.G. RA Procurement Requirements**

Following adoption of the 24-hour RA framework in D.22-06-050 ("RA Decision"), with a test year in 2024 and earnest compliance beginning in 2025, Ava is continuing to consider its portfolio needs for resources that offer operational flexibility throughout the 24-hour period. Ava has not yet identified additional RPS program procurement needs relative to the new Slice of Day program requirements.

#### IV. Assessment of RPS Portfolio Supplies and Demand

#### IV.A. Portfolio Supply and Demand

Ava's solicitations have resulted in expected energy of over 4,000 GWh of renewable generation per year from long-term contracts with new RPS-eligible resources, with almost all resources located in California. All of Ava's RFOs include terms for curtailment rights, and contracts that were executed from the 2020 RFO included paired energy storage to reflect Ava's need for resources with both baseload characteristics and operational flexibility. Ava's 2022 RFO for renewable energy and storage resulted in an executed agreement for a 125 MW storage only facility, contributing to incremental capacity and summer reliability needs for Ava's customers. Ava's 2023 RFO resulted in six executed agreements totaling over 600 MW of renewable generation and including three paired energy storage facilities.

Ava's demand for RPS-eligible resources is a function of state RPS requirements, expected customer load, including additional electric demand from Stockton and Lathrop customers, GHG emission reduction goals, and Ava's internal goal to annually exceed statewide RPS requirements. Over the 2022–2035 assessment time frame included in Ava's 2022 IRP, Ava anticipates that it will need additional renewable resources including solar, wind, offshore wind, and storage resources; additional procurement beyond that described in the 2022 IRP is needed

for both the City of Stockton and the City of Lathrop's inclusion in Ava's service territory. As shown below in

Figure 1, Ava intends to exceed the applicable annual RPS procurement obligations over the 10-year planning horizon; the exact portfolio characteristics selected may vary over time depending on market developments, legislative and policy changes, technological improvements, preferences of the community, or other developments. To manage this future uncertainty, Ava examines and estimates supply and customer demand, and structures its procurement efforts to balance customer demand with resource commitments.

As part of its internal forecasting and procurement process, Ava will continue to consider the deliverability characteristics of its resources (including the expected delivery profile, available capacity and dispatchability attributes, if any, associated with each generating resource or supply agreement) and to review the respective risks associated with short- and long-term purchases. These efforts will lead to a more diverse resource mix, address grid integration issues, and provide value to the local community.

In 2023, Ava provided its customers with approximately 68% RPS-eligible energy,<sup>8</sup> exceeding the statewide requirement of 41.3%. Further, Ava signed agreements for volumes of RPS-eligible resources that substantially exceeded the RPS requirements in Compliance Period 3, ending December 31, 2020, by 2,580 GWh, approximately 19% over the requirement for Compliance Period 3.

Over the 2021–2024 compliance period, Ava's renewable energy position, forecasted in the RNS table, is currently 5,118 GWh above the RPS compliance target and, based on Ava's

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<sup>&</sup>lt;sup>8</sup> For 2023 Ava offered two products to customers in its service area: Bright Choice, which is a minimum of 54% RPS-eligible; and Renewable 100, of which 100% comes from RPS-eligible resources. 68% represents a portfolioweighted average for Ava.

risk-adjusted renewable generation, is expected to meet Ava's internal target, which exceeds state requirements by over 20%. Ava also adds renewable generation to its portfolio from the allocation of RPS energy delivered through the PCIA's VAMO and used for RPS Compliance. Ava includes an estimate for this generation's contribution in the RNS table included with this 2024 RPS Plan. Ava exceeded the state RPS compliance requirement by approximately 27% in 2023.

Ava Board's adopted goal of 100% carbon-free energy serving its demand by 2030, prescribes renewable content targets for each year through 2030 that are revisited annually. The annual targets will have Ava exceeding the state RPS requirement by over 20% each year across the planning horizon. Targets like these will require Ava to continue to invest in renewable projects in addition to relying on the entirety of the VAMO allocation and its participation in the Market Offer.

Figure 1 shows Ava's forecasted and historical annual RPS position over the 10-year planning horizon and reflects both state procurement requirements, Ava's internal procurement targets and contracted renewable generation.

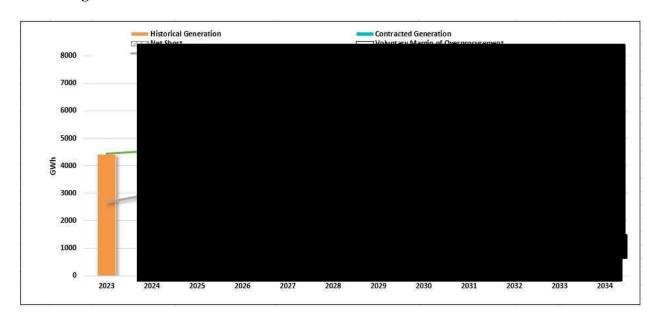


Figure 1. Ava RPS Position from Renewable Net Short Table

#### IV.A.1. Portfolio Optimization

Ava's objective is to best match the expected generation profile of its supply to its electricity demand while considering risk factors such as variability in costs for customers. Ava includes additional details on risk assessment in Section VII.

To identify the optimal mix of resources based on alignment with customer load, Ava models the seasonal hourly aggregated load profiles of its customers under different probabilities to forecast seasonal and hourly load variation on an annual basis. Ava then models the generation profile for existing resources and potential new projects, including the dispatchability of each project. An optimal mix of resources is the one that best aligns the RPS-eligible resources with annual load profiles while also minimizing the number of hours during which Ava's customer load will exceed supply, or supply will exceed demand.

Ava executed long-term contracts during its previous RFOs and had some flexibility to determine its overall portfolio composition. Executed projects from Ava's 2023 RFO account for further integration with its existing long-term resources and alignment with its forecasted annual

and hourly load. As additional RPS resources are considered as part of future solicitations, Ava will continue to model the results of the existing resource portfolio for alignment with current and future customer load.

Ava recognizes its obligation to contribute to grid reliability and the challenges in balancing reliability with ambitious renewable energy goals. As such, Ava also considers the requirements to maintain a reliable California Independent System Operator ("CAISO") system in its optimization analysis. Ava has identified the need to meet system peak and ramping requirements and values resources that can be dispatched or curtailed. Reflecting Ava's commitment to support grid reliability, to date, Ava has executed seven agreements that include installed energy storage paired with RPS-eligible generation and four stand-alone storage resources that will contribute to renewable integration. Ava addresses this topic in more detail in Section IV.C.

As previously mentioned, Ava's 2022 RFO targeted resources meeting the Commission's definition of incremental resources<sup>9</sup> with CODs in the 2023-2026 timeframe to meet Mid-Term Reliability procurement obligations and contribute to RPS compliance requirements. The 2023 RFO sought additional resources with CODs in the 2024–2030 timeframe to contribute to grid reliability, provide RPS energy, and hedge Ava's growing demand. Ava performs quantitative assessment of resources by calculating resources' net present value ("NPV"). NPV is calculated as the resource value equal to the cost of the resource over its contract life (a negative value) plus the forecast energy, RPS, and capacity value contributed by the resource. Ava utilizes forward curves to establish the forward energy value of resources offered to it and incorporates its own view of capacity and RPS value streams into its modeling. The Mid-Term Reliability

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<sup>&</sup>lt;sup>9</sup> As described in CPUC D.21-06-035 or in CPUC D.23-02-040.

requirements were incorporated into Ava's quantitative assessment of RPS resources in the 2023 RFO by *reducing* the capacity value of most RPS resources, consistent with declining ELCCs published by the Commission in the Incremental ELCC Study for Mid-Term Reliability Procurement, dated January 2023.<sup>10</sup>

Ava further increased renewable generation in its portfolio through executed agreements for the allocation from the VAMO process, having participated in both the 2023 PCIA Short-Term Market Offer and the 2023 PCIA RPS Long-Term Market Offer ("2023 LT Market Offer") solicitations for all three IOUs respectively.

The total amount of renewable electricity forecasted for delivery for Ava as part of the executed VAMO and 2023 LT Market Offer transactions is included in the RNS table attached to this report as Appendix B. However, given an industry-wide delay in the issuance of RECs by the Western Renewable Energy Generation Information System ("WREGIS"), and therefore delay in transfer of RECs for the 2023 compliance year, only estimates have been provided in this Draft 2024 RPS Plan.

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

Ava has developed annual targets that exceed the statewide RPS requirement and has committed to offering products that are 100% RPS-eligible or 100% GHG-free to customers and communities who elect to enroll in those programs. In December 2020, Ava's Board adopted a target of providing customers with 100% clean energy by 2030. At its April 2022 meeting, Ava's Board adopted annual renewable targets associated with the 100% clean energy target, which were increased in June of 2022, June of 2023, and again in June of 2024. Ava's 2024 RPS Plan is designed to be consistent with the Board adopted goals for renewable energy. Additionally, as

<sup>&</sup>lt;sup>10</sup> See <a href="https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/20230210">https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/20230210</a> irp e3 astrape updated incremental elcc study.pdf.

shown in Ava's RNS table, Ava includes and plans for a Voluntary Margin of Over-Procurement ("VMOP") of RPS-eligible resources sufficient to exceed state goals.

In the ACR, the Commission requests information on strategies and mechanisms to ensure RPS goals are met. As discussed above, Ava uses a combination of predicting customer energy use and modeling to forecast customer load under different probabilities using risk-adjusted forecasts for both online renewable generation and contracted projects that are currently under development. Additionally, Ava contracts with a balanced portfolio of long- and short-term RPS resources that gives Ava the flexibility to meet and exceed the RPS goals. Finally, Ava conducts regular check-ins with its Board, frequent updates to internal models and forecasts processes, and aligning staffing and solicitation launch timelines with procurement needs.

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

As the ACR notes, SB 350 requires that beginning in Compliance Period 4, 65% of the RPS-eligible generation come from long-term contracts of 10 or more years. Ava's RFOs have addressed some of this need for long-term contracted RPS generation with executed contracts averaging approximately 82% of Ava's long-term RPS compliance requirement through 2032, inclusive of Stockton, using conservative generation estimates that are from each project's Guaranteed Energy Production ("GEP") which is 15–25% lower than the actual expected generation. The online dates of the twenty generation projects Ava has under contract started as early as December 2020, and by 2030 all currently contracted generation is expected to be online. Included in those twenty are Ava executed agreements for seven RPS projects that include paired storage. Ava has contracted an additional four stand-alone storage projects that will contribute to grid reliability.

To date, Ava has seven RPS projects that have come online between 2020 and 2024 and one of the stand-alone storage projects that came online in 2021; all but one of the remaining generation-only projects, and all of the RPS paired with storage projects come online in the timeframe, with the final project coming online in. contracts from Ava's solicitations, Ava has executed an agreement for total available allocation from the VAMO, which includes both the short- and long-term generation, and has executed a long-term generation agreement from the Market Offer, shown in the RNS tables. These contracts will provide in excess of the renewable generation required to meet the SB 350 longterm requirement through the planning horizon, with approximately 7,711 GWh, of generation for Compliance Period 4, Compliance Period 5, and Compliance Period 6 respectively. Additionally, Ava entered into a long term bi-lateral transaction with renewable generation starting in January of 2023 which is reflected in the updated RNS tables. As previously described, Ava's 2023 RFO further addressed reliability requirements and added more long-term renewable electricity.

#### IV.C. Portfolio Diversity and Reliability

The ACR asks LSEs to describe both qualitatively and quantitatively how they consider portfolio diversity and grid reliability in making procurement decisions. As described in more detail in Section X, Ava considers technology type, hourly generation profiles, geography, counterparty concentration, project-specific concentration, development maturity, interconnection or congestion related risk, and operating characteristics, among other factors, as

part of its project selection methodology. Qualitatively, Ava's procurement decisions are informed by several practices that help ensure diverse resources are selected and reliability is maintained:

- Portfolio optimization analysis: Prospective resources are evaluated on a portfolio basis, rather than as individual projects, based on alignment with modeled load and contribution to grid reliability. This analysis is described in more detail in Section X.C.
- Assessment of hourly generation profile: Ava considers RA value and alignment with load in its evaluation of offers. Resources are modeled using their hourly generation profiles across several scenarios and probabilities to help Ava select the resources that can cost-effectively align with load (more detail on Ava's bid selection methodology is provided in Section X). Ava's internal load forecast considers variations in load and load shapes including changes in enrolled customers' energy use behavior and changes due to increased levels of transportation electrification.
- Diversification: Ava also seeks to diversify certain commercial contractual terms to help manage near- and long-term risk. For example, as part of Ava's previous RFOs, it structured contracts with variations related to contract tenor, fixed versus an escalating price, hub-settled versus P-node settled pricing, and a storage project with nameplate capacity declining over the contract term. Additionally, Ava evaluates the individual project's contract term end dates to ensure that there is diversity among its contracted portfolio when the long-term contracts expire.
- Workforce: Ava prioritizes executing contracts for projects that will be developed using local, union workforce and will pay prevailing wages.

Solicitation structure: Since 2019, Ava has requested and evaluated a high degree of
variation in storage offers so that Ava could have a more robust understanding of storage
opportunities, market prices and configurations that are currently available and to
augment our operational experience. Selection of storage offerings favored Local Area
RA, giving these resources a higher value than System RA located outside of Ava's
service territory.

Quantitatively, Ava's Conforming Portfolio developed through the 2022 IRP process provides a helpful assessment of Ava's resource diversity needs and potential pathways to achieve them at least cost. For its IRP filing, Ava modeled portfolio expansion and performance using the analytics platforms Plexos and Gridpath to evaluate all modeling aspects related to capacity expansion, production cost modeling, and local portfolio optimization, including cost performance, reliability, GHG emissions, and criteria pollutant emissions. This analysis helps to inform Ava's quantification of resource diversity benefits by stochastically modeling uncertainty in load, renewable generation, power prices, and basis risk. The resulting probabilistic distribution of costs allows Ava to evaluate diversity benefits under several different realistic future scenarios.

Ava notes that the RPS and IRP planning processes, while separate from procurement decisions themselves, are important tools in the decision-making process. Ava's IRP modeling results have and will continue to inform its approach to soliciting resources that meet renewables integration and reliability needs. To ensure that there is a proper "feedback loop" between actual procurement and forward-looking procurement plans, Ava updated its 2022 IRP baseline to reflect the outcome of its procurement solicitations to date. The results of Ava's 2022 IRP helped inform resource selection during the 2022 RFO; a supplemental, internal IRP analysis which

included Stockton in Ava's load (as described in Table 6) was referenced when shortlisting projects for the 2023 RFO. Ava anticipates that to balance reliability and costs along with its renewables goal, its portfolio will be comprised of a diverse set of resources, including demand response, load shifting, peak shaving, energy efficiency, and storage technologies including hybrid and co-located resources.

#### **IV.C.1.** Transportation Electrification

In developing the transportation electrification load forecast, Ava uses a combination of demographic information such as the number of electric vehicles registered in the communities Ava serves (obtained through a Department of Motor Vehicle data request), these communities' proportional share of the total registered vehicles in the State, and the State's 2030 electric vehicle targets (Executive Order B-48-18), to determine an expected rate of EV registration growth in Ava's served communities.

Ava forecasts light-duty vehicle adoption continues to rise at the average growth rates in new EV registrations and EV sales, with Alameda County seeing an average of nearly 3x the number of EV sales as EV registrations given the concentration of dealerships in the County compared to neighboring areas. For EV registrations, Ava currently projects an average 20%/yr annual increase through 2030, with EVs reaching roughly 50% of the light-duty registrations by 2035. For EV sales, Ava projects average annual increases in both Alameda (averaging to 15%/yr) and San Joaquin Counties (~8%/yr) over the last 5 year until 2030, transitioning to 10% increase per year until EV sales reach 100% of vehicle sales in 2032 (three years prior to California's mandated phase-out of conventional fuel vehicles).

Ava assumes Battery Electric Vehicles (BEVs) add 4MWh of load per annum and Plug in Hybrid Vehicles (PHEVs) add 1MWh of load per annum to Ava's load based on a vehicle

efficiency of 3 miles/kWh and 12,000 miles per year of driving. Ava expects slow but steady growth in M/H Duty EVs in the early years of the Integrated Energy Policy Report ("IEPR") based on the very low starting point in 2023 (39 registered vehicles). Vehicle growth will accelerate with Advanced Clean Fleets and other regulations towards the end of the decade. Ava expects over 10k registrations by 2034 with an average annual usage of 20GWh/yr/vehicle.

Estimating the energy needs for the expected mix of EVs in its service area, Ava calculates the annual energy needs for EVs in its served communities over the forecast horizon. Pursuant to Section 399.13(a)(6)(A) and consistent with D.18-05-026 Ordering Paragraph 3, as noted in the 2023 IEPR (referenced in Form 3), Ava forecasts electric vehicle growth that is aligned with Alameda County's share of the state target of 1.5 MM vehicles by 2025 and 5 MM vehicles by 2030. Energy impacts associated with the increase are taken into consideration with respect to procurement decisions and project selection.

#### **IV.C.2.** Emerging Technologies

Ava is continuously monitoring the costs of existing resources and evaluating new and emerging ones. In its 2022 IRP, Ava specifically assessed the role of out-of-state wind and long-duration storage to complement other renewable resource additions and improve portfolio reliability. Ava expects offshore wind and out-of-state wind may be a valuable contribution to Ava's portfolio, especially in outer years of the forecast, and will continue to assess these options as the costs and viability of each are better understood, including the transmission costs and development timelines.

<sup>&</sup>lt;sup>11</sup> See East Bay Community Energy [now Ava] IEPR Demand Forecast 2023 Form 4, TN#250920-2, at 3 (July 3, 2023) CEC Docket 23-IEPR-02. Available at <a href="https://efiling.energy.ca.gov/GetDocument.aspx?tn=250920-2&DocumentContentId=85845">https://efiling.energy.ca.gov/GetDocument.aspx?tn=250920-2&DocumentContentId=85845</a>.

Ava's 2022 RFO explicitly sought long duration storage resources to contribute to procurement mandated by the Mid-Term Reliability Decision, however none were executed. As part of an existing stand-alone battery storage agreement, Ava amended the agreement to transition an existing 4-hour battery to 8-hour duration; the resource is expected to achieve commercial operation in 2026.

#### IV.D. Lessons Learned

Ava is continuing to refine and improve its procurement practices to achieve organizational goals and contribute to system reliability and emission reduction goals for the state. With a sizeable portfolio of assets under contract and numerous operational RPS generation and storage resources, Ava has experience moving projects from the solicitation to contract execution, through development, and finally to being an online and operational resource. Ava has learned lessons through this process and continues to refine its contract language to help ensure that contracted resources are motivated to be built. In particular, given the supply chain disruptions and project delays that were so common from 2021 through the present, Ava elected to increase the development security posting required in its long-term contracts. Ava now has one of the highest development security obligations in California and recognizes that this financial commitment from developers is among the most effective ways to ensure a contracted resource will be built and achieve commercial operation. As described in Section IV.B.1, Ava has made significant progress towards meeting its long-term RPS procurement requirement through its solicitations, currently averaging approximately 83%. Ava will continue to apply this experience in future solicitations while continuing to procure long-term RPS generation to meet Ava Board approved renewable energy targets.

Another area in which Ava leverages lessons learned and seeks to gain more experience in is joint procurement with other LSEs. In February 2021, Ava joined 7 other CCAs to form a new Joint Powers Authority ("JPA") to procure new, cost-effective clean energy and reliability resources. The JPA allows CCAs to combine their buying power and invest in larger renewable and storage projects under a shared risk mitigation framework, and Ava expects its participation to provide procurement cost savings that can be passed on to its customers. Additionally, the JPA allows CCAs to evaluate other project and contract structures that may not be available to a single CCA. Ava also partnered with San Jose Clean Energy ("SJCE") on both the 2022 RFO and the 2023 RFO, allowing each to leverage their respective skills and experiences to contract long-term agreements effectively and with favorable terms. Ava plans to continue to build on its experience in joint procurement in the 2024 RFO which will be the third joint RFO with SJCE.

#### V. Project Development Status Update

As of the date of this 2024 RPS Plan filing, Ava has entered into 20 agreements with RPS-eligible facilities, with seven having reached commercial operation. These projects are summarized below in

Table 2. The remaining projects are expected to achieve full operation between 2026 and 2030, and together they will collectively provide generation volumes sufficient to serve approximately 35% of the forecasts for retail sales, inclusive of the City of Stockton, and on average approximately 54% of the RPS compliance requirement through 2034, calculated based on the annual volume of energy (in MWh) expected to be generated by each project, as defined in each contract. As previously discussed, Ava does not anticipate a shortfall in complying with RPS obligations as these numbers do not reflect Ava's use of the VAMO resources. Additional

information on these contracts including contract start and end date, expected annual generation, and total contract volume is included in Appendix F.

**Table 2. Project Development Status Summary** 

	Facility Name	Technology Type	MW-ac	Location	Term Length	COD	Network Upgrades Milestone
1.	Scott Hagerty Wind Energy Center (aka Altamont)	Wind	54.80	Alameda County, CA	20 years	Online	Complete
2.	Luciana	Solar	55.83	Tulare County, CA	18 years	Online	Complete
3.	EDPR Scarlet I	Solar + Storage	100.00	Fresno County, CA	20 years	Online	Complete
4.	Rosamond Central Solar	Solar	112.00	Kern County, CA	15 years	Online	Complete
5.	Tecolote	Wind	100.00	Duran, NM	10 years	Online	Complete
6.	Daggett South	Solar + Storage	50.00	San Bernadino, CA	15 years	Online	Complete
7.	Oberon	Solar + Storage	125.00	Riverside, CA	15 years	Online	Complete
8.	Corsac Station	Geothermal	40.00	Churchill, NV	15 years		
9.	Easley I	Solar	75.00	Riverside, CA	10 years		
10.	Easley II	Solar	75.00	Riverside, CA	10 years		

11.	Sunzia	Wind	250.00	Torrance,	15 years	
12.	Sun Pond	Solar + Storage	42.50	Maricopa, AZ	20 years	Complete
13.	Zeta Solar	Solar + Storage	37.50	Merced, CA	20 years	
14.	Imperial Sun	Solar + Storage	100.00	Imperial, CA	15 years	
15.	Rosemary Solar	Solar + Storage	70.00	Fresno, CA	20 years	
16.	Hayward 1	Solar	0.56	Alameda, CA	20 years	Complete
17.	Oakland 2	Solar	0.72	Alameda, CA	20 years	Complete
18.	San Leandro	Solar	1.00	Alameda, CA	20 years	Complete
19.	Tracy 9	Solar	3.00	San Joaquin, CA	20 years	Complete
20.	Tracy 16	Solar	2.00	San Joaquin, CA	20 years	Complete

The above table includes RPS projects that were executed as part of Ava RFOs. As part of the 2023 RFO and DAC-GT and CS-GT RFO, Ava executed eleven new renewable projects that are expected to come online between The generation from these projects will add long-term RPS generation to Ava's portfolio for both the state RPS compliance targets and the long-term requirement from SB 350 through the 2033 planning horizon.

## VI. Potential Compliance Delays

Ava will continue to execute long-term contracts for new RPS generation projects that fit our portfolio and contract for short-term RPS generation with the goal to exceed the state RPS compliance requirements. This is consistent with internal RPS goals that are now established through 2030.



Ava mitigates these risks through strategic growth of our project portfolio and consistent communication with our project developers.

contract that require the project developers to communicate with a governmental authority that has jurisdiction over the delay as one of the requirements to receive delay days in the contract.

When Ava begins our solicitations for new projects, a detailed analysis is performed to assess each project's risks and those projects with lower risk are prioritized, improving the resilience of Ava's overall portfolio.

Ava will continue monitoring the status of its projects in development while monitoring current industry trends to attempt to anticipate and understand project development risks. At the same time Ava will continue to execute contracts for diverse long-term renewable generation to meet both the compliance requirement and the requirements from the Mid-Term Reliability Decision.

#### VII. Risk Assessment

Ava considers a range of risks in developing its RPS portfolio position, as described below.

#### VII.A. Compliance Risk

Ava is currently exceeding the RPS compliance target for the current period and purchasing renewable energy to meet goals established by its Board. As noted in Ava's Implementation Plan and its subsequent RPS Plans, Ava expects to procure

and for each year through

2034, and now has Board adopted targets that reflect that goal (detailed further in Section IV.A, above, and Section VIII, below).

Ava recognizes that there is risk with RPS resources during the development phase due to project delays or failures as well as challenges in equipment procurement, permitting,

interconnection and transmission development. There are also risks with on-line projects due to the potential for increased curtailment of solar and wind resources (as shown in Tables 4 and 5), or other equipment failures or outages. However, Ava's risk of non-compliance with the RPS program currently has a low probability, and therefore a low risk as underperformance of any single contract is mitigated by targeting a higher volume of deliveries overall, and in significant excess of state RPS goals.

For Ava's long-term projects, Ava uses the GEP in both the RNS table and for its internal planning purposes as a conservative forecast of generation. The GEP is 15–25% below the Expected Energy from a specific project, which provides further buffer to the internal targets exceeding the state RPS requirement. Additionally, Ava models generation from both contracted resources and from potential projects when evaluating the portfolio fit, as further described in section VII.B, below. This includes probability and scenario analysis of both load and generation to determine both the minimum amount of generation to understand project and compliance risk exposure and to quantify the maximum generation for coverage of customer load.

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

As noted in Section 399.13(a)(5)(A), and the ACR, generation variability and resource availability may impact the amount of future electricity delivered. Ava considers this potential risk in its forecasting process as well as during the procurement review and decision-making stages. Ava accounts for generation variability risk in its RPS generation forecast by analyzing, through probabilistic assessment, a wide range of potential energy production scenarios due to weather and operating risks and uses the GEP for generation from each project for planning purposes. In addition, targeting a volume of RPS energy that exceeds the requirements of the RPS program further mitigates the risk of lower-than-expected generation. As discussed above,

Ava models the generation from RPS resources based on conservative estimates and forecasts generation and load with both probabilistic and scenario-based analysis. Ava also purchases RPS energy with short-term contracts, one- to two-year terms typically, to account for any reduced deliveries that could be caused by both generation variability of projects and delivery risk for those projects currently under development.

Ava is aware that RPS projects under construction have risks during the development period that could affect the contracted COD and have additional risk to the available generation after the projects are online. In addition to the mitigation strategies described below in Table 3, Ava has included a failure rate of 2% on the RNS tables for the RPS facilities that are currently online and generating renewable energy beginning in the 2024 reporting year and this is applied to the generation from VAMO that is included in the RNS tables as well. The 2% failure rate for online generation combined with the use of the GEP in the RNS tables is included as a reasonable action to account for the risks that could affect available generation from Ava's contracted RPS projects that are online.

#### VII.C. System Reliability

Ava considers its contribution to system reliability when selecting resources for its portfolio. As discussed in Section IV.C, Ava aims to avoid overreliance on any single technology type or resource concentration located in the same geographic region to mitigate the impacts of localized curtailment to Ava's portfolio. To maximize alignment with customer demand, the forecasted generation profiles of individual projects are modeled together and matched against Ava's forecasted hourly load. Ava has also invested in both stand-alone storage and energy storage paired with RPS resources as part of its renewable portfolio to provide increased reliability and renewable integration services. Ava currently has seven paired solar plus storage

resources under contract which will collectively include of storage capacity, with 167.5 MWs already online and the remaining

As part of previous RFOs, Ava executed agreements for four stand-alone energy storage contracts with 285 MW of collective storage capacity. Ava has also executed Resource Adequacy-only contracts for incremental resources through previous RFOs and bilateral negotiations.

As part of the 2022 IRP Ava evaluated its preferred portfolio's contribution to system reliability, both in relation to meeting its projected RA obligations on an annual and monthly basis as well as quantifying and limiting its reliance on the spot market.

#### VII.D. Lessons Learned

Ava has incorporated additional risk factors into its Risk Assessment as lessons learned from the recent history of contracting renewable generation, soliciting, and executing long-term RPS project agreements, and modeling customer load. In 2022, Ava hired a credit risk manager with extensive risk analytics and management experience in wholesale energy market transactions to further mitigate contracting risk. Another change Ava made was to create more standardized agreement language, which was used during previous and current RFOs, and insists on stronger damage provisions in form agreements on long-term projects. This includes increasing the amount of development and performance security that Ava holds for projects when compared to Ava's first RFO in 2018 to incentivize developers to stay on track with development of their projects under executed contracts. Ava holds developers to a high standard for compliance with RA contract provisions and has received feedback from counterparties that its contractual approach to RA damages (i.e., the damages developers must pay to Ava if their

projects fail to deliver contracted RA volumes) is among the most stringent in the market. Lastly, Ava models generation for our executed renewable contracts under different probabilistic conditions to measure and track portfolio risk from our online and upcoming long-term RPS projects.

In previous procurement processes, Ava has also experienced challenges within the process and timeline of negotiations and actual deal execution. The process risk can result from counterparties changing key deal terms, or when situations arise within the negotiation timeframe that can cause deals to fail thus negatively impacting Ava's portfolio plans. As such, a more clearly defined negotiation or exclusivity period that is adhered to by both buyers and sellers can help decrease procurement process related risks and Ava will incorporate this strategy into future procurement processes.

Ava has incorporated additional scoring metrics to account for interconnection related risks for projects that are anticipated to be online within or after Cluster 15 under CAISO's interconnection process. This is a result of changing regulatory and process rules as per the CAISO that encourages buyers to take a closer look at project status, viability and experience which can be challenging when buyers also have the need to ensure their respective costs, budgets and rates can be sustained in the near and longer term when a new project agreement is acquired.

In addition to the above, Ava recognizes that there are still risks associated with its contracts and further assesses the probability of missing its renewable energy goals due to several factors, described in more detail below in Table 3. Table 3 was first presented to Ava's

Board and is regularly updated and reproduced here.<sup>12</sup> It includes information on Ava's mitigation strategies for risks associated with lower-than-expected generation, resource availability (project performance risk) and compliance delays (development & counterparty risk).

Table 3. Key Project Risks and Mitigating Actions

	Risk	Description	Mitigation			
1.	Development & Counterparty Risk	Project encounters issues with development milestones, local opposition, equipment sourcing or financing	<ul> <li>Projects selected based in part on qualitative due diligence related to development risk.</li> <li>The anticipated project portfolio reflects a diverse mix of counterparties, projects, and development risk.</li> <li>Developers for selected projects are required to post development security at contract execution to Ava in event of default, or for damages for missing COD.</li> <li>The development security has been increased further as part of the 2022 RFO.</li> <li>Regular reporting will track development progress.</li> <li>Monitoring for supply-side project disruptions.</li> </ul>			
2.	Project Performance Risk	Projects do not perform due to project-related issues or poor weather conditions	<ul> <li>Idiosyncratic project issues should be addressed through project/counterparty posted operation security and performance related requirements, such as guaranteed energy production.</li> <li>Developers for executed projects are required to post a performance security to Ava where Ava can collect damages for continued underperformance.</li> <li>Modeling of solar irradiation is completed looking at robust historical data and a wide forecast of potential future outcomes for solar projects.</li> </ul>			

<sup>&</sup>lt;sup>12</sup> The table has been updated since its original presentation to the Board to reflect new or emerging risk exposure. The original table, titled "Oakland Clean Energy Initiative and CA Renewable Energy RFP Overview" was presented at Ava's Board of Directors Meeting and Retreat, June 5, 2019. Available at <a href="https://res.cloudinary.com/diactiwk7/image/upload/ebce">https://res.cloudinary.com/diactiwk7/image/upload/ebce</a> retreat packet 6 5 19-1.pdf.

	Risk	Description	Mitigation
3.	Financial Risk	Actual financial profile of proposals deviates from expectations as a reflection of macro energy market characteristics	<ul> <li>Projects evaluated and modeled against multiple benchmarks, including historical market data and forward scenarios both internally and by third party consultant. Forward scenarios include a wide range of market conditions and result in probabilistic financial profiles.</li> <li>The anticipated project portfolio reflects a diverse mix of project locations and technology that includes RPS resources paired with storage, solar, wind, geothermal and stand-alone energy storage for reliability.</li> </ul>
4.	Congestion / Basis Risk	Transmission constraints degrade the value of power Ava is purchasing during the term of the agreements	<ul> <li>Quantifying forward congestion can be challenging. Ava interviewed multiple consulting firms to understand possible treatments. Project financial profiles include recent historical data to reflect current market dynamics.</li> <li>The load Ava serves provides partial offset to potential congestion.</li> </ul>
5.	Load Management Risk	Ava load reductions based on customer departures, increase in distributed energy resources, direct access, energy efficiency, population decline, etc.	<ul> <li>Detailed management of load forecasts into the future.</li> <li>Total MWhs procured through solicitation is forecasted to be approximately 34% of annual sales.</li> </ul>

#### **VIII. Renewable Net Short Calculation**

Ava has provided a quantitative assessment to support the qualitative descriptions provided in this 2024 RPS Plan in the RNS Table which is attached as Appendix B. The information provided in Appendix B includes generation from executed contracts and the VMOP amount that reflects Ava's Board adopted internal RPS targets. These targets and the related VMOP amounts have been updated for this 2024 RPS Plan to reflect the Board-adopted annual renewable targets that were approved most recently in June 2024 and that are linked to the

Board-adopted clean energy goal by 2030. Ava has already achieved compliance with state RPS program requirements through the previous compliance period with a margin of 2,580 GWh or approximately 19% of RPS generation over the state RPS requirement and exceeded the 2023 RPS target by approximately 27%. Ava anticipates meeting its RNS Net RPS Procurement needs in current years and throughout the planning horizon, but as noted in Sections VI and VII, Ava has undertaken a number of steps to mitigate project development and compliance risks.

Ava's assessment of its RPS position begins with modeling to produce a forecast of its annual retail sales primarily based on historical customer energy use by customer type and consistent with the Electricity Demand Forecast submitted to the California Energy Commission ("CEC") in support of the 2023 IEPR. <sup>13</sup> Assumptions for load growth, energy efficiency, behind-the-meter solar photovoltaic, and electric vehicle penetration are internal to Ava and based on assumptions of customer adoption and program roll-out. Ava's load forecast reflects internal assumptions about customer opt-out rates based on historical data. Ava develops its generation forecast based on firm contracted short-term agreements and GEP from projects with executed agreements that are currently under development and those in early contract years. Ava also applies a "GEP reduction" to all VAMO generation to conservatively mitigate any variability in expected generation. The portion of the RNS Table displaying "Risk Adjusted RECs from RPS Facilities in Development" uses both the GEP which is typically 15% lower than the projects' expected energy and has an additional 5% reduction applied to the generation as the forecasted failure rate for facilities in development which is discussed in more detail in Section IX.A below.

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<sup>&</sup>lt;sup>13</sup> See East Bay Community Energy [now Ava] IEPR Demand Forecast 2023 Forms 1-3, TN#250920-1 (July 3, 2023), EBCE IEPR Demand Forecast 2023 Form 4, TN#250920-2 (July 3, 2023) and EBCE IEPR Demand Forecast 2023 Form 8, TN#251520 (Aug. 7, 2023), CEC Docket 23-IEPR-02. Available at https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-IEPR-02.

# IX. Minimum Margin of Procurement (MMoP)

Ava's renewable procurement efforts are guided by the forecasted need for renewable energy based on customer load forecasts and the Board-adopted renewable targets described in Section IV, which have historically exceeded the State's RPS requirements by 15% on average, and are forecasted to be 23% above in 2024. In April 2022 the Board adopted annual renewable targets through 2030 to further guide Ava's long-term renewable energy purchases. These targets, increased further in 2023 and 2024, illustrate both a path to reaching carbon-free electricity by 2030 but also an aggressive commitment to providing renewable electricity to customers well above the state's RPS targets. This effort is observed in the renewable targets and associated VMOP amount through 2034 where Ava targets renewable energy purchases exceeding the state requirement by over 20% for each year in the planning horizon. Ava's VMOP represents the difference between its Board-adopted targets for renewable energy for each year and the RPS requirement.

#### IX.A. MMoP Methodology and Inputs

To establish its MMoP, Ava incorporates project risks and conservative generation forecasts to mitigate the risk that planned RPS projects are delayed or canceled. Ava considers several project development risks and performance failures, as described in Section VII when making future renewable procurement decisions. Ava evaluates project risk through a diversified approach during project selection where Ava devalues projects with perceived high development risks, attempting to remove projects prior to short-listing that have a high potential for project failure or delay issues. Ava's power purchase agreements ("PPAs") include damage payments made by seller to Ava for COD delays; this incentivizes the seller to incorporate realistic online dates. As part of the 2022 RFO, Ava further increased the amount required of developers for the

development security; the same high collateral requirement was in place for the 2023 RFO and will be included in the 2024 RFO. Ava will continue to target RPS purchases above the state RPS requirement and as noted in Section IV.A, Ava in 2023 exceeded the RPS requirement by 27% and exceeded the Compliance Period 3 requirement by approximately 19%. Ava's existing contracts are forecasted to already exceed the Compliance Period 4 requirement by approximately 15%.

In addition to this qualitative risk mitigation approach, Ava applies a quantitative factor to RPS procurement as MMoP intended to ensure that Ava's RPS procurement is in excess of the state requirement. The MMoP and the qualitative measures discussed above are used to address the failure rate for renewable projects that are in development, while Section VII addresses the risk adjustment for online renewable generation in Ava's portfolio.

The Commission establishes a 5% MMoP as a requirement in the RNS table; Ava has adopted this as standard and applies a 5% MMoP per year to generation from projects that are under development over the planning horizon. Ava believes that this margin, when combined with the use of GEP for the energy forecast for projects under development, will sufficiently mitigate the risk of non-compliance associated with project delays or performance failure.

#### **IX.B.** MMoP Scenarios

Currently, Ava has twenty renewable energy contracts for projects in different stages of development or online under executed agreements from previous RFOs and bilateral negotiations. When determining the contribution of the above projects to Ava's renewable generation requirement for both the 2024 procurement cycle and Compliance Period 4, Ava uses the GEP which is a conservative estimate of the facilities' generation, typically 15% below each project's expected energy production. Ava also models project level generation and customer

demand for forecasting under different probabilities and conducts sensitivity and scenario analysis as part of its IRP process. This includes Ava's portfolio modeling which simulates load and generation stochastically and on an hourly basis. As discussed in Section IV, the modeling informs Ava's RPS procurement activities and decision-making while some of the generation risk is mitigated by using the projects' GEP and applying an additional MMoP risk adjustment to that generation in the RNS tables. Ava's scenario analysis captures fundamental uncertainty and risks; therefore, Ava does not vary the 5% MMoP annually but forecasts its position based on expected variations from other factors over the planning horizon.

## X. Bid Solicitation Protocol, Including Least-Cost Best-Fit (LCBF) Methodologies

Ava's offer solicitations from previous RFOs included an overview of the solicitation process and schedule. The 2024 RFO has similar guidelines, with more emphasis on resources that complemented our existing portfolio and more targeted towards the requirement for reliability that includes specific technology types and storage variation. Furthermore, the 2024 RFO will focus on how projects handle interconnection and each project's interconnection status, project costs and viability. Ava's 2024 RFO protocol and *Pro Forma* Agreement will be finalized over the summer of 2024, prior to an anticipated Q3 RFO launch and will be included in forthcoming updates to this 2024 Procurement Plan as an Appendix D and Appendix F, as described in more detail below. While Ava does not apply the formal LCBF methodology to its offer selection process, Ava has engaged with multiple external consultants to assist in modeling to identify its least-cost portfolio and optimize resource selection, including during its 2022 IRP. On a regular basis, Ava refines the underlying methodologies within these models and updates the market assumptions to reflect the latest information on project economics and market conditions. Ava's bid selection methodology is described in more detail below.

For the 2024 RFO in development, Ava is seeking contracts of 10 to 20 years in duration, for long-term resources online between 2026 and 2034 to add incremental capacity, long-term clean energy hedges, and RA to contribute to Ava's RPS requirement and IRP obligations.

Additionally, the 2024 RFO is targeting resources that provide the full array of energy products (i.e., Resource energy capacity, RECs, carbon free and emissions reducing energy) Ava needs and to ensure compliance with the Supplemental Reliability Requirements from the Commission. The 2024 RFO is focusing on projects located in the state of California or interconnected within a California Balancing Authority including out-of-state projects interconnected using dynamic schedules or pseudo ties and any newly available maximum import capability. Ava will continue to prioritize generation from projects within Alameda County and San Joaquin County. All relevant solicitation materials are posted on Ava's website at https://avaenergy.org/solicitations/.

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

This section is not applicable to CCA's and further, Ava does not have any planned sales of RPS products. If necessary, Ava may consider selling limited volumes to balance its portfolio in the future.

#### X.B. Bid Selection Protocols

Ava seeks to secure the best portfolio of contracts to provide our customers with affordable renewable energy sources, create new in-state renewable energy projects, and drive job creation throughout California and community investment in Alameda County and San Joaquin County and throughout Ava's service territory. Ava issued all of its RFOs with these goals in mind. The RFOs were broad, competitive solicitations designed to ensure that a wide range of opportunities would be considered for renewables, renewable energy-plus-storage resources and stand-alone energy storage.

Ava has executed agreements for over 1200 MW of RPS-eligible technologies and an additional 700 MW of storage from its previous solicitations. Offers are assessed according to many factors, both quantitative and qualitative, including:

- Net Present Value of the resource.
- Economic and financial risk, including project correlation within a portfolio.
- Assessment of fixed vs. floating price, contract duration, settlement structure, CAISO zone, RA deliverability, and storage options.
- Portfolio fit.
- Contributions to reliability requirements.
- Project development risk, including site control, interconnection, permitting, and study status.
- Environmental Impacts, and development area.
- Workforce commitments related to prevailing wage, union participation, and local community investment.

Counterparty experience developing and financing projects, including status as a project owner.

#### X.C. LCBF Criteria

While Ava does not apply the formal LCBF methodology to its offer selection process,

Ava does consider cost and portfolio "fit" in its offer evaluation and selection process. Offers are
evaluated as part of a potential portfolio rather than individually. Starting with an initial list of
portfolio attributes (including generation volume, commercial operation date, settlement
locations, generation types), Ava combines offers into a portfolio and evaluates them according
to the following portfolio optimization and scenario analysis method:

- The hourly wholesale value of the electricity generated (relative to the contract price) is evaluated under a range of market conditions. Scenarios consider uncertainty in renewable generation, storage penetration, policy changes, power prices, and basis risk.
- The resulting hourly cash flows are summed to illustrate the range of potential cash flows in every month and year of the contract.
- Ava selects the portfolio of projects that provides the best economic value while also satisfying our qualitative criteria. Qualitative criteria include portfolio diversification, fit to load, project location and potential economic and environmental benefits to communities in Alameda County with a focus on disadvantaged communities.

This process may change over time as additional resources are added to Ava's portfolio.

### **XI.** Safety Considerations

Ava holds safety as a top priority. Although Ava does not own, operate, or control generation facilities or transmission/distribution assets, Ava does require industry-standard safety protocols in the construction and operation of projects with which it signs agreements.

Contractors and sub-contractors are also required to provide safety-related reporting, such as incident reporting, logs, and training. Ava describes additional actions to reduce the safety risks posed by its renewable resource portfolio below.

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

Because Ava does not own, operate, or control generation facilities, or transmission/distribution assets, its renewable procurement activities have limited impact on wildfire risks and vegetation management. However, Ava recognizes the increased risk of wildfires caused by climate change, and the importance of prudent operations to mitigate this risk. As noted above, Ava requires industry standard safety protocols in the construction and

operation of projects with which it signs agreements. Ava's *pro forma* contract<sup>14</sup> requires facilities to 1) comply with Prudent Operating Practice relating to the operation and maintenance and 2) take reasonable safety precautions with respect to the operation, maintenance, repair, and replacement of the Facility. Prudent Operating Practice is defined as:

"Prudent Operating Practice" means (a) the applicable practices, methods and acts required by or consistent with applicable Laws and reliability criteria, and otherwise engaged in or approved by a significant portion of the electric utility industry during the relevant time period with respect to grid-interconnected, utility-scale generating facilities with integrated storage in the Western United States, or (b) any of the practices, methods and acts which, in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Prudent Operating Practice is not intended to be limited to the optimum practice, method or act to the exclusion of all others, but rather to acceptable practices, methods or acts generally accepted in the industry with respect to gridinterconnected, utility-scale generating facilities with integrated storage in the Western United States. Prudent Operating Practice includes compliance with applicable Laws, applicable reliability criteria, and the criteria, rules and standards promulgated in the National Electric Safety Code and the National Electrical Code, as they may be amended or superseded from time to time, including the criteria, rules and standards of any successor organizations.

Ava also considers project location its selection criteria and may rank a project lower because of its location within a high wildfire risk area.

#### **XI.B.** Decommissioning Facilities

Ava does not own, operate, or control generation facilities, or transmission/distribution assets, but instead contracts with facility owners and power marketers to procure renewable energy. Currently, Ava's Board has not passed policies regarding facility decommissioning, however Ava's *Pro Forma* requires sellers to comply with the law and Prudent Operating Practice with regards to the safe disposal and recycling of facility equipment while under contract.

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<sup>&</sup>lt;sup>14</sup> Exact terms and definitions in Ava's contracts are subject to changes due to contract negotiations and efforts to align with the most recent industry language.

## **XI.C.** Climate Change Impacts

Ava is committed to taking bold action to fight climate change while addressing the needs of our community. To demonstrate this, Ava's Board has approved a policy to set a target of providing its customers with 100 percent clean energy by 2030. Ava also has an internal goal to annually exceed the statewide RPS requirement and it is committed to offering products that are 100% RPS-eligible to customers who elect to enroll in such program in advance of achieving its 2030 target.

Ava also considers project location in its selection criteria and may rank a project lower because of its location within an area with poor climate change adaptation characteristics.

## XI.D. Impacts During Public Safety Power Shut-Off ("PSPS") Events

Ava is engaging in a variety of efforts to support enhanced community resilience in the face of increased PSPS events or other unpredictable events that threaten customer access to electricity. We are committed to investing in resources that increase deployment of solar and/or battery energy storage systems to enable residents, businesses, and our local government partners to retain essential power supply during a grid outage. Ava's efforts have been prioritized to focus on solutions for critical municipal facilities and its most vulnerable customers including low-income residents and DACs, and those with electricity-dependent medical conditions. For example, Ava has worked through a Bay Area Air Quality Management District Climate Protection grant to 1) identify critical municipal facilities designated to serve the community in time of emergency/grid outage, 2) assess the potential for solar and battery energy storage system deployment, 3) size resilience systems, and 4) develop a procurement pathway that reduces the cost and complexity of project development. As an outcome of this work, Ava issued

<sup>&</sup>lt;sup>15</sup> See <a href="https://avaenergy.org/news-and-events/east-bay-community-energy-commits-to-100-clean-energy-by-2030/index.html">https://avaenergy.org/news-and-events/east-bay-community-energy-commits-to-100-clean-energy-by-2030/index.html</a>.

a Request for Offers to build solar and battery energy systems at sixty-one critical municipal facilities in Berkeley, Emeryville, Fremont, Hayward, Oakland, Pleasanton, Livermore, and San Leandro in 2023. These sixty-one sites represented 10.2 MW of solar PV and 20.7 MWh of battery energy storage. Ava successfully pursued congressionally directed funding for this work. Ava is now pursuing Department of Energy funding for grid and community resilience to scale this program up.

Ava also initiated a program called Resilient Home that provided free quotes for solar and battery backup systems to homeowners, and through its partner Sunrun offered a \$100-\$1250 rebate to customers that installed a back-up system. In order to support vulnerable communities, Ava required that at least 20% of the installations be for low-income residents, medical baseline customers, and residents located in DACs. The program also helps support grid reliability during times of normal operation by providing Ava with access to stored energy when demand is high. Ava has delivered up to 2 MW of Load Modification via this program, from over 1,000 Ava customers' solar and storage systems. The Resilient Home fleet delivered 18 MWs of energy into California's grid during 2023 peak demand hours of 4–9 p.m.

#### XI.E. Biomass Procurement

Like all RPS products Ava does evaluate biomass resources, but currently these resources have only been procured as short-term REC purchases from either a portfolio of resources or more recently, as part of an RPS Energy Sale Solicitation from an existing resource. The expensive nature of the resource, the lack of known or planned biomass facilities, and potential increased air pollutants in Ava's service territory especially in light of Ava's Board adopted goal of 100% carbon-free energy serving its demand by 2030, make biomass an unlikely candidate for near-term or future contracting. While considered carbon neutral in California emissions

accounting, biomass produces significant pollutant emissions when combusted. Ava seeks to balance the increase in harmful pollutants caused by including biomass generation in its portfolios with the desire to demonstrate a balanced, diverse, and reliable portfolio. Finally, while opportunities for biomass contracting are limited, Ava does receive a share of these resources that IOUs are directed to procure through its Cost Allocation Mechanism allocation.

## XII. Consideration of Price Adjustments

Consistent with SB 350, Ava reviews the prospects of incorporating price adjustments in contracts with online dates more than 24 months after the date of contract execution. As noted in the ACR, such price adjustments could include price indexing to key components or to the Consumer Price Index. Additionally, sellers may offer escalation factors in their prices. Current contracts resulting from Ava's previous RFOs do have damage costs due from the seller to Ava for project delays resulting in a later COD than specified in the agreement including in some instances providing replacement costs for product delivery deficiencies.

#### XIII. Curtailment Frequency, Cost, and Forecasting

This section responds to the topics presented in section 6.13 of the ACR and describes Ava's strategies and experience so far in managing exposure to negative pricing events, overgeneration, and economic curtailment for Ava's region and portfolio of renewable generation resources.

# XIII.A. Curtailment Frequency, Cost, and Forecasting

Due in large part to the rapid increase in the amount of wind and solar generating facilities that have been brought online across the western United States, the CAISO balance authority area has experienced an increasing frequency and magnitude of curtailment and negative pricing events. As of 2022, the California Energy Commission reports California's

utility-scale generation included 40,494 MW of solar and 13,938 MW of wind, in addition to behind-the-meter distributed renewable generation. <sup>16</sup> This increased capacity results in discrete periods where the majority of load in the CAISO is served by solar and wind resources. In March of 2023, the average percentage of renewables serving load was 33.7%. In the same month, the maximum 5-minute percentage of renewables serving load was 103.5%. Lastly, March saw a total of 571,590 MWh of economic solar generation curtailed. <sup>17</sup> To address the resulting instances of over-supply, the amount of curtailment of wind and solar in the CAISO has significantly increased each year, totaling 187 GWh in 2015, 308 GWh in 2016, 358 GWh in 2017, 461 GWh in 2018, 961 GWh in 2019 and 1,587 GWh in 2020. <sup>18</sup> As of the end of March 2021, the total curtailment of solar and wind to was already over 542 GWh. Curtailment is typically the highest during the months of March, April, and May when hydroelectric generation is historically at its highest and load on the electricity system is low.

Ava evaluated curtailment analyses as part of its 2022 Integrated Resource Plan going out to calendar year 2030. The analysis as part of the IRP indicated that in the absence of storage, solar curtailment would continue to increase in the outer years of the study period. However, with the additional storage, either paid with solar or standalone, the curtailment numbers for solar and wind drop significantly. Ava's most recent modeling of prices through 2030, conducted after the submittal of the IRP, shows that, on average, forward energy prices have been elevated given recent weather events and general concerns over supply. This increase in forward prices translates to higher mean prices which leads to a lower number of negative prices simulated for

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<sup>&</sup>lt;sup>16</sup> See <a href="https://www.energy.ca.gov/sites/default/files/2023-08/Total\_System\_Electric\_Generation\_2009-2022">https://www.energy.ca.gov/sites/default/files/2023-08/Total\_System\_Electric\_Generation\_2009-2022</a> with totals ada.xlsx.

<sup>&</sup>lt;sup>17</sup> CAISO, Monthly Renewables Performance Report (Mar. 2023) Available at <a href="https://www.caiso.com/documents/monthlyrenewablesperformancereport-mar2023.html">https://www.caiso.com/documents/monthlyrenewablesperformancereport-mar2023.html</a>.

<sup>&</sup>lt;sup>18</sup> CAISO, Managing Oversupply, Wind and Solar Curtailment Totals (updated May 5, 2020). Available at <a href="http://www.caiso.com/informed/Pages/ManagingOversupply.aspx">http://www.caiso.com/informed/Pages/ManagingOversupply.aspx</a>.

the first half of the next 10 years. Starting in 2027 and beyond, negative prices are expected to return with an average of 180 hours of negative events per year.

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

Ava recognizes that the risk of overgeneration and negative pricing, particularly at midday, increases as solar penetration increases. Ava's analysis of day-ahead and real-time Locational Marginal Price ("LMP") trends over time confirms that the number of negative pricing events have indeed increased. Of concern is the occurrence of negative pricing events in the day-ahead markets. Table 4 below shows the annual number of day-ahead and real-time price intervals that settled below \$0 at the DLAP PG&E price node. Overgeneration in real-time markets is historically somewhat common, because it is a function of weather and unknown factors. The occurrence of negative pricing events in the day-ahead market through 2023 meanwhile, suggests that there was a steady oversupply of resources on the CAISO system.

Ava's analysis of forecasted negative pricing events over the next 10 years indicates that, given the current forward prices which are elevated from historical, there will be near zero negative pricing events through 2027. This is further illustrated by the forecasted increase in the number of hours per year of negative pricing starting in 2027 shown in Table 4 and Table 5.

Table 4. Day-ahead and Real-time LMPs: Count of Negative Pricing Events

Year	Count of Day Ahead Negative Prices	Count of Real Time Negative Prices
2016	0	547
2017	106	1,468
2018	83	494
2019	118	920
2020	31	797
2021	14	542
2022	23	683
2023	116	1,021

**Table 5. Number of Hours Per Year of Negative Pricing** 

Year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Hours	0	0	13	163	158	139	271	192	194	180	150

Ava simulates volatility in forward energy pricing using third- party provided price forecasts to inform its project evaluations. Additionally, Ava uses several forward curves that represent different underlying scenarios to model the exposure of its existing and potential future resource portfolio to negative pricing that extends beyond the 10-year planning horizon.

Currently, Ava has four long-term generation resources on-line; Ava manages potential exposure to negative pricing in several ways across the planning horizon:

- Energy storage procurement: As described above, Ava sought cost-effective offers for renewables projects paired with energy storage and stand-alone energy storage as part of each RFO. From these, Ava has three executed RPS contracts that include battery storage and another four executed contracts for stand-alone storage projects.
- Resource diversification: Ava aims to avoid overreliance on any one technology type or geographic concentration, as demonstrated by its practice of evaluating offers as part of a portfolio and according to how they align with hourly demand. The benefits of resource

diversification can be achieved through both technology and contract structures; Ava has relied on both strategies in its procurement practices. In addition to Ava's portfolio of wind, solar and solar paired with storage, Ava has executed a contract for geothermal energy.

- Settlement location: Ava has signed agreements for projects with pricing that is PG&E
   DLAP hub-settled instead of p-node settled. Since hub settlement is an aggregation of
   multiple nodes, it may provide some protection from events at any single node. Hub
   settlement helps insulate Ava customers from basis risk associated with congestion-based
   negative pricing events at the p-node level.
- Contract provisions: Ava includes in its contracts a "curtailment cap" provision equal to 50 hours multiplied by a project's installed capacity. This provision allows Ava to curtail resources during negative pricing events, up to the established cap, without any financial impact. Curtailment caps help insulate Ava customers from negative pricing.

  Additionally, Ava has a right to curtail further beyond 50 hours with the requirement to compensate the seller.
- Ava's scheduling coordinator, Northern California Power Agency ("NCPA"), has the
  capability to perform production cost analysis based on various input assumptions to
  derived hourly market prices for energy and ancillary services. NCPA can simulate
  economic commitment and dispatch used by the CAISO day-ahead process to simulate
  economic curtailment and simultaneously optimize energy dispatch across the CAISO
  grid.

Ava will continue to evaluate the impacts of negative pricing over a rolling 10-year time frame and work with NCPA to ensure that the forecasts are updated regularly for the CAISO and

Western Electricity Coordinating Council region when evaluating potential renewable projects. Additionally, Ava will continue to evaluate the risks from negative pricing for current contracted renewable resources over the 10-year planning horizon. Ava's most recent quantitative analysis has forecasted a decrease in the number of zero or negative pricing events (i.e., the mean forecast) in the first half of the 10-year planning horizon as prices remaining elevated in the near time and this is in line with the general trend for public forecasts of CAISO system conditions. In evaluating these risks, neither Ava nor NCPA feel that there is a significant risk to Ava's portfolio of renewable resources. Ava will continue to use the tools discussed above to mitigate the impact of negative pricing on Ava's portfolio of renewable resources and will evaluate negative price risk when evaluating new projects as Ava continues the planning to meet our Board-adopted renewable energy goals.

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

Ava is still building out its portfolio of long-term renewable energy projects and currently has seven projects that are online,

Our first project, having come online in late 2020, is a hub settled agreement where Ava purchases energy that is delivered to the CAISO grid but financially settled at the PG&E DLAP. This settlement arrangement, as discussed above, greatly reduces Ava exposure risk to negative market pricing as the netting process in this structure would result in a lower payment from Ava for times that the project's Pricing node (P-node) is negative or zero. Two projects came online in 2021, one that reached COD in December 2021and is settled as an index price structure where there is no risk to Ava from negative pricing at the P-node.



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

Ava has not incurred significant direct costs to date due to incidences of overgeneration and associated negative market prices due to the contract structure of three of our online projects. The fourth project that is settled at the projects P-node has had curtailment but as of this report that amount is still below the curtailment cap of the agreement. Ava and NCPA will continue to evaluate our current online projects and manage and continue to have diversity in project settlements to mitigate negative market pricing and over-generation.

# XIV. Cost Quantification

Pursuant to the ACR, Ava has quantified the costs of its existing procurement activities using the Commission's Cost Quantification template and has included them in Appendix C. As

discussed throughout this document, Ava does have several long-term RPS contracts resulting from its RFOs and the geothermal project executed bilaterally that are included in the Cost Quantification template. VAMO generation has been included in the Cost Quantification tables using a price proxy given the uncertainty around what the Market Price Benchmark ("MPB") will be in future years. Given the industry-wide delay in the issuance of RECs by WREGIS, and that Ava has not received all of its 2023 RECs to date, only cost estimates that are based on estimated generation have been included in this Draft 2024 RPS Plan.

### XV. Coordination with the IRP Proceeding

Ava supports increased coordination and consolidation between the RPS and IRP proceedings. Alignment between the two proceedings improves administrative efficiency and makes practical sense; LSEs like Ava need to plan for additional resources to meet both RPS and GHG emission reduction goals. Ava strives for consistency between its IRP and RPS procurement plans, however the different timelines for reporting requirements under these two proceedings may result in deviations between the information in the 2022 IRP filing and this 2023 RPS Plan. Changes to RPS contracts that have occurred since Ava filed its IRP in September 2022 are reflected in this 2023 RPS Plan and summarized in Table 6 below. Moving forward, Ava supports consolidation between the RPS and IRP filing requirements to reduce administrative burden on LSEs and Commission staff, as well as ensure comprehensive and consistent information sharing.

Table 6. Alignment of IRP and RPS Planning

IRP Section Subsection	RPS Alignment in IRPs		
III. Study Results	As part of its 2022 IRP filing, Ava submitted a single		
	Preferred Conforming Portfolio that achieves a lower than		
A. Conforming and Alternative	its expected share of both the 30 and 25 MMT GHG target		
Portfolios	benchmarks. Under the single portfolio, Ava's currently		

contracted RPS resources are included and new resources are added to the portfolio to achieve the relevant GHG target as well as RPS procurement requirements, including the 65% long-term contracting requirement. Description of Conforming Portfolio: Portfolio that achieves lower than Ava's proportional share of both a 30 and 25 MMT statewide GHG target o Portfolio includes 540.3 MW of RPS resources (442.8 MW of solar, 40 MW geothermal and 57.5 MW of wind) that Ava has contracted with. The online dates of these resources are reflected in Ava's Portfolio. o Greater preference for wind over solar due to higher assigned ELCC factors. • Ava does not plan to contract with any long-term existing resources by 2030. The new RPS resources that Ava plans to invest in by 2030 include approximately 987 MW of wind and 205 MW of solar. To ensure compliance with its GHG and RPS targets, Ava plans to rely on GHG-free and RPS-eligible resources to the extent possible while contributing to reliability requirements and maintaining affordability. Ava's compliance with the IRP incremental procurement obligation required by D.19-11-016 will be met through a mix of resources currently under contract and in negotiation. The contracted set of resources is comprised of a total of 13wind, solar, geothermal solar-plus-storage, and stand-IV. Action Plan alone storage resources. A. Proposed Activities Ava's 2023 RPS RFO was developed and informed by a supplemental analysis to its IRP Study. Ava's 2022 IRP filing could not include the City of Stockton's demand in the Preferred Conforming Portfolio as the approval for inclusion in Ava's service territory took place shortly after modeling for the IRP was complete. The RFO solicited resources that address needs in Ava's portfolio identified by the IRP and the supplemental analysis and is based on the

inclusion of the City of Stockton.

IV. Action Plan	Ava's 2022 RFO resulted in executed agreements for four
B. Procurement Activities	projects. The projects have a range of CODs beginning in 2023 through 2025 and include one project that is already online and delivering RA. Ava also executed a 40 MW long-term bilateral contract that is expected to come online later in the decade.  Ava's 2023 RFO launched in March of 2023 with the goal of the solicitation being to contract new resources to contribute energy, renewable energy and attributes, and RA
	to support Ava's increased demand as the City of Stockton joins Ava's service territory in 2025.
IV. Action Plan	Key market, regulatory, financial, or other resource viability barriers or risks associated with the RPS resources coming
C. Potential Barriers	online in Ava's Conforming Portfolio include uncertainty regarding the future RA value of renewable and storage resources, uncertainty around the cost declines forecasted for wind and solar resources, and viability of long-lead time resources such as out-of-state or offshore wind, price increases and reduction in availability of core components resulting in uncertainty for project completion.
	No existing resources were included in the Conforming Portfolio.
	However, in October 2022, Ava entered into a five-year agreement for a 34 MW existing biomass facility. Key risks associated with the potential retirement of this existing RPS resource include the possibility of under-procurement of long-term RPS contracts and increased costs associated with filling this position.

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

This section is not applicable to Ava as it does not own any electrical transmission assets.

# Appendix A

Redlined Version of the Draft 2024 RPS Plan (compared to Final 2023 RPS Plan)

(Public version)



# **AVA COMMUNITY ENERGY**

**FINAL** 

<del>2023</del>

**DRAFT** 

2024 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN

December 29, 2023

July 24, 2024

# Table of Contents

1.	Major Changes to RPS Plan	4
II.	Executive Summary of Key Issues	5
III.	Summary of Compliance with Recent Legislation Compliance Regulatory Changes 7	6and Impact of
III.A.	Implementation of SB 350	7
III.B.	Implementation of SB 100	
III.C.	Compliance with SB 255	
III.D.	Compliance with SB 901	
III.E.	PCIA Impacts	
III.F.	IRP Procurement Requirements	
III.G.	RA Procurement Requirements	
IV.	Assessment of RPS Portfolio Supplies and Demand	<u> 12</u> 13
IV.A.	Portfolio Supply and Demand	<del>12</del> <u>13</u>
	1. Voluntary Alloca	ntion and Market
Offe	r (VAMO) 15	
<del>IV.</del> A		
<u>IV.A</u>		
IV.B.		
IV.B	3.1. Long-term Procurement	19
	Portfolio Diversity and Reliability	
	2.1. Transportation Electrification	
<u>IV.C</u>	Emerging Technologies	24
$\underline{\underline{IV}}$ .D.	Lessons Learned	<u>2425</u>
V.	Project Development Status Update	<u>25</u> 26
VI.	Potential Compliance Delays	<del>27</del> <u>29</u>
VII.	Risk Assessment	<u>28<u>30</u></u>
VII.A.	Compliance Risk	<del>28</del> <u>30</u>
VII.B.	Risk Modeling and Risk Factors	<del>29</del> <u>31</u>
VII.C.	System Reliability	<u>30</u> <u>32</u>
VII.D.	Lessons Learned	2122
VIII.	Renewable Net Short Calculation	<del>34</del> 36

IX.	Minimum Margin of Procurement (MMoP)	<u>35</u> <u>38</u>
IX.A.	MMoP Methodology and Inputs	<u>3538</u>
IX.B.	MMoP Scenarios	<del>37</del> <u>39</u>
X.	Bid Solicitation Protocol 37, Including Least-Cost Best-Fit (LCBF) Metho	dologies 40
X.A.	Solicitation Protocols for Renewables Sales	<u>3841</u>
X.B.	Bid Selection Protocols	<u>3941</u>
X.C.	LCBF Criteria	<u>4042</u>
XI.	Safety Considerations	40 <u>43</u>
XI.A.	Wildfire Risks and Vegetation Management	41 <u>43</u>
XI.B.	Decommissioning Facilities	<u>4244</u>
XI.C.	Climate Change Impacts	<u>4245</u>
XI.D.	Impacts During Public Safety Power Shut-Off ("PSPS") Events	<u>4245</u>
XI.E.	Biomass Procurement	44 <u>46</u>
XII.	Consideration of Price Adjustments	44 <u>47</u>
XIII.	Curtailment Frequency, Cost, and Forecasting, Costs	45 <u>47</u>
XIII.A.	Curtailment Frequency, Cost, and Forecasting	<u>4547</u>
	Written Description of Quantitative Analysis of Forecast of the Number of Negative Market Pricing for the Next 10 Years	
	Experience, To Date, With Managing Exposure to Negative Market Prices Learned from Other Retail Sellers in California	
	An Overall Strategy for Managing the Overall Cost Impact of Increasing Ingeneration and Negative Market Prices	
XIV.	Cost Quantification	<u>51<u>53</u></u>
XV.	Coordination with the IRP Proceeding	<u>51<u>54</u></u>
XVI	Impact of Transmission and Interconnection Delays	56

# **List of Appendices**

Appendix A: Redlined Version of the Final 2023 <u>Draft 2024</u> RPS Plan (compared to Revised Final 20222023 RPS Plan)

Appendix B: 2023 2024 RPS Procurement Plan Checklist and Officer Verification RPS Plan Template

Appendix C: RNS Calculation Appendix D: Cost Quantification

Appendix E: Bid Solicitation [Not available with Draft RPS Plan]

Appendix F: Pro Forma Agreement [Not available with Draft RPS Plan]

Appendix G: Project Development Status

# I. Major Changes to RPS Plan

In 2023 East Bay Community Energy officially changed our name to Ava Community Energy's ("Ava") (formerly East Bay Community Energy) 2023 to better represent the growing area that Ava will serve moving forward, including service to parts of San Joaquin County.

Ava's 2024 Renewable Portfolio Standard Procurement Plan ("RPS Plan") includes several modifications and improvements to its 20222023 RPS Plan. These changes are summarized in Table 1 below and include revisions to certain sections in accordance with the direction provided in the Assigned Commissioner's Ruling ("ACR") as well as the results of Ava's latest procurement activities.

Table 1. Major Changes from Revised Final 2022 RPS Procurement Plan to 2023 2024 RPS Procurement Plan

Plan Reference	Plan Section	Summary of Change
Section II	Executive Summary of Key Issues	Included updated information on Ava solicitations, inclusion of Stockton, and inclusion of Voluntary  Allocation and Market Offer ("VAMO") in RPS planning
Section IV.A	Portfolio Supply and Demand	Included updated information on Ava's procurement solicitations
Section IV.A.1	Voluntary Allocation and Market Offer (VAMO)	Included updated information on Market Offer participation and outcome Removed section on VAMO
Section IV.B.1	Long-term Procurement	Updated project and contract information, Included including forecasted CP generation
Section IV.C	Portfolio Diversity and Reliability	Updated information on EV adoption and electrification

Assigned Commissioner and Assigned Administrative Law Judge's Ruling Identifying Issues and Schedule of Review for 2024 Renewables Portfolio Standard Procurement Plans, R.24-01-017 (May 17, 2024).

		under a new Transportation
	D : 1	Electrification sub-header
Section V	Project Development Status	Provided updated information
	Update	for multiple projects
		reflecting a range of progress
		towards commercial
		operation
Section XI.D	Impacts During Public Safety	Updated information on
	Power Shut-Off ("PSPS")	outcome and status of efforts
	Events	to support community
		resilience
XIII	Curtailment Frequency,	Updated information on
	Forecasting, Costs	over-supply and IRP
		<del>curtailment analyses</del>
Section XII.B	Written Description of	Updated analysis of
	Quantitative Analysis of	forecasted negative pricing
	Forecast of the Number of	
	Hours Per Year of Negative	
	Market Pricing for the Next	
	10 Years	
<del>XII.C</del>	Experience, To Date, With	Updated approach to mitigate
	Managing Exposure to	vulnerability to negative
	Negative Market Prices	prices
	and/or Lessons Learned from	
	Other Retail Sellers in	
	California	
Section XV	Coordination with the IRP	Updated information on
	Proceeding	Ava's 2022 IRP Filing
Section XVI	Impact of Transmission and	New section
	Interconnection Delays	

# II. Executive Summary of Key Issues

Ava beganhas been serving customers insince 2018, initially with commercial and industrial customers in June 2018 followed by residential customers in November 2018. In April 2021, Ava has expanded to include three new member cities and beginning January 2025, will formally include the City of Stockton. For Ava's our service territory since inception, beginning

<sup>&</sup>lt;sup>1</sup> The cities currently served by Ava are Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, Tracy, and Union City. The unincorporated areas of Alameda County are also served by Ava.

service to the Cities of Tracy, Newark and Pleasanton in 2020. Additionally, the Ava Board of Directors ("Board") approved the addition of the Cities of Stockton and Lathrop which will begin service as Ava customers in April, 2025. With 2024 being the last year of the 2021–2024 Renewables Portfolio Standard ("RPS") compliance requirements Compliance Period 4, Ava expects expecting to exceed the Compliance Period requirement with its existing resources under contractrenewable generation from the portfolio of long-term, additional short-term contracts with eligible renewable resources, and bundled renewable energy credit, and from the Voluntary Allocation ("RECVAMO") plus energy purchases as part of the Power Charge Indifference Adjustment ("PCIA") proceedings. Ava achieved approximately 60 an estimated 68 % RPS in 2022, based on a combination of short term and long-term contracts for RPS-eligible resources 2023, with approximately 3594% of the RPS annual compliance target met from long-term contracted generation. Ava willhas increasingly relyrelied on renewable generation from long-term agreements projects to meet its RPS goals using theas projects from the portfolio continue to come online. The renewable generation comes from a combination of executed long-term contracts that have resulted from both-formal Request for Offers ("RFOs") and through the VAMO and Market Offer process. Together, the renewable energy from the projects included in these agreements demonstrate Ava's position to meetwill have Ava exceed the requirement that 65% of RPS procurement comes generation come from contracts of 10 or more years. Ava is currently conducting its fourth RFO seeking long-term California renewable energy's portfolio of long-term RPS resources has grown since the 2023 RPS Plan filing and now has eighttwenty executed long-term agreements for RPS resources resulting from the previous three RFOs, with sixsixteen of those projects located in California, including one four located in Alameda County and two in San Joaquin County. These agreements are for both

stand-alone renewable energy projects (13) and renewable projects paired with storage (7); all from new resources and are forwith terms of 10 -years or longer in duration. Ava's current and is wrapping up its fourth such solicitation RFO, the 2023 Long-Term Resource Request for Offers ("2023 RFO"), has long-term renewable and storage projects under exclusive negotiations rights at this time. Ava's current solicitation, the 2023 RFO, aims to contract and this resulted in executed contracts for six new RPS-eligible projects with online dates in 2027 and 2028. Ava also executed contracts for five RPS-eligible solar resources as part of the Disadvantaged Communities and Community Solar Green Tariff ("DAC-GT and CS-GT") proceedings. Ava is currently preparing to launch a fifth RFO, the 2024 Long-Term Resource Request for Offers ("2024 RFO"). With this next RFO Ava is looking for new resources to contribute renewable energy and environmental attributes, resources and energy storage, and resource adequacy ("RA") to support increased demand as projects that fit into our growing portfolio of resources. These projects will support an increase in renewable generation needs for the CityCities of Stockton joins Ava's service territory in and Lathrop for 2025 and to support supply Resource Adequacy ("RA") with contract language aligning to the new Slice of Day methodology supporting both the requirements for RPS compliance and system reliability. Outside of Ava's formal solicitations, Ava executed an agreement with an RPS-eligible geothermal facility. Additionally, Ava's 2022 Integrated Resource Plan ("IRP") evaluated its RPS- and greenhouse gas ("GHG")-free procurement needs and included plans allowing Ava to serve customers with 100% GHG-free energy by 2030.

# III. Summary of Compliance with Recent Legislation Compliance and Impact of Regulatory Changes

Several ongoing regulatory proceedings and legislative activities may impact Ava's RPS position and compliance requirements. The section below summarizes potential impacts to Ava's RPS position associated with changes to the RPS program resulting from Senate Bill ("SB") 350, SB 100, SB 255 and SB 901 requirements, and ongoing developments in the Power Charge Indifference Adjustment ("PCIA") proceeding and IRP proceeding.

#### III.A. Implementation of SB 350

SB 350 was signed by the Governor on October 7, 2015. Among other things, SB 350 set minimum procurement requirements for long-term contracts and owned renewable resources. In 2017, the <u>California Public Utilities Commission</u> ("Commission" or "CPUC") issued D.17-06-026, which adopted the requirement that 65% of RPS procurement must come from long-term contracts. Ava's previous solicitations addressed a significant portion of its long-term contracting needs,

Due

to the diversity of Commercial Operation Dates ("CODs") among projects that are executed, Ava will use generation from the RPS allocations and from the Market Offer set forth by the PCIA Phase 2 Decision, discussed in Section III.D, and generation from other potential future long-term agreements to ensure that Ava is compliant with the SB 350 RPS requirements over Compliance Period 4 and throughout the planning horizon. Additionally, Ava's current solicitation, the 2023 RFO, will evaluate projects with CODs from 2024–2030; contracts executed from this solicitation would add more long-term renewable generation for the current and future compliance periods.

## III.B. Implementation of SB 100

SB 100 was approved by Governor Brown on September 10, 2018, and took effect on January 1, 2019. The bill increases the RPS compliance targets for Ava from 40% to 44% by 2024, from 45% to 52% by 2027, and from 50% to 60% by 2030.<sup>2</sup> The quantitative and qualitative portions of Avaof Ava 's 20232024 RPS Plan reflect the new RPS targets established by SB 100, through the year 20332034, pursuant to the Assigned Commissioner Ruling ("ACR") requiring an RPS portfolio assessment over a detailed 10-year planning horizon.<sup>3</sup>

On June 27, 2019, the Commission adopted the *Decision Implementing Provisions of*Senate Bill 100 Relating to Procurement Quantity Requirements under the California

Renewables Portfolio Standard (D.19-06-023). The decision established compliance periods and procurement quantity requirements in accordance with SB 100 such that the annual megawatt hour ("MWh") targets for RPS-eligible procurement are as follows:

Compliance Period 4 (2021–2024): (.3575 \* 2021 retail sales) + (.385 \* 2022 retail sales) + (.4125 \* 2023 retail sales) + (.44 \* 2024 retail sales)

Compliance Period 5 (2025–2027): (.4667 \* 2025 retail sales) + (.4933 \* 2026 retail sales) + (.52 \* 2027 retail sales)

Compliance Period 6 (2028–2030): (.5467 \* 2028 retail sales) + (.5733 \* 2029 retail sales) + (.60 \* 2030 retail sales)

AvaEAva's quantitative analysis of its RPS compliance position, shown in its Renewable Net Short ("RNS") table, reflects the updated annual targets defined above. In addition, in December 2020, Ava's Board adopted a target of providing customers with 100% clean energy

<sup>&</sup>lt;sup>2</sup> Senate Bill 100, Section 3. Amending California Public Utilities Code § 399.15(b)(2)(B).

<sup>&</sup>lt;sup>3</sup> See, e.g., ACR at p14; see also id. 21at 17.

by 2030 and in April 2022 the Board adopted the renewable targets to reach the 2030 goal which were increased in June of 2022, and again in June of 2023, and again in June of 2024, and are included on the RNS table.

#### III.C. Compliance with SB 255

SB 255 was adopted in 2019, expanding the requirements of the <a href="mailto:CPUC\_Commission">CPUC\_Commission</a>'s Supplier Diversity program to apply to community choice aggregators ("CCAs") to ensure that an equitable proportion of utility expenditures go to diverse business enterprises.

Per the requirements of SB 255 and General Order ("GO") 156, Ava submitted its annual Supplier and Diversity Annual Report in March 20232024. As a California local government entity bound by California Proposition 209, Ava is prohibited from considering race, color, ethnicity, or national origin in its contracting. However, Ava places a high value on diversity and includes standard language in all of our goods, services, and power solicitations pertaining to Supplier Diversity. Solicitation materials and solicitation webinars also provide background on GO 156 and share our commitment to supporting the certification process of eligible contractors.

In addition, Ava has a strong commitment to investing locally and does have preference to transact with businesses based in its service territory, certified as disabled veteran-owned businesses, and/or located in a disadvantaged community ("DAC"), as well as for generating resources and/or energy storage that will be sited in its service territory. Detailed further in Section IV.AV, Ava's 2022 Long Term Resource RFO ("2022 RFO") included an executed contract for an energy storage facility that will be sited executed five DAC-GT and CS-GT contracts as part of the 2023 DAC-GT and CS-GT RFO, including three projects in Alameda County and two in San Joaquin County. All of these contracts are in Ava's service territory, in the City of Tracy.

#### III.D. Compliance with SB 901

SB 901 requires CCAs with contracts for certain biomass facilities operative in 2018 to seek contract extensions. Avaidid not have any specific biomass contracts operative at any time in 2018 and therefore is not subject to Section 8388 of the Public Utilities Code. Ava discusses considerations around biomass procurement in Section XI.E.

## III.E. PCIA Impacts

On October 11, 2018, the Commission adopted Decision Modifying the Power Charge Indifferent Indifference Methodology (D.18-10-019) in the PCIA proceeding. The decision notes the need for coordination with the RPS proceeding on issues related to defining and managing excess RPS products in investor-owned utilities' ("IOU") portfolios. Additionally, it includes in the scope for Phase 2 of the proceeding a working group established to address portfolio optimization and voluntary auction frameworks for utility portfolio resources.<sup>4</sup> On February 21, 2020, the Final Report of this working group ("Working Group Three") was filed with the Commission.<sup>5</sup> On May 20, 2021 the Commission issued a *Phase 2 Decision on Power Charge* Indifference Adjustment Cap and Portfolio Optimization (D.21-05-030) that deviates from many of the consensus proposals identified in the Final Report. The decision put forth an RPS allocation process beginning in 2023, whereby load-serving entities ("LSEs") were offered shares of an investor-owned utility's ("IOU") PCIA-eligible RPS portfolio in proportion to their vintaged, forecasted annual load share: i.e., the VAMO. Allocations were either short- or long-term, and LSEs could decline all or a portion of their allocation. Any unaccepted allocations were then offered to the market through a formal Market Offer process, and if unsold remained

<sup>&</sup>lt;sup>4</sup> R.17-06-026, PCIA Phase 2, Working Group 3.

<sup>&</sup>lt;sup>5</sup> <u>See</u> Final Report of Working Group 3 Co-Chairs: Southern California Edison Company (U-338e), California Community Choice Association, And Commercial Energy. <u>Available at https://cal-cca.org/wp-content/uploads/2020/02/R1706026-Final-Report-of-WG-3-Co-Chairs.pdf.</u>

in the IOU's portfolio. Detailed further in section IV.A.1, Ava has accepted the full generation volume of both the long- and short-term allocation and executed a long-term agreement following participation in the Market Offer process. These totals are included on Ava's RNS tables as part of this submission.

On December 19, 2023, PG&E issued its 7105-E Tier 2 advice letter ("AL")

recommending that PG&E not hold future VAMO for RPS-eligible resources. Despite protests

citing the inappropriateness and inconsistency with cost causation principles, including by the

California Community Choice Association (of which Ava is a member), on May 8, 2024, the

Commission Energy Division approved PG&E's AL 7105-E with an effective date of May 1,

2024. In light of Energy Division's disposition of PG&E's proposal, Ava does not anticipate

further RPS-eligible volumes becoming available through the VAMO process.

#### **III.F.** IRP Procurement Requirements

D.21-06-035 ("Mid-Term Reliability Decision"), as adopted in the IRP proceeding (R.20-05-003) in June 2021, establishes a procurement target of 11,500 megawatts ("MW") of new net qualifying capacity ("NQC") coming online in 2023–2026, all from zero-emitting generation resources and/or energy storage, including RPS-eligible resources. Each retail seller is assigned a procurement responsibility based on its share of peak demand. Ava's share of the Mid-Term Reliability Decision's procurement target is over 400 MW of incremental NQC with different volume requirements for each year across the four-year period. Ava's existing long-term contracts that havewith online dates in 2023 and 2024 will be providing incremental NQC that satisfies some of Avaof Ava's requirements.

<sup>&</sup>lt;sup>6</sup> See CPUC Disposition of PG&E AL 7105-E and protests (May 8, 2024). Available at <a href="https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC\_7105-E.pdf">https://www.pge.com/tariffs/assets/pdf/adviceletter/ELEC\_7105-E.pdf</a>
<sup>7</sup> Id.

The Mid-Term Reliability Decision has impacted Avaimpacted Ava's procurement plans to meet RPS compliance requirements in that the Decision places a different and lower effective load carrying capability ("ELCC") value on stand-alone wind and solar resources than is used in the Resource Adequacy ("RA") compliance proceeding. The result is that Ava is less able to procure resources that contribute to all three requirements (RPS, RA, and Mid-Term Reliability) in an affordable manner.

Ava prioritizes affordability for its customers. The lowered and declining ELCCs paired with Ava's focus on affordability makes it harder for Ava to maintain a balance between purchasing sufficient but not excessive RPS resources and meeting its other regulatory obligations. In effect, Ava must procure more intermittent RPS resources than are needed for RPS compliance or contract with intermittent generation resources that are paired with energy storage.

The Mid-Term Reliability Decision's requirements were incorporated in the structure of Ava's 2022 RFO and 2023 RFO in order to address the incremental capacity and project type requirements of the Mid-Term Reliability Decision and secure Ava's outstanding long-term renewable energy needs with projects that maximize contribution to summer reliability, and zero on-site emissions and the lowest cost to Ava's customers. Projects from these RFO's will add generation that can meet the requirements of the Mid-Term Reliability Decision and at the same time add more long-term renewable generation for Ava's compliance obligations.

D.23-02-040 ("Supplemental MTR Decision"), issued February 28, 2023, established additional IRP-related procurement targets to be met in 2025 and 2026. However, as <u>As</u> the Supplemental MTR Decision was issued so close in time, Ava did not expressly reference Supplemental MTR procurement when initiating in its <u>2023</u> long-term RFO (issued in March

2023) however Ava is actively considering its portfolio needs in light of the Supplemental MTR Decision. However, in light of the Supplemental MTR Decision, Ava is actively evaluating its portfolio needs and the potential for delay of any resources that are being relied upon to meet the new requirement.

### **III.G. RA Procurement Requirements**

Following adoption of the 24-hour RA framework in D.22-06-050 ("RA Decision"), with a test year in 2024 and earnest compliance beginning in 2025, Ava is continuing to consider its portfolio needs for resources that offer operational flexibility throughout the 24-hour period. Ava has not yet identified additional RPS program procurement needs relative to the new Slice of Day program requirements.

## IV. Assessment of RPS Portfolio Supplies and Demand

## IV.A. Portfolio Supply and Demand

Ava's solicitations have resulted in expected energy of over 1,8004,000 GWh of renewable generation per year from long-term contracts with new RPS-eligible resources, with almost all resources located in California. All of Ava's RFOs included include terms for curtailment rights, and contracts that were executed from the 2020 RFO included paired energy storage to reflect Ava's need for resources with both baseload characteristics and operational flexibility. Ava's 2022 RFO for renewable energy and storage resulted in an executed agreement for a 125 MW storage only facility, contributing to incremental capacity and summer reliability needs for Ava's customers. As part of its current and fourth RFO, Ava evaluated its current net position and assessed additional needs from specific technology types, generation profiles, and operation flexibility when selecting the projects that were shortlisted for exclusivity. Through this RFO, Ava is targeting additional renewable projects that will further increase its contracted

portfolio of RPS Ava's 2023 RFO resulted in six executed agreements totaling over 600 MW of renewable generation and including three paired energy storage facilities.

Ava's demand for RPS-eligible resources is a function of state RPS requirements, expected customer load, including additional electric demand from Stockton and Lathrop customers, GHG emission reduction goals, and Ava's internal goal to annually exceed statewide RPS requirements. Over the 2022–2035 assessment time frame included in Ava's 2022 IRP, Ava anticipates that it will need additional renewable resources including solar, wind, offshore wind, and storage resources; additional procurement beyond that described in the 2022 IRP is needed for both the City of Stockton and the City of Lathrop's inclusion in Ava's service territory. As shown below in

Figure 1, Ava intends to exceed the applicable annual RPS procurement obligations over the 10-year planning horizon; the exact portfolio characteristics selected may vary over time depending on market developments, legislative and policy changes, technological improvements, preferences of the community, or other developments. To manage this future uncertainty, Ava examines and estimates supply and customer demand, and structures its procurement efforts to balance customer demand with resource commitments.

As part of its internal forecasting and procurement process, Ava will continue to consider the deliverability characteristics of its resources (including the expected delivery profile, available capacity and dispatchability attributes, if any, associated with each generating resource or supply agreement) and to review the respective risks associated with short- and long-term purchases. These efforts will lead to a more diverse resource mix, address grid integration issues, and provide value to the local community.

In 20222023, Ava provided its customers with approximately 6068% RPS-eligible energy on average, <sup>68</sup> exceeding the statewide requirement of 38.541.3%. Further, Ava signed agreements for volumes of RPS-eligible resources that substantially exceeded the RPS requirements in Compliance Period 3, ending December 31, 2020, by 2,580 GWh, approximately 19% over the requirement for Compliance Period 3.

Over the 2021–2024 compliance period, Ava's renewable energy position, forecasted in the RNS table, is currently 3,8245,118 GWh above the RPS compliance target and 1,796 GWh below Ava's internal target, based on Avaon Ava's risk-adjusted renewable generation. Ava intends to continue building its RPS portfolio from a combination of more long- and short-term agreements, is expected to meet its Ava's internal target, which exceeds state requirements by over 20%. Ava will also addadds renewable generation to its portfolio from the allocation of RPS energy that will be delivered through the PCIA's VAMO to be and used for RPS Compliance. Ava includes an estimate for this generation's contribution in the RNS table included with this 20232024 RPS Plan. Ava exceeded the state RPS compliance requirement by approximately 2127% in 20222023.

Ava Board's adopted goal of 100% carbon-free energy serving its demand by 2030, prescribes renewable content targets for each year through 2030 that are revisited annually. The annual targets will have Ava exceeding the state RPS requirement by approximately over 20–25% each year across the planning horizon. Targets like these will require Ava to continue to invest in renewable projects in addition to relying on the entirety of the VAMO allocation and its participation in the Market Offer.

<sup>&</sup>lt;sup>68</sup> For 20222023 Ava offered two products to customers in its service area: Bright Choice, which is a minimum of 49.454% RPS-eligible; and Renewable 100, of which 100% comes from RPS-eligible resources. 6068% represents a portfolio-weighted average for Ava.

Figure 1 shows Ava's forecasted and historical annual RPS position over the 10-year planning horizon and reflects both state procurement requirements, Ava's internal procurement targets and contracted renewable generation.

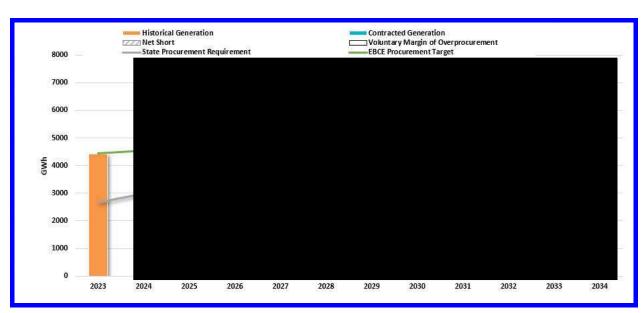
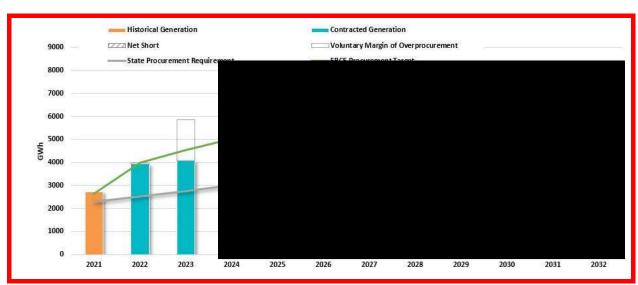


Figure 1. Ava RPS Position from Renewable Net Short Table



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

The Ava Board adopted clean energy goal and the annual renewable targets adopted by the Board in April 2022, and increased in both June 2022, and again in June 2023, will require

significant renewable electricity to meet internal targets. Ava has executed agreements for the allocation from the VAMO process, pursuant to the May 20, 2022, 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 ("RPS VAMO Ruling").

Ava participated in both the 2023 PCIA Short Term Market Offer and the 2023 PCIA RPS Long-Term Market Offer ("2023 LT Market Offer") solicitations for all three Investor Owned Utilities (IOUs) respectively. Ava's participation in PG&E's 2023 LT Market Offer resulted in an executed long term Market Offer contract with a forecasted volume of 6,450 GWh over the term of the 20-year contract beginning in 2023.

The total amount of renewable electricity forecasted for delivery for Ava as part of the executed VAMO and 2023 LT Market Offer transactions is included in the RNS table attached to this report as Appendix B.

# **IV.A.1. IV.A.2.** Portfolio Optimization

Ava's objective is to best match the expected generation profile of its supply to its electricity demand while considering risk factors such as variability in costs for customers. Ava includes additional details on risk assessment in Section VII.

To identify the optimal mix of resources based on alignment with customer load, Ava models the seasonal hourly aggregated load profiles of its customers under different probabilities to forecast seasonal and hourly load variation on an annual basis. Ava then models the generation profile for existing resources and potential new projects, including the dispatchability of each project. An optimal mix of resources is the one that best aligns the RPS-eligible resources with

annual load profiles while also minimizing the number of hours during which Ava's customer load will exceed supply, or supply will exceed demand.

Ava executed long-term contracts during its previous RFOs and had some flexibility to determine its overall portfolio composition. Executed projects from Ava's 2023 RFO project evaluations account for further integration with its existing long-term resources and alignment with its forecasted annual and hourly load. As additional RPS resources are considered as part of future solicitations, Ava will continue to model the results of the existing resource portfolio for alignment with current and future customer load.

Ava recognizes its obligation to contribute to grid reliability and the challenges in balancing reliability with ambitious renewable energy goals. As such, Ava also considers the requirements to maintain a reliable California Independent System Operator ("CAISO") system in its optimization analysis. Ava has identified the need to meet system peak and ramping requirements and values resources that can be dispatched or curtailed. Reflecting Ava's commitment to support grid reliability, to date, Ava has executed threeseven agreements that include installed energy storage paired with RPS-eligible generation and four stand-alone storage resources that will contribute to renewable integration. Ava addresses this topic in more detail in Section IV.C.

In addition, Ava was part of a group of 13 CCAs that released a Joint Request for Information ("RFI") for long duration storage resources in June 2020. This RFI sought information on the availability of different technologies to provide eight hours or more of energy storage. The results of this RFI provided valuable market information on the costs and

<sup>&</sup>lt;sup>2</sup> Joint CCAs 2020 Request for Information on Long Duration Storage, available at: https://www.mcecleanenergy.org/wp-content/uploads/2020/06/MCE 2020 Joint CCAs Long Duration Storage RFI\_061720.pdf.

availability of long duration storage and will be utilized in future long duration storage capacity procurement. Additionally, and as discussed in Section IV.D, Ava joined 7 other CCAs to form a new Joint Powers Authority ("JPA") that allows CCAs to invest in larger renewable and storage projects that are needed for reliability under a shared risk mitigation framework.

As previously mentioned, Ava's 2022 RFO targeted resources meeting the CPUCCommission's definition of incremental resources with CODs in the 2023-2026 timeframe to meet Mid-Term Reliability procurement obligations and contribute to RPS compliance requirements. The eurrent-2023 RFO seekssought additional resources with CODs in the 2024–2030 timeframe to contribute to grid reliability, provide RPS energy, and hedge Ava's growing demand. Ava performs quantitative assessment of resources by calculating resources' net present value ("NPV"). NPV is calculated as the resource value equal to the cost of the resource over its contract life (a negative value) plus the forecast energy, RPS, and capacity value contributed by the resource. Ava utilizes forward curves to establish the forward energy value of resources offered to it and incorporates its own view of capacity and RPS value streams into its modeling. The Mid-Term Reliability requirements are were incorporated into Ava's quantitative assessment of RPS resources in the 2023 RFO by reducing the capacity value of most RPS resources, consistent with declining ELCCs published by the CPUCCommission in the Incremental ELCC Study for Mid-Term Reliability Procurement, dated January 2023.

As described in CPUC D.21-06-035, available at: <a href="https://does.epue.ca.gov/PublishedDoes/Published/G000/M389/K603/389603637.PDF">https://does.epue.ca.gov/PublishedDoes/Published/G000/M389/K603/389603637.PDF</a>, or in CPUC D.23-02-040, available at: <a href="https://does.epue.ca.gov/PublishedDoes/Published/G000/M502/K956/502956567.PDF">https://does.epue.ca.gov/PublishedDoes/PublishedDoes/Published/G000/M502/K956/502956567.PDF</a>.

<sup>9-10 &</sup>lt;u>See</u>
https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/20230210 irp e3 astrape updated incremental elcc study.pdf.

Ava further increased renewable generation in its portfolio through executed agreements

for the allocation from the VAMO process, having participated in both the 2023 PCIA

Short-Term Market Offer and the 2023 PCIA RPS Long-Term Market Offer ("2023 LT Market
Offer") solicitations for all three IOUs respectively.

The total amount of renewable electricity forecasted for delivery for Ava as part of the executed VAMO and 2023 LT Market Offer transactions is included in the RNS table attached to this report as Appendix B. However, given an industry-wide delay in the issuance of RECs by the Western Renewable Energy Generation Information System ("WREGIS"), and therefore delay in transfer of RECs for the 2023 compliance year, only estimates have been provided in this Draft 2024 RPS Plan.

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

Ava has developed annual targets that exceed the statewide RPS requirement and has committed to offering products that are 100% RPS-eligible or 100% GHG-free to customers and communities who elect to enroll in those programs. In December 2020, Ava's Board adopted a target of providing customers with 100% clean energy by 2030. At its April 2022 meeting, Ava's Board adopted annual renewable targets associated with the 100% clean energy target, which were increased in June of 2022, June of 2023, and again in June of 2024. Ava's 2023 2024 RPS Plan is designed to be consistent with the Board adopted goals for renewable energy-and includes additional increases of RPS energy for both 2023 and 2024, reflected in Ava's RNS table.

Additionally, as shown in Ava's RNS table, Ava includes and plans for a Voluntarily Voluntary Margin of Over-Procurement ("VMOP") of RPS-eligible resources sufficient to exceed state goals.

In the ACR, the Commission requests information on strategies and mechanisms to ensure RPS goals are met. As discussed above, Ava uses a combination of predicting customer energy use and modeling to forecast customer load under different probabilities using risk-adjusted forecasts for both online renewable generation and contracted projects that are currently under development. Additionally, Ava contracts with a balanced portfolio of long- and short-term RPS resources that gives Ava the flexibility to meet and exceed the RPS goals. Finally, Ava conducts regular check-ins with its Board, frequent updates to internal models and forecasts processes, and aligning staffing and solicitation launch timelines with procurement needs.

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

As the ACR notes, SB 350 requires that beginning in Compliance Period 4, 65% of the RPS-eligible generation come from long-term contracts of 10 or more years. Ava's RFOs have addressed some of this need for long-term contracted RPS generation with executed contracts averaging approximately 4082% of Ava's long-term RPS compliance requirement through 2032, inclusive of Stockton, using conservative generation estimates that are from each project's Guaranteed Energy Production ("GEP") which is typically 15\_25% lower than the actual expected generation. The online datedates of the eighttwenty generation projects Ava has under contract started as early as December 2020, and by 2030 all currently contracted generation is expected to be online. Included in those eighttwenty are Ava executed agreements for threeseven RPS projects whichthat include paired storage, and. Ava has contracted an additional four stand-alone storage projects that will contribute to grid reliability.

Two of the To date, Ava has seven RPS projects eamethat have come online at the end of 2021 between 2020 and in April 2022,2024 and one of the stand-alone storage projects that came

As previously described, Ava's fourth solicitation, the 2023 RFO, will further addressaddressed reliability requirements and addadded more long-term renewable electricity.

#### IV.C. Portfolio Diversity and Reliability

The ACR asks LSEs to describe both qualitatively and quantitatively how they consider portfolio diversity and grid reliability in making procurement decisions. As described in more detail in Section X, Ava considers technology type, hourly generation profiles, geography, counterparty concentration, project-specific concentration, development maturity,

interconnection or congestion related risk, and operating characteristics, among other factors, as part of its project selection methodology. Qualitatively, Ava's procurement decisions are informed by several practices that help ensure diverse resources are selected and reliability is maintained:

- Portfolio optimization analysis: Prospective resources are evaluated on a portfolio basis, rather than as individual projects, based on alignment with modeled load and contribution to grid reliability. This analysis is described in more detail in Section X.C.
- Assessment of hourly generation profile: Ava considers RA value and alignment with load in its evaluation of offers. Resources are modeled using their hourly generation profiles across several scenarios and probabilities to help Ava select the resources that can cost-effectively align with load (more detail on Ava's bid selection methodology is provided in Section X). Ava's internal load forecast considers variations in load and load shapes including changes in enrolled customers' energy use behavior and changes due to increased levels of transportation electrification. In developing the transportation electrification load forecast, Ava uses a combination of demographic information such as the number of electric vehicles registered in the communities Ava serves (obtained through a Department of Motor Vehicle data request), these communities' proportional share of the total registered vehicles in the State, and the State's 2030 electric vehicle targets (Executive Order B-48-18), to determine an expected rate of EV registration growth in Ava's served communities. Ava forecasts light-duty vehicle adoption continues to grow at the average growth in EV sales in both Alameda (~20%/yr) and San Joaquin Counties (~8%/yr) over the last 5 year until 2030, transitioning to 10% increase per year until EV sales reach 100% of vehicle sales in 2034 (one year prior to California's

mandated phase out of conventional fuel vehicles). Ava assumes Battery Electric Vehicles (BEVs) add 4MWh of load per annum and Plug in Hybrid Vehicles (PHEVs) add 1MWh of load per annum to Avas load based on a vehicle efficiency of 3 miles/kWh and 12,000 miles per year of driving. Ava expects slow but steady growth in M/H Duty EVs in the early years of the IEPR based on the very low starting point in 2023 (39) registered vehicles). Vehicle growth will accelerate with Advanced Clean Fleets and other regulations towards the end of the decade. Ava expects over 10k registrations by 2034 with an average annual usage of 20GWh/yr/vehicle. Estimating the energy needs for the expected mix of EVs in its service area, Ava calculates the annual energy needs for EVs in its served communities over the forecast horizon. Pursuant to Section 399.13(a)(6)(A) and consistent with D.18-05-026 Ordering Paragraph 3, as noted in the 2021 Integrated Energy Policy Report ("IEPR") (referenced in Form 3), Ava forecasts electric vehicle growth that is aligned with Alameda County's share of the state target of 1.5MM vehicles by 2025 and 5MM vehicles by 2030. 40 Energy impacts associated with the increase are taken into consideration with respect to procurement decisions and project selection.

• Diversification: Ava also seeks to diversify certain commercial contractual terms to help manage near- and long-term risk. For example, as part of the 2018, 2020, and 2022 Ava's previous RFOs, Avait structured contracts with variations related to contract tenor, fixed versus an escalating price, hub-settled versus pp-node settled pricing, and a storage project with nameplate capacity declining over the contract term. Additionally, Ava

<sup>&</sup>lt;sup>10</sup>See East Bay Community Energy 2021 IEPR Electric Resource Plan narrative.

evaluates the individual project's contract term end dates to ensure that there is diversity among its contracted portfolio when the long-term contracts expire.

- Workforce: Ava prioritizes executing contracts for projects that will be developed using local, union workforce and will pay prevailing wages.
- Solicitation structure: Since 2019, Ava has requested and evaluated a high degree of
  variation in storage offers so that Ava could have a more robust understanding of storage
  opportunities, market prices and configurations that are currently available and to
  augment our operational experience. Selection of storage offerings favored Local Area
  RA, giving these resources a higher value than System RA located outside of Ava's
  service territory.

Quantitatively, Ava's Conforming Portfolio developed through the 2022 IRP process provides a helpful assessment of Ava's resource diversity needs and potential pathways to achieve them at least cost. For its IRP filing, Ava modeled portfolio expansion and performance using the analytics platforms Plexos and Gridpath to evaluate all modeling aspects related to capacity expansion, production cost modeling, and local portfolio optimization, including cost performance, reliability, GHG emissions, and criteria pollutant emissions. This analysis helps to inform Ava's quantification of resource diversity benefits by stochastically modeling uncertainty in load, renewable generation, power prices, and basis risk. The resulting probabilistic distribution of costs allows Ava to evaluate diversity benefits under several different realistic future scenarios.

Ava notes that the RPS and IRP planning processes, while separate from procurement decisions themselves, are important tools in the decision-making process. Ava's IRP modeling results have and will continue to inform its approach to soliciting resources that meet renewables

integration and reliability needs. To ensure that there is a proper "feedback loop" between actual procurement and forward-looking procurement plans, Ava updated its 2022 IRP baseline to reflect the outcome of its procurement solicitations to date. The results of Ava's 2022 IRP helped inform resource selection during the 2022 RFO; a supplemental, internal IRP analysis which included Stockton in Ava's load (as described in Table 6) was referenced when shortlisting projects for the 2023 RFO. Ava anticipates that to balance reliability and costs along with its renewables goal, its portfolio will be comprised of a diverse set of resources, including demand response, load shifting, peak shaving, energy efficiency, and storage technologies including hybrid and co-located resources.

## IV.C.1. <u>Transportation Electrification</u>

In developing the transportation electrification load forecast, Ava uses a combination of demographic information such as the number of electric vehicles registered in the communities.

Ava serves (obtained through a Department of Motor Vehicle data request), these communities' proportional share of the total registered vehicles in the State, and the State's 2030 electric vehicle targets (Executive Order B-48-18), to determine an expected rate of EV registration growth in Ava's served communities.

Ava forecasts light-duty vehicle adoption continues to rise at the average growth rates in new EV registrations and EV sales, with Alameda County seeing an average of nearly 3x the number of EV sales as EV registrations given the concentration of dealerships in the County compared to neighboring areas. For EV registrations, Ava currently projects an average 20%/yr annual increase through 2030, with EVs reaching roughly 50% of the light-duty registrations by 2035. For EV sales, Ava projects average annual increases in both Alameda (averaging to 15%/yr) and San Joaquin Counties (~8%/yr) over the last 5 year until 2030, transitioning to 10%

increase per year until EV sales reach 100% of vehicle sales in 2032 (three years prior to California's mandated phase-out of conventional fuel vehicles).

Ava assumes Battery Electric Vehicles (BEVs) add 4MWh of load per annum and Plug in Hybrid Vehicles (PHEVs) add 1MWh of load per annum to Ava's load based on a vehicle efficiency of 3 miles/kWh and 12,000 miles per year of driving. Ava expects slow but steady growth in M/H Duty EVs in the early years of the Integrated Energy Policy Report ("IEPR") based on the very low starting point in 2023 (39 registered vehicles). Vehicle growth will accelerate with Advanced Clean Fleets and other regulations towards the end of the decade. Ava expects over 10k registrations by 2034 with an average annual usage of 20GWh/yr/vehicle.

Estimating the energy needs for the expected mix of EVs in its service area, Ava calculates the annual energy needs for EVs in its served communities over the forecast horizon.

Pursuant to Section 399.13(a)(6)(A) and consistent with D.18-05-026 Ordering Paragraph 3, as noted in the 2023 IEPR (referenced in Form 3), Ava forecasts electric vehicle growth that is aligned with Alameda County's share of the state target of 1.5 MM vehicles by 2025 and 5 MM vehicles by 2030. Energy impacts associated with the increase are taken into consideration with respect to procurement decisions and project selection.

# IV.C.2. <u>Emerging Technologies</u>

Ava is continuously monitoring the costs of existing resources and evaluating new and emerging ones. In its 2022 IRP, Ava specifically assessed the role of out-of-state wind and long-duration storage to complement other renewable resource additions and improve portfolio reliability. Ava expects offshore wind and out-of-state wind may be a valuable contribution to

<sup>11</sup> See East Bay Community Energy [now Ava] IEPR Demand Forecast 2023 Form 4, TN#250920-2, at 3 (July 3, 2023) CEC Docket 23-IEPR-02. Available at https://efiling.energy.ca.gov/GetDocument.aspx?tn=250920-2&DocumentContentId=85845.

Ava's portfolio, especially in outer years of the forecast, and will continue to assess these options as the costs and viability of each are better understood, including the transmission costs and development timelines.

Ava's third RFO, the 2022 RFO, explicitly sought long duration storage resources to contribute to procurement mandated by the Mid-Term Reliability Decision, however none were executed. As part of an existing stand-alone battery storage agreement, Ava amended the agreement to transition an existing 4-hour battery to 8-hour duration; the resource is expected to achieve commercial operation in 2026.

#### IV.D. Lessons Learned

Ava is continuing to refine and improve its procurement practices to achieve organizational goals and contribute to system reliability and emission reduction goals for the state. With a sizeable portfolio of assets under contract and numerous operational RPS generation and storage resources, Ava has experience moving projects from the solicitation to contract execution, through development, and finally to being an online and operational resource. Ava has learned lessons through this process and continues to refine its contract language to help ensure that contracted resources are motivated to be built. In particular, given the supply chain disruptions and project delays that were so common from 2021 through the present, Ava elected to increase the development security posting required in its long-term contracts. Ava now has one of the highest development security obligations in California and recognizes that this financial commitment from developers is among the most effective ways to ensure a contracted resource will be built and achieve commercial operation. As described in Section IV.B.1, Ava has made significant progress towards meeting its long-term RPS procurement requirement through its solicitations, currently averaging approximately 83%. Ava will continue to apply this

experience to its 2023 RFO in future solicitations while continuing to procure long-term RPS generation to meet Ava Board approved renewable energy targets.

Another area in which Ava leverages lessons learned and seeks to gain more experience in is joint procurement with other LSEs. In February 2021, Ava joined 7 other CCAs to form a new Joint Powers Authority ("JPA") to procure new, cost-effective clean energy and reliability resources. The JPA allows CCAs to combine their buying power and invest in larger renewable and storage projects under a shared risk mitigation framework, and Ava expects its participation to provide procurement cost savings that can be passed on to its customers. Additionally, the JPA allows CCAs to evaluate other project and contract structures that may not be available to a single CCA. Ava also partnered with San Jose Clean Energy ("SJCE") to launchon both the 2022 RFO and the 2023 RFO, allowing each to leverage their respective skills and experiences to contract long-term agreements effectively and with favorable terms. Ava continues plans to continue to build on its experience in joint procurement in the 2023 2024 RFO which is will be the secondthird joint RFO with SJCE.

## V. Project Development Status Update

As of the date of this 20232024 RPS Plan filing, Ava has entered into eight20 agreements with RPS-eligible facilities, with fourseven having reached commercial operation, and three additional projects expected to reach COD by the end of 2023 or early 2024. These projects are summarized below in

Table 2. The remaining project isprojects are expected to achieve full operation inbetween 2026 and 2030, and together they will collectively provide generation volumes sufficient to serve approximately 2535% of the forecasts for retail sales, inclusive of the City of Stockton, and on average approximately 4154% of the RPS compliance requirement through

20322034, calculated based on the annual volume of energy (in MWh) expected to be generated by each project, as defined in each contract. As previously discussed, Ava does not anticipate a shortfall in complying with RPS obligations as these numbers do not reflect Ava's use of the VAMO resources. Additional information on these contracts including contract start and end date, expected annual generation, and total contract volume is included in Appendix F.

**Table 2. Project Development Status Summary** 

	Facility Name	Technolog y Type	MW-ac	Location	Term Lengt h	COD	Network Upgrades Milestone
1.	Scott Hagerty Wind Energy Center (aka Altamont)	Wind	56.25 4.80	Alameda County, CA	20 years	On-line	Complete
2.	Luciana	Solar	55.83	Tulare County, CA	15 <u>18</u> years	On-line	Complete
3.	EDPR Scarlet I	Solar + Storage	100 <u>1</u> 00.00	Fresno County, CA	20 years	Expected 12/15/2023 Online	Complete
4.	Rosamond Central Solar	Solar	112 <u>1</u> 12.00	Kern County, CA	15 years	On-line	Complete
5.	Tecolote	Wind	100 <u>1</u> 00.00	Duran, NM	10 years	On-line	Complete
6.	Daggett South	Solar + Storage	50 <u>50.</u> 00	San Bernadino , CA	15 years	On-line	Complete
7.	Oberon	Solar + Storage	125 <sub>1</sub> 25.00	Riverside, CA	15 years	On-line	Complete
8.	Corsac Station	Geothermal	40 <u>40.</u> 00	Churchill, NV	15 years		

9.	Easley I	<u>Solar</u>	<u>75.00</u>	Riverside, <u>CA</u>	<u>10</u> <u>years</u>	
10.	Easley II	<u>Solar</u>	<u>75.00</u>	Riverside,	<u>10</u> <u>years</u>	
11.	<u>Sunzia</u>	Wind	<u>250.00</u>	Torrance, NM	<u>15</u> <u>years</u>	
12.	Sun Pond	Solar + Storage	<u>42.50</u>	Maricopa,  AZ	<u>20</u> <u>years</u>	Complete
13.	Zeta Solar	Solar + Storage	<u>37.50</u>	Merced,	<u>20</u> <u>years</u>	
14.	Imperial Sun	Solar + Storage	100.00	Imperial, <u>CA</u>	<u>15</u> <u>years</u>	
15.	Rosemary Solar	Solar + Storage	<u>70.00</u>	<u>Fresno,</u> <u>CA</u>	20 years	
16.	Hayward 1	<u>Solar</u>	<u>0.56</u>	Alameda, <u>CA</u>	<u>20</u> <u>years</u>	<u>Complete</u>
17.	Oakland 2	<u>Solar</u>	<u>0.72</u>	Alameda, <u>CA</u>	<u>20</u> <u>years</u>	<u>Complete</u>
18.	San Leandro	<u>Solar</u>	<u>1.00</u>	Alameda, <u>CA</u>	<u>20</u> <u>years</u>	Complete
19.	Tracy 9	Solar	<u>3.00</u>	San Joaquin, CA	20 years	Complete
20.	Tracy 16	Solar	<u>2.00</u>	San Joaquin, CA	<u>20</u> <u>years</u>	Complete

The above table includes RPS projects that were executed as part of Ava RFOs.

-As part of the 2023 RFO and DAC-GT and CS-GT

online from 2024 2030 between The generation from these projects will add long-term RPS generation to Ava's portfolio for both the state RPS compliance targets and the long-term requirement from SB 350 through the 2033 planning horizon.

### VI. Potential Compliance Delays

However, Ava recognizes that project developers can face significant challenges in project development including obtaining the needed interconnection upgrades for achieving Full Capacity Deliverability Status and reaching project COD. These developments require close coordination with and often action from the project's Primary Transmission Owner ("PTO"). Ava has observed developers having difficulty coordinating with PTOs which has directly impacted the ability for projects to meet their respective CODs on the contracted dates and resulted in project delays. Additionally, labor shortages at the PTO have led to schedule delays

ana prov	onto a projecto from come and a synome on earth and the meet conference of process
would re	esult in LSEs facing significantly less risk of project delays that jeopardize meeting clear
energy a	nd reliability requirements statewide.
Ē	Developers can also experience difficulty achieving permitting, financing, and site
control,	which may cause additional delays. Given the maturity of the renewable energy industry
<del>in Califo</del>	ornia and the strong experience of developers, Ava believes these risk factors can be
managed	l effectively through planning and risk-adjusting project generation. Nonetheless, Ava
<del>has taker</del>	n a number of steps to mitigate risks associated with project development, as described
<del>in more (</del>	detail in Section VII. For example, Ava performs regular due diligence related to project
developr	ment risk, including requiring scheduled reporting to track developer progress on
executed	l contracts; in the solicitation and procurement phase Ava values projects with lower
developr	ment risk over those that may carry significant development issues.
Ŧ	Fransmission and interconnection upgrades, supply chain issues, labor shortages, and
<del>construc</del>	tion delays are common causes of project delays.

	Ava mitigates these risks through strategic growth of our project portfolio and cons
comi	nunication with our project developers.
	Ave has standardized tarms in our
	Ava has standardized terms in our
	act that require the project developers to communicate with a governmental authority
<u>has j</u>	act that require the project developers to communicate with a governmental authority
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has j Whe each Ava'	act that require the project developers to communicate with a governmental authority derisdiction over the delay as one of the requirements to receive delay days in the control Ava begins our solicitations for new projects, a detailed analysis is performed to assert project's risks and those projects with lower risk are prioritized, improving the resiliest soverall portfolio.
has j  Whe each Ava'	act that require the project developers to communicate with a governmental authority desired to over the delay as one of the requirements to receive delay days in the control of the Ava begins our solicitations for new projects, a detailed analysis is performed to assess project's risks and those projects with lower risk are prioritized, improving the resilients overall portfolio.  Ava will continue monitoring the status of its ongoing projects and the overalling

#### VII. Risk Assessment

Ava considers a range of risks in developing its RPS portfolio position, as described below.

## VII.A. Compliance Risk

Ava is currently exceeding the RPS compliance with state RPS goals target for the current period and purchasing renewable energy at levels to meet goals established by its Board. As noted in Ava's Implementation Plan and its subsequent RPS Plans, Ava expects to procure

for each year through 20322034, and now has Board adopted targets that reflect that goal (detailed further in Section IV.A, above, and Section VIII, below).

Ava recognizes that there is risk with RPS resources during the development phase due to project delays or failures as well as challenges in equipment procurement, permitting, <a href="mailto:interconnection">interconnection</a> and transmission development. There are also risks with on-line projects due to the potential for increased curtailment of solar and wind resources (as shown in Tables 4a and 4b5), or other equipment failures or outages. However, Ava's risk of non-compliance with the RPS program currently has a low probability, and therefore a low risk as underperformance of any single contract is mitigated by targeting a higher volume of deliveries overall, and in significant excess of state RPS goals.

For Ava's long-term projects, Ava uses the GEP in both the RNS table and for its internal planning purposes as a conservative forecast of generation. The GEP is typically-15\_25% below the Expected Energy from a specific project, which provides further buffer to the internal targets exceeding the state RPS requirement. Additionally, Ava models generation from both contracted resources and from potential projects when evaluating the portfolio fit, as further described in

section VIVII.B, below. This includes probability and scenario analysis of both load and generation to determine both the minimum amount of generation to understand project and compliance risk exposure and to quantify the maximum generation for coverage of customer load.

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

As noted in Section 399.13(a)(5)(A), and the ACR, generation variability and resource availability may impact the amount of future electricity delivered. Ava considers this potential risk in its forecasting process as well as during the procurement review and decision-making stages. Ava accounts for generation variability risk in its RPS generation forecast by analyzing, through probabilistic assessment, a wide range of potential energy production scenarios due to weather and operating risks and uses the GEP for generation from each project for planning purposes. In addition, targeting a volume of RPS energy that exceeds the requirements of the RPS program further mitigates the risk of lower-than-expected generation. As discussed above, Ava models the generation from RPS resources based on conservative estimates and forecasts generation and load with both probabilistic and scenario-based analysis. Ava also purchases RPS energy with short-term contracts, one- to two-year terms typically, to account for any reduced deliveries that could be caused by both generation variability of projects and delivery risk for those projects currently under development.

Ava is aware that RPS projects under construction have risks during the development period that could affect the contracted COD and have additional risk to the available generation after the projects are online. In addition to the mitigation strategies described below in Table 3, Ava has included a failure rate of 2% on the RNS tables for the RPS facilities that are currently online and generating renewable energy beginning in the 20232024 reporting year and this is

applied to the generation from VAMO that is included in the RNS tables <u>as well</u>. The 2% failure rate for online generation combined with the use of the GEP in the RNS tables is included as a reasonable action to account for the risks that could affect available generation from Ava's contracted RPS projects that are online.

# VII.C. System Reliability

Ava considers its contribution to system reliability when selecting resources for its
portfolio. As discussed in Section IV.C, Ava aims to avoid overreliance on any single technology
type or resource concentration located in the same geographic region to mitigate the impacts of
localized curtailment to Ava's portfolio. To maximize alignment with customer demand, the
forecasted generation profiles of individual projects are modeled together and matched against
Ava's forecasted hourly load. Ava has also invested in both stand-alone storage and energy
storage paired with RPS resources as part of its renewable portfolio to provide increased
reliability and renewable integration services. Ava currently has three seven paired solar plus
storage resources under contract which will collectively include of storage
capacity, with all resources 167.5 MWs already online and the remaining
As part of the two-previous RFOs, Ava executed
agreements for four stand-alone energy storage contracts with 228285 MW of collective storage
capacity. Additionally, as part of the 2022 RFO, three resources were contracted that will
<del>provide</del>

As part of the 2022 IRP Ava evaluated its preferred portfolio's contribution to system reliability, both in relation to meeting its projected RA obligations on an annual and monthly basis as well as quantifying and limiting its reliance on the spot market.

#### VII.D. Lessons Learned

Ava has incorporated additional risk factors into its Risk Assessment as lessons learned from the recent history of contracting renewable generation, soliciting, and executing long-term RPS project agreements, and modeling customer load. In 2022, Ava brought on hired a credit risk manager with extensive risk analytics and management experience in wholesale energy market transactions to further mitigate contracting risk. Another change Ava made was to create more standardized agreement language, which was used during previous and current RFOs, and insists on stronger damage provisions in form agreements on long-term projects. This includes increasing the amount of development and performance security that Ava holds for projects when compared to the Ava's first RFO in 2018 to incentivize developers to stay on track with development of their projects under executed contracts. Ava holds developers to a high standard for compliance with RA contract provisions and has received feedback from counterparties that its contractual approach to RA damages (i.e., the damages developers must pay to Ava if their projects fail to deliver contracted RA volumes) is among the most stringent in the market. Lastly, Ava models generation for our executed renewable contracts under different probabilistic conditions to measure and track portfolio risk from our online and upcoming long-term RPS projects.

In previous procurement processes, Ava has also experienced challenges within the process and timeline of negotiations and actual deal execution. The process risk can result from counterparties changing key deal terms, or when situations arise within the negotiation

timeframe that can cause deals to fail thus negatively impacting Ava's portfolio plans. As such, a more clearly defined negotiation or exclusivity period that is adhered to by both buyers and sellers can help decrease procurement process related risks and Ava will incorporate this strategy into future procurement processes.

Ava has incorporated additional scoring metrics to account for interconnection related risks for projects that are anticipated to be online within or after Cluster 15 under CAISO's interconnection process. This is a result of changing regulatory and process rules as per the CAISO that encourages buyers to take a closer look at project status, viability and experience which can be challenging when buyers also have the need to ensure their respective costs, budgets and rates can be sustained in the near and longer term when a new project agreement is acquired.

In addition to the above, Ava recognizes that there are still risks associated with its contracts and further assesses the probability of missing its renewable energy goals due to several factors, described in more detail below in Table 3. Table 3 was first presented to Ava's Board and is regularly updated and reproduced here. It includes information on Ava's mitigation strategies for risks associated with lower-than-expected generation, resource availability (project performance risk) and compliance delays (development & counterparty risk).

The table has been updated since its original presentation to the Board to reflect new or emerging risk exposure. The original table, titled "Oakland Clean Energy Initiative and CA Renewable Energy RFP Overview" was presented at Ava's Board of Directors Meeting and Retreat, June 5, 2019. Available at <a href="https://res.cloudinary.com/diactiwk7/image/upload/ebce">https://res.cloudinary.com/diactiwk7/image/upload/ebce</a> retreat packet 6 5 19-1.pdf.

**Table 3. Key Project Risks and Mitigating Actions** 

	Risk	Description	Mitigation
1.	Development & Counterparty Risk	Project encounters issues with development milestones, local opposition, equipment sourcing or financing	<ul> <li>Projects selected based in part on qualitative due diligence related to development risk.</li> <li>The anticipated project portfolio reflects a diverse mix of counterparties, projects, and development risk.</li> <li>Developers for selected projects are required to post development security at contract execution to Ava in event of default, or for damages for missing COD.</li> <li>The development security has been increased further as part of the 2022 RFO.</li> <li>Regular reporting will track development progress.</li> <li>Monitoring for supply-side project disruptions.</li> </ul>
2.	Project Performance Risk	Projects do not perform due to project-related issues or poor weather conditions	<ul> <li>Idiosyncratic project issues should be addressed through project/counterparty posted operation security and performance related requirements, such as guaranteed energy production.</li> <li>Developers for executed projects are required to post a performance security to Ava where Ava can collect damages for continued underperformance.</li> <li>Modeling of solar irradiation is completed looking at robust historical data and a wide forecast of potential future outcomes for solar projects.</li> </ul>
3.	Financial Risk	Actual financial profile of proposals deviates from expectations as a reflection of macro energy market characteristics	<ul> <li>Projects evaluated and modeled against multiple benchmarks, including historical market data and forward scenarios both internally and by third party consultant. Forward scenarios include a wide range of market conditions and result in probabilistic financial profiles.</li> <li>The anticipated project portfolio reflects a diverse mix of project locations and technology that includes RPS resources paired with storage, solar, wind, geothermal and stand-alone energy storage for reliability.</li> </ul>

	Risk	Description	Mitigation
4.	Congestion / Basis Risk	Transmission constraints degrade the value of power Ava is purchasing during the term of the agreements	<ul> <li>Quantifying forward congestion can be challenging. Ava interviewed multiple consulting firms to understand possible treatments. Project financial profiles include recent historical data to reflect current market dynamics.</li> <li>The load Ava serves provides partial offset to potential congestion.</li> </ul>
5.	Load Management Risk	Ava load reductions based on customer departures, increase in distributed energy resources, direct access, energy efficiency, population decline, etc.	<ul> <li>Detailed management of load forecasts into the future.</li> <li>Total MWhs procured through solicitation is forecasted to be approximately 34% of annual sales.</li> </ul>

### **VIII.** Renewable Net Short Calculation

Ava has provided a quantitative assessment to support the qualitative descriptions provided in this 20232024 RPS Plan in the RNS Table which is attached as Appendix B. The information provided in Appendix B includes generation from executed contracts and the VMOP amount that reflects Ava's Board adopted internal RPS targets. These targets and the related VMOP amounts have been updated for this 20232024 RPS Plan to reflect the Board-adopted annual renewable targets that were approved most recently in June 20232024 and that are linked to the Board-adopted clean energy goal by 2030. Ava has already achieved compliance with state RPS program requirements through the previous compliance period with a margin of 2,580 GWh or approximately 19% of RPS generation over the state RPS requirement and exceeded the 20222023 RPS target by approximately 2127%. Ava anticipates meeting its RNS Net RPS Procurement needs in current years and throughout the planning horizon, but as noted in Sections

VI and VII, Ava has undertaken a number of steps to mitigate project development and compliance risks.

Ava's assessment of its RPS position begins with modeling to produce a forecast of its annual retail sales primarily based on historical customer energy use by customer type and consistent with the Electricity Demand Forecast submitted to the California Energy Commission ("CEC") in support of the 20212023 IEPR. 1213 Assumptions for load growth, energy efficiency, behind-the-meter solar photovoltaic, and electric vehicle penetration are internal to Ava and based on assumptions of customer adoption and program roll-out. Ava's load forecast reflects internal assumptions about customer opt-out rates based on historical data. Ava develops its generation forecast based on firm contracted short-term agreements and GEP from projects with executed agreements that are currently under development and those in early contract years. Ava also applies a "GEP reduction" to all VAMO generation to conservatively mitigate any variability in expected generation. The portion of the RNS Table displaying "Risk Adjusted RECs from RPS Facilities in Development" uses both the GEP which is typically 15% lower than the projects' expected energy and has an additional 5% reduction applied to the generation as the forecasted failure rate for facilities in development which is discussed in more detail in Section IX.A below.

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

Ava's renewable procurement efforts are guided by the forecasted need for renewable energy based on customer load forecasts and the Board-adopted renewable targets described in

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<sup>&</sup>lt;sup>12</sup>13 See "East Bay Community Energy [now Ava] IEPR Demand Forecast 2019." 19 IEPR 03, Form 7.2 2023 Forms 1-3, TN#250920-1 (July 3, 2023), EBCE IEPR Demand Forecast 2023 Form 4, TN#250920-2 (July 3, 2023) and EBCE IEPR Demand Forecast 2023 Form 8, TN#251520 (Aug. 7, 2023), CEC Docket 23-IEPR-02. Available at https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=23-IEPR-02.

Section IV, which have historically exceeded the State's RPS requirements by 15% on average, and are forecasted to be 2023% above in 20232024. In April 2022 the Board adopted annual renewable targets through 2030 to further guide Ava's long-term renewable energy purchases. These targets, increased further in 2023 and 2024, illustrate both a path to reaching carbon-free electricity by 2030 but also an aggressive commitment to providing renewable electricity to customers well above the state's RPS targets. This effort is observed in the renewable targets and associated VMOP amount through 20332034 where Ava targets renewable energy purchases exceeding the state requirement by at leastover 20% for each year in the planning horizon and by over 25% in the current and next year. Ava's VMOP represents the difference between its Board-adopted targets for renewable energy for each year and the RPS requirement.

## IX.A. MMoP Methodology and Inputs

To establish its MMoP, Ava incorporates project risks and conservative generation forecasts to mitigate the risk that planned RPS projects are delayed or canceled. Ava considers several project development risks and performance failures, as described in Section VII when making future renewable procurement decisions. Ava evaluates project risk through a diversified approach during project selection where Ava devalues projects with perceived high development risks, attempting to remove projects prior to short-listing that have a high potential for project failure or delay issues. Ava's power purchase agreements ("PPAs") include damage payments made by seller to Ava for COD delays; this incentivizes the seller to incorporate realistic online dates. As part of the 2022 RFO, Ava further increased the amount required of developers for the development security; the same high collateral requirement iswas in place for the 2023 RFO and will be included in the 2024 RFO. Ava will continue to target RPS purchases above the state

by 2127% and exceeded the Compliance Period 3 requirement by approximately 19%. Ava's existing contracts are forecasted to already exceed the Compliance Period 4 requirement by approximately 1415%.

In addition to this qualitative risk mitigation approach, Ava applies a quantitative factor to RPS procurement as MMoP intended to ensure that Ava's RPS procurement is in excess of the state requirement. The MMoP and the qualitative measures discussed above are used to address the failure rate for renewable projects that are in development, while Section VII addresses the risk adjustment for online renewable generation in Ava's portfolio. For the

The Commission establishes a 5% MMoP required as a requirement in the RNS table Ava applied has adopted this as standard and applies a 5% MMoP per year to generation from projects that are under development over the planning horizon. Ava believes that this margin, when combined with the use of GEP for the energy forecast for projects under development, will sufficiently mitigate the risk of non-compliance associated with project delays or performance failure.

#### IX.B. MMoP Scenarios

Currently, Ava has eightwenty renewable energy contracts for projects in different stages of development or online under executed agreements from previous RFOs and bilateral negotiations. When determining the contribution of the above projects to Ava's renewable generation requirement for both the 2024 procurement cycle and Compliance Period 4, Ava uses the GEP which is a conservative estimate of the facilities' generation, typically 15% below each project's expected energy production. Ava also models project level generation and customer demand for forecasting under different probabilities and conducts sensitivity and scenario analysis as part of its IRP process. This includes Ava's portfolio modeling which simulates load

and generation stochastically and on an hourly basis. As discussed in Section IV, the modeling informs Ava's RPS procurement activities and decision-making while some of the generation risk is mitigated by using the projects' GEP and applying an additional MMoP risk adjustment to that generation in the RNS tables. Ava's scenario analysis captures fundamental uncertainty and risks; therefore, Ava does not vary the 5% MMoP annually but forecasts its position based on expected variations from other factors over the planning horizon.

# X. Bid Solicitation Protocol, Including Least-Cost Best-Fit (LCBF) Methodologies

Ava's offer solicitations from previous RFOs included an overview of the solicitation process and schedule. The 2023 2024 RFO has similar guidelines, with more emphasis on resources that complemented our existing portfolio and more targeted towards the requirement for reliability that includes specific technology types and storage variation. Furthermore, the 2024 RFO will focus on how projects handle interconnection and each project's interconnection status, project costs and viability. Ava's 20232024 RFO protocol is attached and *Pro Forma* Agreement will be finalized over the summer of 2024, prior to an anticipated Q3 RFO launch and will be included in forthcoming updates to this 2024 Procurement Plan as an Appendix D and Appendix F, as described in more detail below. Ava's Pro Forma Agreement from the 2023 RFO is attached as Appendix F. Ava notes that existing requirements related to Least-Cost Best-Fit (LCBF) are not applicable to CCAs.<sup>13</sup> While Ava does not apply the formal LCBF methodology to its offer selection process, Ava does consider cost and portfolio "fit" in its offer evaluation and selection process, as described in Section X.C. Ava has engaged with multiple external consultants to assist in modeling to identify its least-cost portfolio and optimize resource selection, including during its 2022 IRP. On a regular basis, Ava refines the underlying

<sup>13</sup> See D.04 07 029, D.11 04 030, D.12 11 016, D.14 11 042, and D.16 12 044.

methodologies within these models and updates the market assumptions to reflect the latest information on project economics and market conditions. Ava's bid selection methodology is described in more detail below.

For the 20232024 RFO in development, Ava is seeking contracts of 10 to 20 years in duration, for long-term resources online between 20242026 and 20302034 to add incremental capacity, long-term clean energy hedges, and RA to contribute to Ava's RPS requirement and IRP obligations. Additionally, the 20232024 RFO is targeting resources that meetprovide the full array of energy products (i.e., Resource energy capacity, RECs, carbon free and emissions reducing energy) Ava needs and to ensure compliance with the Mid TermSupplemental Reliability Requirements from the CPUCCommission. The 20232024 RFO is focusing on projects located in the state of California or interconnected within a California Balancing Authority including out-of-state projects interconnected using dynamic schedules or pseudo ties and any newly available maximum import capability. Ava will continue to prioritize generation from projects within Alameda County and San Joaquin County. All relevant solicitation materials are posted on Ava's website at

https://ebce.org/solicitations/https://avaenergy.org/solicitations/.

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

This section is not applicable to <u>CCA's and further</u>, Ava because it does not have any planned sales of RPS products. If necessary, Ava may consider selling limited volumes to balance its portfolio in the future.

#### **X.B.** Bid Selection Protocols

Ava seeks to secure the best portfolio of contracts to provide our customers with affordable renewable energy sources, create new in-state renewable energy projects, and drive

Joaquin County and throughout Ava's service territory. Ava issued all of its RFOs with these goals in mind. The RFOs were broad, competitive solicitations designed to ensure that a wide range of opportunities would be considered for renewables, renewable energy-plus-storage resources and stand-alone energy storage.

Ava has executed agreements for over 6351200 MW of RPS-eligible technologies and an additional 300700 MW of storage from its previous solicitations. Offers are assessed according to many factors, both quantitative and qualitative, including:

- Net Present Value of the resource.
- Economic and financial risk, including project correlation within a portfolio.
- Assessment of fixed vs. floating price, contract duration, settlement structure, CAISO zone, RA deliverability, and storage options.
- Portfolio fit.
- Contributions to reliability requirements.
- Project development risk, including site control, interconnection, permitting, and study status.
- Environmental Impacts, and development area.
- Workforce commitments related to prevailing wage, union participation, and local community investment.

Counterparty experience developing and financing projects, including status as a project owner.

#### X.C. LCBF Criteria

While Ava does not apply the formal LCBF methodology to its offer selection process,

Ava does consider cost and portfolio "fit" in its offer evaluation and selection process. Offers are
evaluated as part of a potential portfolio rather than individually. Starting with an initial list of
portfolio attributes (including generation volume, commercial operation date, settlement
locations, generation types), Ava combines offers into a portfolio and evaluates them according
to the following portfolio optimization and scenario analysis method:

- The hourly wholesale value of the electricity generated (relative to the contract price) is evaluated under a range of market conditions. Scenarios consider uncertainty in renewable generation, storage penetration, policy changes, power prices, and basis risk.
- The resulting hourly cash flows are summed to illustrate the range of potential cash flows in every month and year of the contract.
- Ava selects the portfolio of projects that provides the best economic value while also satisfying our qualitative criteria. Qualitative criteria include portfolio diversification, fit to load, project location and potential economic and environmental benefits to communities in Alameda County with a focus on disadvantaged communities.

This process may change over time as additional resources are added to Ava's portfolio.

## **XI.** Safety Considerations

Ava holds safety as a top priority. Although Ava does not own, operate, or control generation facilities or transmission/distribution assets, Ava does require industry-standard safety protocols in the construction and operation of projects with which it signs agreements.

Contractors and sub-contractors are also required to provide safety-related reporting, such as

incident reporting, logs, and training. Ava describes additional actions to reduce the safety risks posed by its renewable resource portfolio below.

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

Because Ava does not own, operate, or control generation facilities, or transmission/distribution assets, its renewable procurement activities have limited impact on wildfire risks and vegetation management. However, Ava recognizes the increased risk of wildfires caused by climate change, and the importance of prudent operations to mitigate this risk. As noted above, Ava requires industry standard safety protocols in the construction and operation of projects with which it signs agreements. Ava's *pro forma* contract<sup>14</sup> requires facilities to 1) comply with Prudent Operating Practice relating to the operation and maintenance and 2) take reasonable safety precautions with respect to the operation, maintenance, repair, and replacement of the Facility. Prudent Operating Practice is defined as:

"Prudent Operating Practice" means (a) the applicable practices, methods and acts required by or consistent with applicable Laws and reliability criteria, and otherwise engaged in or approved by a significant portion of the electric utility industry during the relevant time period with respect to grid-interconnected, utility-scale generating facilities with integrated storage in the Western United States, or (b) any of the practices, methods and acts which, in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Prudent Operating Practice is not intended to be limited to the optimum practice, method or act to the exclusion of all others, but rather to acceptable practices, methods or acts generally accepted in the industry with respect to grid-interconnected, utility-scale generating facilities with integrated storage in the Western United States. Prudent Operating Practice includes compliance with applicable Laws, applicable reliability criteria, and the criteria, rules and standards promulgated in the National Electric Safety Code and the National Electrical Code, as they may be amended or superseded from time to time, including the criteria, rules and standards of any successor organizations.

<sup>&</sup>lt;sup>14</sup> Exact terms and definitions in Ava's contracts are subject to changes due to contract negotiations and efforts to align with the most recent industry language.

Ava also considers project location its selection criteria and may rank a project lower because of its location within a high wildfire risk area.

### **XI.B.** Decommissioning Facilities

Ava does not own, operate, or control generation facilities, or transmission/distribution assets, but instead contracts with facility owners and power marketers to procure renewable energy. Currently, Ava's Board has not passed policies regarding facility decommissioning, however Ava's *Pro Forma* requires sellers to comply with the law and Prudent Operating Practice with regards to the safe disposal and recycling of facility equipment while under contract.

#### **XI.C.** Climate Change Impacts

Ava is committed to taking bold action to fight climate change while addressing the needs of our community. To demonstrate this, Ava's Board has approved a policy to set a target of providing its customers with 100 percent clean energy by 2030. 15 Ava also has an internal goal to annually exceed the statewide RPS requirement and it is committed to offering products that are 100% RPS-eligible to customers who elect to enroll in such program in advance of achieving its 2030 target.

Ava also considers project location in its selection criteria and may rank a project lower because of its location within an area with poor climate change adaptation characteristics.

## XI.D. Impacts During Public Safety Power Shut-Off ("PSPS") Events

Ava is engaging in a variety of efforts to support enhanced community resilience in the face of increased PSPS events or other unpredictable events that threaten customer access to

electricity. We are committed to investing in resources that increase deployment of solar and/or battery energy storage systems to enable residents, businesses, and our local government partners to retain essential power supply during a grid outage. Ava's efforts have been prioritized to focus on solutions for critical municipal facilities and its most vulnerable customers including low-income residents and DACs, and those with electricity-dependent medical conditions. For example, Ava has worked through a Bay Area Air Quality Management District Climate Protection grant to 1) identify critical municipal facilities designated to serve the community in time of emergency/grid outage, 2) assess the potential for solar and battery energy storage system deployment, 3) size resilience systems, and 4) develop a procurement pathway that reduces the cost and complexity of project development. As an outcome of this work, Ava issued a Request for Offers to build solar and battery energy systems at thirtysixty-one critical municipal facilities in Berkeley, Emeryville, Fremont, Hayward, Oakland, Pleasanton, Livermore, and San Leandro in 20222023. These thirtysixty-one sites represented 3.110.2 MW of solar PV and 6.220.7 MWh of battery energy storage. Ava is working on additional phases of this development with the Cities of Albany, Emeryville, Livermore, Oakland, Piedmont and Pleasanton. Ava successfully pursued congressionally directed funding for this work. Ava is now pursuing Department of Energy funding for grid and community resilience to scale this program up.

Ava has also initiated a program called Resilient Home that provides provided free quotes for solar and battery backup systems to homeowners, and through its partner Sunrun offers offered a \$500100-\$1250 rebate to customers that installinstalled a back-up system. In order to support vulnerable communities, Ava requires required that at least 20% of the installations be for low-income residents, medical baseline customers, and residents and businesses located in DACs. The program also helps support grid reliability during times of

normal operation by providing Ava with access to stored energy when demand is high. The goal is to deliverAva has delivered up to 52 MW of Load Modification via this program, resulting infrom over 1,000 Ava customers' solar and storage systems delivered to our customers by the end of 2022. The systems deployed by Resilient Home represented nearly 8 MW of solar PV and 14 MWh in battery energy storage across Ava's service area at the end of 2022. These systems were capable of delivering 2 MW of load modification. The Resilient Home fleet delivered 55 megawatt-hours 18 MWs of energy into California's grid during 2023 peak demand hours of 4 94 9 p.m. from September 1 8, 2022.

#### XI.E. Biomass Procurement

Like all RPS products Ava does evaluate biomass resources, but currently these resources have only been procured as short-term REC purchases from either a portfolio of resources or more recently, as part of an RPS Energy Sale Solicitation from an existing resource. The expensive nature of the resource, the lack of known or planned biomass facilities, and potential increased air pollutants in Ava's service territory especially in light of Ava's Board adopted goal of 100% carbon-free energy serving its demand by 2030, make biomass an unlikely candidate for near-term or future contracting. While considered carbon neutral in California emissions accounting, biomass produces significant pollutant emissions when combusted. Ava seeks to balance the increase in harmful pollutants caused by including biomass generation in its portfolios with the desire to demonstrate a balanced, diverse, and reliable portfolio. Finally, while opportunities for biomass contracting are limited, Ava does receive a share of these resources that IOUs are directed to procure through its Cost Allocation Mechanism allocation.

#### **XII.** Consideration of Price Adjustments

Consistent with SB 350, Ava reviews the prospects of incorporating price adjustments in contracts with online dates more than 24 months after the date of contract execution. As noted in the ACR, such price adjustments could include price indexing to key components or to the Consumer Price Index. Additionally, sellers may offer escalation factors in their prices. Current contracts resulting from Ava's previous RFOs do have damage costs due from the seller to Ava for project delays resulting in a later COD than specified in the agreement including in some instances providing replacement costs for product delivery deficiencies.

#### XIII. Curtailment Frequency, Cost, and Forecasting, Costs

This section responds to the questionstopics presented in section 6.13 of the ACR and describes Ava's strategies and experience so far in managing exposure to negative pricing events, overgeneration, and economic curtailment for Ava's region and portfolio of renewable generation resources.

#### XIII.A. Curtailment Frequency, Cost, and Forecasting

Due in large part to the rapid increase in the amount of wind and solar generating facilities that have been brought online across the western United States, the CAISO balance authority area has experienced an increasing frequency and magnitude of curtailment and negative pricing events. As of 20212022, the California Energy Commission reports California's utility-scale generation included 33,26040,494 MW of solar and 16,17313,938 MW of wind, in addition to behind-the-meter distributed renewable generation. This increased capacity results in discrete periods where the majority of load in the CAISO is served by solar and wind

http://energy.ca.gov/data-reports/energy\_almanac/california\_electricity\_data/2021\_total\_system\_electric\_generation\_https://www.energy.ca.gov/sites/default/files/2023-08/Total\_System\_Electric\_Generation\_2009-2022\_with\_totals\_ada.xlsx.

<sup>16</sup> See

resources. In March of 2023, the average percentage of renewables serving load was 33.7%. In the same month, the maximum 5-minute percentage of renewables serving load was 103.5%. Lastly, March saw a total of 571,590 MWh of economic solar generation curtailed.<sup>17</sup> To address the resulting instances of over-supply, the amount of curtailment of wind and solar in the CAISO has significantly increased each year, totaling 187 GWh in 2015, 308 GWh in 2016, 358 GWh in 2017, 461 GWh in 2018, 961 GWh in 2019 and 1,587 GWh in 2020.<sup>18</sup> As of the end of March 2021, the total curtailment of solar and wind to was already over 542 GWh. Curtailment is typically the highest during the months of March, April, and May when hydroelectric generation is historically at its highest and load on the electricity system is low.

Ava evaluated curtailment analyses as part of its 2022 Integrated Resource Plan going out to calendar year 2030. The analysis as part of the IRP indicated that in the absence of storage, solar curtailment would continue to increase in the outer years of the study period. However, with the additional storage, either paid with solar or standalone, the curtailment numbers for solar and wind drop significantly. Ava's most recent modeling of prices through 2030, conducted after the submittal of the IRP, shows that, on average, forward energy prices have been elevated given recent weather events and general concerns over supply. This increase in forward prices translates to higher mean prices which leads to a lower number of negative prices simulated for the first half of the next 10 years. Starting in 2027 and beyond, negative prices are expected to return with an average of 180 hours of negative events per year.

<sup>&</sup>lt;sup>17</sup> CAISO, Monthly Renewables Performance Report, March (Mar. 2023, available) Available at https://www.caiso.com/Documents/MonthlyRenewablesPerformanceReport\_Mar2023.htmlhttps://www.caiso.com/do cuments/monthlyrenewablesperformancereport-mar2023.html.

<sup>&</sup>lt;sup>18</sup> CAISO, Managing Oversupply, Wind and Solar Curtailment Totals, (updated May 5, 2020, available). Available

http://www.caiso.com/informed/Pages/ManagingOversupply.aspx.

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

Ava recognizes that the risk of overgeneration and negative pricing, particularly at midday, increases as solar penetration increases. Ava's analysis of day-ahead and real-time Locational Marginal Price ("LMP") trends over time confirms that the number of negative pricing events have indeed increased. Of concern is the occurrence of negative pricing events in the day-ahead markets. As Table 4 below shows, overgeneration the annual number of day-ahead and real-time price intervals that settled below \$0 at the DLAP PG&E price node.

Overgeneration in real-time markets is historically somewhat common, because it is a function of weather and unknown factors. The occurrence of negative pricing events in the day-ahead market through 20222023 meanwhile, suggests that there was a steady oversupply of resources on the CAISO system. Ava's analysis of forecasted negative pricing events over the next 10 years indicates that, given the current forward prices which are elevated from historical, there will be near zero negative pricing events through 2027. This is further illustrated by the forecasted increase in the number of hours per year of negative pricing starting in 2027 shown in Table 4 and Table 5.

Table 4. Day-ahead and Real-time LMPs: Count of Negative Pricing Events

Year	Count of Day Ahead Negative	Count of Real Time Negative Prices
	Prices	

<del>2014</del>	0	<del>201</del>
<del>2015</del>	0	157
2016	0	<del>366</del> <u>547</u>
2017	106	<del>557</del> 1,468
2018	83	<del>256</del> 494
2019	<del>164</del> <u>118</u>	<del>263</del> <u>920</u>
2020	31	<del>300</del> <u>797</u>
2021	14	<del>87</del> <u>542</u>
2022	23	<del>141</del> <u>683</u>
2023	<u>116</u>	1,021

Table 5. Number of Hours Per Year of Negative Pricing

Year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Hours	0	0	13	163	158	139	271	192	194	180	150

Ava simulates volatility in forward energy pricing using third-party provided price forecasts to inform its project evaluations. Additionally, Ava uses several forward curves that represent different underlying scenarios to model the exposure of its existing and potential future resource portfolio to negative pricing that extendextends beyond the 10-year planning horizon. Currently, Ava has four long-term generation resources on-line; Ava manages potential exposure to negative pricing in several ways across the planning horizon:

- Energy storage procurement: As described above, Ava sought cost-effective offers for renewables projects paired with energy storage and stand-alone energy storage as part of each RFO. From these, Ava has three executed RPS contracts that include battery storage and another four executed contracts for stand-alone storage projects.
- Resource diversification: Ava aims to avoid overreliance on any one technology type or
  geographic concentration, as demonstrated by its practice of evaluating offers as part of a
  portfolio and according to how they align with hourly demand. The benefits of resource
  diversification can be achieved through both technology and contract structures; Ava has

relied on both strategies in its procurement practices. In addition to Ava's portfolio of wind, solar and solar paired with storage, Ava has executed a contract for geothermal energy.

- Settlement location: Ava has signed agreements for projects with pricing that is PG&E DLAP hub-settled instead of p-node settled. Since hub settlement is an aggregation of multiple nodes, it may provide some protection from events at any single node. Hub settlement helps insulate Ava customers from basis risk associated with congestion-based negative pricing events at the p-node level.
- Contract provisions: Ava includes in its contracts a "curtailment cap" provision equal to 50 hours multiplied by a project's installed capacity. This provision allows Ava to curtail resources during negative pricing events, up to the established cap, without any financial impact. Curtailment caps help insulate Ava customers from negative pricing.

  Additionally, Ava has a right to curtail further beyond 50 hours with the requirement to compensate the seller.
- Ava's scheduling coordinator, Northern California Power Agency ("NCPA"), has the
  capability to perform production cost analysis based on various input assumptions to
  derived hourly market prices for energy and ancillary services. NCPA can simulate
  economic commitment and dispatch used by the CAISO day-ahead process to simulate
  economic curtailment and simultaneously optimize energy dispatch across the CAISO
  grid.

Ava will continue to evaluate the impacts of negative pricing over a rolling 10-year time frame and work with NCPA to ensure that the forecasts are updated regularly for the CAISO and Western Electricity Coordinating Council region when evaluating potential renewable projects.

Additionally, Ava will continue to evaluate the risks from negative pricing for current contracted renewable resources over the 10-year planning horizon. Ava's most recent quantitative analysis has forecasted a decrease in the number of zero or negative pricing events (i.e., the mean forecast) in the first half of the 10-year planning horizon as prices remaining elevated in the near time and this is in line with the general trend for public forecasts of CAISO system conditions. In evaluating these risks, neither Ava nor NCPA feel that there is a significant risk to Ava's portfolio of renewable resources. Ava will continue to use the tools discussed above to mitigate the impact of negative pricing on Ava's portfolio of renewable resources and will evaluate negative price risk when evaluating new projects as Ava continues the planning to meet our Board-adopted renewable energy goals.

XIII.C. Experience, To Date, With Managing Exposure to Negative Market

Prices and/or Lessons Learned from Other Retail Sellers in California

Ava is still building out its portfolio of long-term renewable energy projects and currently has fourseven projects that are online, one that came online in late 2020, two online in the middle and end of 2021, and the third online in April of 2022. Two additional projects arew

in 2023, and another project is expected

to reach commercial operation in January of 2024. The

Our first project that came, having come online in late 2020, is a hub settled at the price node agreement where Ava purchases energy that is delivered to the CAISO grid but financially settled at the PG&E DLAP (hub settled). This settlement arrangement, as discussed above, greatly reduces Ava exposure risk to negative market pricing as the netting process at that node in this structure would result in a lower payment from Ava for times that the project's Pricing node (P-node) is negative or zero. For the two Two projects that came online in

2021, the projectone that reached COD in December 2021and is settled as an index price
structured structure where there is no risk to Ava from negative pricing at the price P-node.

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

Ava has not incurred significant direct costs to date due to incidences of overgeneration and associated negative market prices due to the contract structure of three of our online projects. The fourth project that is settled at the projects P-node has had curtailment but as of this report that amount is still below the curtailment cap of the agreement. Ava and NCPA will continue to evaluate our current online projects and manage and continue to have diversity in project settlements to mitigate negative market pricing and over-generation.

#### XIV. Cost Quantification

Pursuant to the ACR, Ava has quantified the costs of its existing procurement activities using the Commission's Cost Quantification template and has included them in Appendix C. As discussed throughout this document, Ava does have several long-term RPS contracts resulting from its RFOs and the geothermal project executed bilaterally that are included in the Cost Quantification template. VAMO generation has been included in the Cost Quantification tables using a price proxy given the uncertainty around what the Market Price Benchmark ("MPB") will be in future years. Currently, Given the executed agreement resulting from the Market Offer is the only Ava contract awaiting approval from the Commission as part of a PG&E Advice Letter filing industry-wide delay in the issuance of RECs by WREGIS, and that Ava has not received all of its 2023 RECs to date, only cost estimates that are based on estimated generation have been included in this Draft 2024 RPS Plan.

#### XV. Coordination with the IRP Proceeding

Ava supports increased coordination and consolidation between the RPS and IRP proceedings. Alignment between the two proceedings improves administrative efficiency and makes practical sense; LSEs like Ava need to plan for additional resources to meet both RPS and GHG emission reduction goals. Ava strives for consistency between its IRP and RPS procurement plans, however the different timelines for reporting requirements under these two proceedings may result in deviations between the information in the 2022 IRP filing and this 2023 RPS Plan. Changes to RPS contracts that have occurred since Ava filed its IRP in September 2022 are reflected in this 2023 RPS Plan and summarized in Table 6 below. Moving forward, Ava supports consolidation between the RPS and IRP filing requirements to reduce

administrative burden on LSEs and Commission staff, as well as ensure comprehensive and consistent information sharing.

Table 6. Alignment of IRP and RPS Planning

IRP Section Subsection	RPS Alignment in IRPs
III. Study Results  A. Conforming and Alternative Portfolios	As part of its 2022 IRP filing, Ava submitted a single Preferred Conforming Portfolio that achieves a lower than its expected share of both the 30 and 25 MMT GHG target benchmarks. Under the single portfolio, Ava's currently contracted RPS resources are included and new resources are added to the portfolio to achieve the relevant GHG target as well as RPS procurement requirements, including the 65% long-term contracting requirement.
	<ul> <li>Description of Conforming Portfolio:</li> <li>Portfolio that achieves lower than Ava's proportional share of both a 30 and 25 MMT statewide GHG target</li> <li>Portfolio includes 540.3 MW of RPS resources (442.8 MW of solar, 40 MW geothermal and 57.5 MW of wind) that Ava has contracted with. The online dates of these resources are reflected in Ava's Portfolio.</li> <li>Greater preference for wind over solar due to higher assigned ELCC factors.</li> <li>Ava does not plan to contract with any long-term existing resources by 2030.</li> <li>The new RPS resources that Ava plans to invest in by 2030 include approximately 987 MW of wind and 205 MW of solar.</li> </ul>
IV. Action Plan  A. Proposed Activities	To ensure compliance with its GHG and RPS targets, Ava plans to rely on GHG-free and RPS-eligible resources to the extent possible while contributing to reliability requirements and maintaining affordability.
	Ava's compliance with the IRP incremental procurement obligation required by D.19-11-016 will be met through a mix of resources currently under contract and in negotiation. The contracted set of resources is comprised of a total of 13wind, solar, geothermal solar-plus-storage, and stand-alone storage resources.
	Ava's 2023 RPS RFO was developed and informed by a supplemental analysis to its IRP Study. Ava's 2022 IRP

	filing could not include the City of Stockton's demand in the Preferred Conforming Portfolio as the approval for inclusion in Ava's service territory took place shortly after modeling for the IRP was complete. The RFO solicited resources that address needs in Ava's portfolio identified by the IRP and the supplemental analysis and is based on the inclusion of the City of Stockton.
IV. Action Plan  B. Procurement Activities	Ava's 2022 RFO resulted in executed agreements for four projects. The projects have a range of CODs beginning in 2023 through 2025 and include one project that is already online and delivering RA. Ava also executed a 40 MW long-term bilateral contract that is expected to come online later in the decade.  Ava's 2023 RFO launched in March of 2023 with the goal of the solicitation being to contract new resources to contribute energy, renewable energy and attributes, and RA to support Ava's increased demand as the City of Stockton joins Ava's service territory in 2025.
IV. Action Plan  C. Potential Barriers	Key market, regulatory, financial, or other resource viability barriers or risks associated with the RPS resources coming online in Ava's Conforming Portfolio include uncertainty regarding the future RA value of renewable and storage resources, uncertainty around the cost declines forecasted for wind and solar resources, and viability of long-lead time resources such as out-of-state or offshore wind, price increases and reduction in availability of core components resulting in uncertainty for project completion.  No existing resources were included in the Conforming Portfolio.  However, in October 2022, Ava entered into a five-year agreement for a 34 MW existing biomass facility. Key risks associated with the potential retirement of this existing RPS resource include the possibility of under-procurement of long-term RPS contracts and increased costs associated with filling this position.

## XVI. <u>Impact of Transmission and Interconnection Delays</u>

This section is not applicable to Ava as it does not own any electrical transmission assets.

## Appendix B

2024 RPS Procurement Plan Checklist and RPS Plan Template

## 2024 RPS Procurement Plan Checklist – Task Completed

Retail seller name: Ava Community Energy	YES/NO	NOTES
I. Major Changes to RPS Plan	YES	
II. Executive Summary Key Issues	YES	
III. Summary of Legislation Compliance	YES	
IV. Assessment of RPS Portfolio Supplies and Demand	YES	
IV.A. Portfolio Supply and Demand	YES	
IV.A.1. Portfolio Optimization	YES	
IV.B. Responsiveness to Local and Regional Policies	YES	
IV.B.1. Long-term Procurement	YES	
IV.C. Portfolio Diversity and Reliability	YES	
IV.D. Lessons Learned	YES	
V. Project Development Status Update	YES	
VI. Potential Compliance Delays	YES	
VII. Risk Assessment	YES	
VIII. Renewable Net Short Calculations	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 Renewable Sales	YES	
X.B. Bid Selection Protocols	YES	
X.C. LCBF Criteria	YES	
XI. Safety Considerations	YES	
XII. Consideration of Project Adjustment Mechanisms	YES	
XIII. Curtailment Frequency, Forecasting, Costs	YES	
XIV. Cost Quantification	YES	
XV. Coordination with the IRP Proceeding	YES	
XVI. Impact of Transmission and Interconnection Delays	YES	
XVII. Appendix A: Redlined Version of the Draft 2023 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 <sup>7/22/2024</sup> at Oakland, CA.
Howard Chang 5A1AEE4A3D1C415
Howard Chang, CEO, Ava Community Energy
1999 Harrison St, Suite 2300
Oakland, CA 94612

## Appendix C: RNS Calculation

(Public Version)

#### Renewable Net Short Calculations - 2020 RPS Procurement Plans

	С	D	E	F	G	Н	1	J	K	L	M	N	0	Р	Q	R	S	T	U	V	W	Х	Υ	Z	AA
LSE	Name:				Inputrequired			No inputrequired			Hard-coded														
Date	Filed:				_																				
			-																						
	Variable	Calculation	hem	2017 Actual	2018 Actual	2019 Actual	2020 Actual	2017-2020	2021 Actual	2022 Actual	2023 Actual	2024 For ecast	2021-2024	2025 Forecast	2026 Forecast	2027 Forecast	2025-2027	2028 Forecast	2029 For ecast	2030 Forecast	2028-2030	2031 For ecast	2032 Forecast	2033 Forecast	2034 Forecast
			Forecast Year					CP3				1	CP4	2	3	4	CP5	5	6	7	CP6	8	9	10	11
			Armal RFS Requirement																						
	A		Total Retail Sales (MWh)		2,286,978	5,821,426	5,877,879	13,986,283	6,410,619	6,532,208	6,483,861					8,091,301		8,133,562	8,134,449	8,181,340	24,449,351	8,509,778	8,603,456	8,678,140	8,857,292
1	R		RIS Procurement Quantity Requirement (%)	27.0%	29.0%	31.0%	33.0%	31.5%	35.8%	38.5%	41.3%	44.0%	39.9%	46.7%	49.3%		49.4%	54.7%	57.3%	60.0%	57.3%	60.0%	60.0%	60.0%	60.0%
1	С	A*B	Gross RPS Procurement Quantity Requirement (MWh)	-	663.224	1,804,642	1,939,700	4,407,565.7	2,291,796	2,514,900	2,674,593					4,207,477		4,446,618	4,663,479	4,908,804	14,018,901.7	5,105,867	5,162,073	5,206,884	5,314,375
)	D		Voluntary Margin of Over-procurement (MWh)		217,263	436,607	362,062	1,015,932	349,274	1,457,934	1,767,665					1,717,521		1,688,888	1,713,430	1,745,638	5,147,956	1,975,471	1,826,507	1,544,884	1,437,496
1	E	C+D	Net RPS Procur ement Need (MWh)		880.486	2,241,249	2,301,762	5,423,498	2,641,071	3,972,834	4,442,258					5,924,998		6,135,506	6,376,909	6,654,442	19,166,858	7,081,338	6,988,580	6,751,768	6,751,871
			RIS-Higble Procurement																						
	Fa		Risk-Adjusted RECs from Online Generation (MWh)		949,920	3,736,625	2,235,441	6,921,986	2,689,072	3,938,702	4,409,318					3,798,022		3,530,395	3,479,727	3,466,891	10,477,013	3,378,938	3,139,613	3,015,293	2,813,918
1	Faa	l .	Forecast Failure Rate for Online Generation (%)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	0.5%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
5	Pb		Risk-Adjusted RECs from RPS Facilities in Development (MWh)	1				-	-			-	10,10			1,036,618		1,382,488	1,456,177	1,710,914	4,549,579	1,706,376	1,701,851	1,697,339	1,692,843
<del>,</del> —	Fbb		Forecast Failure Rate for RPS Facilities in Development (%)		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	1.3%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
7	Fc		Pre-Approved Generic RECs (MIVh)														-						-	$\overline{}$	
	Fd		Executed REC Sales (MWh)														-								
	F	Fa+Fb+Fc-Fd	Total RPS Higible It ocurement (MWIs)		949,920	3,736,625	2,235,441	6,921,986	2,689,072	3,938,702	4,409,318					4,834,640		4,912,883	4,935,904	5,177,805	15,026,592	5,085,314	4,841,464	4,712,632	4,506,761
	R0		Category 0 RBCs																				$\overline{}$	$\overline{}$	
	Fl		Category 1 RECs		390,395	2,036,704	1,390,322	3,817,421	1,643,617	2,703,466	3,255,360					4,943,573		5,034,502	5,060,627	5,315,760	15,410,889	5,221,323	4,972,401	4,840,960	4,632,242
2	F2		Category 2 RHCs		524,525	1,599,921	854,545	2,978,991	1,045,455	1,206,106	1,207,615												$\overline{}$		
3	F3		Category 3 RBCs		35,000	100,000		135,000		29,130													$\overline{}$		
4			Gross RPS Position (Physical Net Short)																						
5	Ga	FE	Armul Gross RPS Position (MWh)	-	69,434	1,495,376	(66,321)	1,498,488	48,001	(34,132)	(32,940)					(1,090,358)		(1,222,624)	(1,441,005)	(1,476,637)	(4,140,266)	(1,996,024)	(2,147,116)	(2,039,136)	(2,245,110)
5	Gb	F/A	Armal Gross RFS Position (%)	0%	42%	64%	38%	49%	42%	60%	68%					60%		60%	61%	63%	61%	60%	56%	54%	51%
7			Application of Bank																						
	Ha	J-Hc (from previous CP)	Existing Banked RECs above the PQR						56,655				56,655	-							-				
9	Hb	i i	RHCs above the PQR added to Bank				56,655	56,655													-		$\overline{}$	-	
0	Hc	Ì	Non-barkable RECs above the PQR					-																	
1	Н	Ha+Hb	Gross Balance of RECs above the PQR	-		-	56,655	56,655	56,655	-	-														
2	la		Planned Application of RECs above the PQR towards RPS Compliance						56,655																
3	ь		Planned Sales of R HCs above the PQR					-																	
4	J	Hla-b	Net Balance of RECs above the PQR				56,655	56,655																	
5	jo ot		Category 0 RBCs																						
6	л		Category 1 RECs				56,655	56,655					-				-				-				
7	В		Category 3 Bundled R HCs (Non-CBA Utilities Only)*					-													-				
3			Expiring Contracts																						
9	K		RECs from Expiring RPS Contracts (MWh)																		-				
			Net RPS Position (Optimized Net Short)																						
0																									
l l	La	Ga+la-lb-Hc	Annual Net RPS Position after Bank Optimization (MWh)		69,434	1,495,376	(66,321)	1,498,488	104,656	(34,132)	(32,940)														

A3 Note: All values are to be input in MWhs
50 10.17-11-037 provides for utilities serving load in areas outside California Independent System Operator Balancing Authority (Non-CBA Utilities) to bank excess bundled PCC3 RECs
70 134
135
136
137
137
138



## Appendix D: Cost Quantification

(Public Version)

The first   The control of the con														
Teach   Teac		В	С	D	E Innut Remised	F		Н	- 1	J	K	L	M	
No.   Conditionate blooks and colors					input required		No Input Required							
The Company of Compa		•												
1	5													
Process of Form   Control   Contro	6 Tal		Actual RPS-Eligible		eneration Net Costs									
The Control of Contr	7 1		2021		2023									
1	8 2	Biogas: Digester Gas												
1	10 4	Biodiesel												
	11 5	Biomass Muni Solid Waste	\$286,851	\$659,399	\$10,328,374									
1	13 7	Geothermal		\$358,834										
1	14 8 15 9	Small Hydro (Non-UOG) Conduit Hydro	\$148,507	\$629,127	\$4,618,148									
1	16 10	Water Supply / Conveyance												
The Control of Process of Proce	18 12	Ocean Thermal												
The Company Company   The Company Company   The Company Company   The Company Compan	19 13		\$19.098.246	\$14 010 559	\$39 249 508									
1	21 15	Solar Thermal			675 000 000									
Total Content   Total Conten	23 17	Unbundled RECs (REC Only)	\$19,699,980		\$15,223,232									
1	24 18	Various (Index Plus REC)***												
1	26 20	UOG: Small Hvdro												
2	27 21 28 22	UOG: Solar PV UOG: Other												
1	29 23	Executed REC Sales (Revenue)												
1	30	-	411,111,111	\$33,985,546	4101,011,000									
	31 25 32 26	Total Retail Sales (MWh)		6,532,208 0,520276545										
1	33					•								
1		Cost Quantification (Forecast Costs and Revenues \$1					Forecast RPS-Elini	ble Procurement Cos	ts and Revenues (\$	)				
Purchase and Seath		Executed But Not Approved RPS-Eligible Contracts	2024	2025	2026	2027					2032	2033	2034	
2   3		(Purchases and Sales)**	2027	2020	2020	202.			2000	200.	2002	2000		
2	38 3	Biogas: Landfill Gas									l		<del>                                     </del>	
1	39 4	Biodiesel												
Compared		Biomass												
S	41 6							1						
5   5   Water Supply Consequence	43 8													
1														
20   12   Covers Thermal														
1														
Signature   Sign	48 13													
15   16   Word	49 14													
22   17	50 15	Solar Thermal Wind									1			
Fig. 20	52 17	Unbundled RECs (REC Only)												
1														
5														
Secretary   Content   Co														
Total Executed that fix A percover BPS Eligible   Security   Sec														
Procurement and Generation Cost	_													
12   72   Incremental Ret Impact   200   100	29	Procurement and Generation Cost												
Security														
20   20   20   20   20   20   20   20	_	Executed RPS-Eligible Contracts (Purchases and	0004	0005	0000									
Borness	62	Sales)****	2024	2025	2026	2021	2028	2029	2030	2031	2032	2033	2034	
Bostness   \$3.207.310   \$3.207.310   \$3.207.310   \$2.008.405											l			
Mart Sold Waste	65 31	Biodiesel												
88 34 Geothermal   \$17,195,094			\$3,207,310	\$3,207,310	\$3,207,310	\$2,998,485					ļ			
Second Hydro (New LOCK)   Second Hydro (Ne	68 34	Muni Solid Waste Geothermal							\$17,195,094	\$17.195.094	\$17.195.094	\$17.195.094	\$17.195.094	
72   37	69 35	Small Hydro (Non-UOG)												
27   38														
23   99											<b> </b>	-	<del></del>	
Test Current   South Plane											l			
South Thermal   South Therma														
18			\$20,989,039	\$21,867,361	\$23,805,084	\$48,596,744	\$57,464,879	\$60,398,695	\$60,120,366	\$59,842,600	\$59,565,317	\$59,288,686	\$59,012,562	
18	77 43	Wind	\$24,128.685	\$23,026.613	\$23,026.613	\$51,880.958	\$61,499.089	\$61,499.089	\$61,499.089	\$57,742.804	\$45,200.404	\$45,200.404	\$45,200.404	
Foot Cell	78 44													
12   48		Various (Index Plus REC)***	\$103,871,794	\$97,009,517	\$63,067,403	\$59,034,084	\$58,856,747	\$57,448,058	\$57,190,339	\$56,361,697	\$54,940,692	\$51,233,649	\$45,427,988	
22   49		Fuel Cell LIOG: Small Hydro									<b> </b>	<b>-</b>	<b> </b>	
Signature   Sign	82 49	UOG: Solar PV									1	<b> </b>		
1	83 50													
and Generation Cest  Total Ren's See (MVIV)  Total Incremental Rate Impact  Total Ren's See (MVIV)  Total Ren's See (MVIV		Executed REC Sales (Revenue)												
27   54   Incremental Ret Impact   2,004446956   2,00524		and Generation Cost	\$152,196,828	\$145,110,800	\$113,106,410									
State   Total Reside Procurement and Generation Cost   State	86 53	Total Retail Sales (MWh)				8,091,301 2,008456556	8,133,562	8,134,449				8,678,140		
75 0 Total Incremental Rate Impact 2.001465556 2.10625805 2.204789507 2.396755316 2.246167946 2.001480306 1.992567944 1.883001064  70 Water Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpuc.ca.gov/RPSComplianceReporting/	88 55					\$162,510,271	\$177,820,715	\$179,345,841						
19. Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpu.ca.gov/RPSComplianceReporting/ 1997 "Nature For contracts that have been exceeded to 4.18 regarder formal approval (PCNC or other formal approval process) for purchases and cales.  For contracts that have been exceeded to 4.18 regarder formal approval process for purchases and cales.  For contracts that have been exceeded to 4.18 regarder formal approval process for purchases and cales.  For contracts that have been exceeded to 4.18 regarder formal approval process.  For contracts that have been approved through referent approved process.	89 56													
102 "Nate: Technology definitions are given in the PCC Quastification fundance located in the PRS Compliance Reporting section of https://www.upcc.ago//RPSComplianceReporting/ 301 "Nate: Technology definitions are given in the PCC Quastification and promised for purpose of purpose and pur	90													
54 ""Yole: The "Various" technology type is to be used in the case of contracts encompassing multiple facilities where the generation type is not yet known.  59 ""Yole: The "Various" technology type is to be used in the case of contracts encompassing multiple facilities where the generation type is not yet known.  50 ""Yole: The "Various" technology type is to be used in the case of contracts enter the present of the present the prese	92 *Note:	Technology definitions are given in the PCC Classification Ma	adbook located in the	RPS Compliance Per	orting section of http:	s//www.couc.ca.cou//	RPSCompliancePero	rting/						
44   ""Note: In "Various" Inchrology type is to be used in the case of contracts encompassing multiple facilities where the generation type is not yet known  50 ""Wolder" For I/OUs and SM/Us: 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.	93 **Note:	For contracts that have been executed but still require formal:	approval (CPLIC or off	er formal approval pr	ncess) for nurchases	and sales								
95	95 ****Note:	rine various technology type is to be used in the case of con For IOUs and SMJUs: Include all executed contracts that requ	tracts encompassing t ired CPUC approval. I	numple facilities wher For CCAs and ESPs:	e tne generation type Include all executed o	is not yet known ontracts that have bee	en approved through r	elevant formal approv	al processes.					
	96													

The contract interference of the part   Property   Pr			С		E	F	G	Н	1	J	К	L	M	
Second   Company   Compa				Input Required		No Input Required								
Part	Date Fil	ed:	j											
Part	1													
Part						,								
	Table :	3: Cost Quantification (Actual Procurement / Generation and Sales, MWh)	Actual RPS-Eligible	Procurement / General	tion and Sales (MWh)	l								
	1	Technology Type* (Procurement / Generation and Sales)	2021	2022	2023									
	2	Biogas: Digester Gas												
				-	36,333									
March Services   March   Mar	. 5	Biomass	24,840	75,978	586,879									
		Muni Solid Waste		44.040	404.000									
			12.860											
	9	Conduit Hydro												
Company   Comp		Water Supply / Conveyance				ł								
	12	Ocean Thermal				1								
Control   Cont	13	Tidal Current												
		Solar PV (Non-UOG)	1,238,065	1,614,340	1,415,353									
1	16	Wind	1,430,672	2,090,043	2,147,184									
The Confidence of Fernance of Confidence o		Unbundled RECs (REC Only)		29,130										
Companies   Comp				1	1	ł								
1	20	UOG: Small Hydro												
Second Position   Property   Control of December   Control of De	21	UOG: Solar PV		l	l	ł								
The Control	23	Executed REC Sales (MWh)		<u> </u>	<u> </u>	l								
Function of the Approved Psignals Control principles and Service (1997)   200   20			2,706,437	3,923,327	4,433,620	J								
Function of the Approved Psignals Control principles and Service (1997)   200   20														
Function of the Approved Psignals Control principles and Service (1997)   200   20		ost Quantification (Forecast Procurement / Generation and Sales, MWh)					Forecast RPS-Eligi	ole Procurement / Gener	ration and Sales (MWh)					
P	1.		2024	2025	2026	2027				2024	2022	2022	2024	1
Begins Leaff Clase	<u>'</u>	••	2024	2025	2020	2021	2020	2029	2030	2031	2032	2033	2034	1
Company	3	Biogas: Digester Gas		1	1		1	1	1				1	4
Books	4		1	<b>†</b>	<b>†</b>		1	†	<del>                                     </del>			1	1	1
Control   Cont	5			1	1		1					1	1	1
Conference														1
Conclusion		Geothermal												1
Water Supply Conveyance		Small Hydro (Non-UOG)												1
Water Supply Conveyance	9													]
2	10							1						1
Title Content														_
See Set Prince   See Set Set														4
Solid Thomas														4
19														4
13	16													4
19   Votices (Pack REQC)**	17													1
Fact Call														1
1														1
23   UGC Order	21													1
Executed REC State (NYM)														
Total Executed But Not Approved Bpt Hot Bpt														1
Executed and Approved RPS-Eligible Contracts (Purchases and Sules) ***   2024   2025   2026   2027   2028   2029   2030   2031   2032   2033   2034														_
Biogas Digenter Gas					_				-			-	-	4
Blogiss Land II Gas Blodiest 281,343 281,343 281,343 281,343 281,025	26	Executed and Approved RPS-Eligible Contracts (Purchases and Sales) ****	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
Bloques Land If Gas Blodesed 28,1343 281,343 2								L						]
Biomass 28,343 281,343 281,343 281,343 281,343 281,025	28	Biogas: Landfill Gas												1
Mail Sold Waste	. 29			1	1		L							1
Gerbannel			281,343	281,343	281,343	263,025	ļ					ļ		4
Smill Hydro (No-LOC)		1		ļ	ļ			1						4
Condit Hydro   Cond				<b> </b>	<b> </b>	ļ	1		272,938	272,938	272,938	272,938	272,938	4
Water Supply / Consequence				1	1		1	+				1		1
Cosen Never			1	<b>†</b>	<b>†</b>		1	†	<del>                                     </del>			1	1	1
37   Cease Thermal							1	1						1
38 Tidal Current 39 Silver PV (Non-LOG) 40 Solar Thermat 41 Whot 405,414 405,414 405,414 849,227 997,298 997,2			1	1	1		ì	1	1			1	1	1
39 Solar FPV (No. 10G) 1,000.508 1,100.508 1,101.000 1,172.105 1,700.308 1,502.530 2,006.23 2,007.373 2,006.620 1,599.882 1,591.156 1,502.442   41 Wrid 405.414 405.414 405.414 846.327 997.208 997.208 997.208 997.208 997.208 745.540 746.549 746.549   42 Ushbundler REC (REC Orly) 2 2,860.018 2,780.772 2,219.005 2,009.832 2,004.673 2,037.196 2,008.152 2,000.253 1,593.032 1,593.031 1,503.031   43 Various (nice YB-REC)*** 2,860.018 2,780.772 2,219.005 2,009.832 2,004.673 2,037.196 2,008.152 2,000.253 1,593.032 1,593.031 1,503.031   45 Fuel Cell 2				İ	İ									1
41 Word 405,414 405,414 405,414 849,327 997,298 997,298 997,298 997,298 997,298 746,549 746,549 746,549 42 Unbundlet RECs (REC Crity) 2 2,800,018 2,780,272 2,219,005 2,009,832 2,004,673 2,037,195 2,028,152 2,000,253 1,830,317 1,830,313 45 Fuel Cell 2 2,000,000 Fuel Coll 2 2,000,000 Fuel Fuel Coll 2 2,000,000 Fuel Fuel Coll 2 2,000,000 Fuel Fuel Fuel	. 39		1,060,536	1,101,030	1,172,105	1,740,389	1,952,530	2,026,133	2,017,373	2,008,623	1,999,882	1,991,156	1,982,442	]
42 Urbounded REC Set (REC Only) 43 Various (Index Plas REC)** 44 Various (Index Plas REC)** 45 Foul Cell 46 UGO: Small Hydro 47 UGO: Solar PV 48 UGC Clother 49 Euclided REC Salas (Wh) 50 Total Executed and Approved RPS-Eligible Procurement 4 (A67,311 4,686,99) 4,677,867 4,943,573 5,034,501 5,666,630 5,315,761 5,221,323 4,972,401 4,840,960 4,632,242  **Note: **Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting **Note: Technology definitions are given in the PCC Classification H														]
43 Various (neter Plus RCC)***  45 Fuel Cell  46 UGC: Small Hydro  47 UGC: Solar PV  48 UGC: Small Hydro  48 UGC: Small Hydro  49 Executed RCC Sales (NVm)  49 Executed RCC Sales (NVm)  40 Executed RCC Sales (NVm)  41 Total RCP Eligible Procurement (NVm)  42 A507,311 4,560,059 4,077,867 4,943,573 5,034,501 5,060,626 5,315,761 5,221,323 4,972,401 4,840,960 4,632,242  51 Total RCP Eligible Procurement (NVm)  48 A507,311 4,560,059 4,077,867 4,943,573 5,034,501 5,060,626 5,315,761 5,221,323 4,972,401 4,840,960 4,632,242  51 Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/  **Note:**  **Note:**  **Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/  **Note:**  **Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/  **Note:**  **Note:**  **Note:**  **Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/  **Note:**			405,414	405,414	405,414	849,327	997,298	997,298	997,298	939,509	746,549	746,549	746,549	1
45 Fuel Cell 46 UDC: Small Hylps 47 UDC: Stall Pylos 48 UDC: College 49 EUGLOC Real Hylps 50 Total Executed and Approved RPS-Eligible Procurement 4,667,311 4,568,099 4,677,867 4,943,573 5,034,501 5,060,626 5,315,761 5,221,323 4,372,401 4,840,960 4,632,242 7,740 1,740,740 1,74								1						1
46 UOG: Small Hydro 47 UOG Solar PV 48 UOG: Gother P 49 Executed REC 5846 (MVh) 49 Executed REC 5846 (MVh) 40 Executed REC 5846 (MVh) 40 Total Executed and Approved RPS-Eligible Procurement 4,687,311 4,568,059 4,077,887 4,943,573 5,034,591 5,069,626 5,315,761 5,221,323 4,972,491 4,840,960 4,532,242 51 Total RPS Eligible Procurement (MWh) 4,587,311 4,568,059 4,077,887 4,943,573 5,034,591 5,069,626 5,315,761 5,221,323 4,972,491 4,840,960 4,532,242 51 Total RPS Eligible Procurement (MWh) 4,587,311 4,568,059 4,077,887 4,943,573 5,034,591 5,069,626 5,315,761 5,221,323 4,972,491 4,840,960 4,532,242 51 Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/ **Note:** Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/ **Note:** Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/ **Note:** Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/ **Note:** Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/ **Note:** Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/ **Note:** Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/ **Note:** Technology definitions are given in the PCC classification Handbook located in the RPS ComplianceReporting/ **Note:** Technology definitions are given in the PCC classification Handbook located in the RPS Compli			2,860,018	2,780,272	2,219,005	2,090,832	2,084,673	2,037,195	2,028,152	2,000,253	1,953,032	1,830,317	1,630,313	J
46 U.G.: Coher P/ 48 U.G.: Solder P/ 49 Executed REC Sales MM(h) 49 Executed REC Sales MM(h) 50 Total Executed and Approved RPS-Eligible Procurement (RWh) 4,667,311 4,568,699 4,677,867 4,943,573 5,034,501 5,005,266 5,315,761 5,221,323 4,972,401 4,840,960 4,522,422 51 Total RPS Eligible Procurement (RWh) 4,667,311 4,566,099 4,077,867 4,943,973 5,034,501 5,005,266 5,315,761 5,221,323 4,972,401 4,840,960 4,522,422 51 Total RPS Eligible Procurement (RWh) 4,667,311 4,566,099 4,077,867 4,943,973 5,034,501 5,005,268 5,315,761 5,221,323 4,972,401 4,840,960 4,522,422 51 51 Total RPS Eligible Procurement (RWh) 4,667,311 4,566,099 4,077,867 4,943,973 5,034,501 5,005,268 5,315,761 5,221,323 4,972,401 4,840,960 4,522,422 51 51 Total RPS Eligible Procurement (RWh) 4,667,311 4,566,099 4,077,867 4,943,973 5,034,501 5,005,268 5,315,761 5,221,323 4,972,401 4,840,960 4,522,422 51 51 Total RPS Eligible Procurement (RWh) 4,667,311 4,566,099 4,077,867 4,943,973 5,034,501 5,005,268 5,315,761 5,221,323 4,972,401 4,840,960 4,522,422 51 51 Total RPS Eligible Procurement (RWh) 4,667,311 4,566,099 4,077,867 4,943,973 5,034,501 5,005,268 5,315,761 5,221,323 4,972,401 4,840,960 4,522,422 51 51 Total RPS Eligible Procurement (RWh) 4,667,311 4,566,099 4,077,867 4,943,973 5,034,501 5,005,268 5,315,761 5,221,323 4,972,401 4,840,960 4,522,422 51 51 51 51 51 51 51 51 51 51 51 51 51			1	1	1	l	1		1		I.	1	I.	1
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49 Executed REC 24849 AVM) 50 Total Executed Approved RPS-Eligible Procurement 4,697,311 4,568,099 4,977,867 4,943,573 5,034,591 5,968,626 5,315,761 5,221,323 4,972,491 4,840,960 4,632,242 51 Total RPS-Eligible Procurement (MWh) 4,667,311 4,568,099 4,077,867 4,943,573 5,034,591 5,006,626 5,315,761 5,221,323 4,972,491 4,840,960 4,632,242 51 Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpu.ca.gov/RPSComplianceReporting/ **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpu.ca.gov/RPSComplianceReporting/ **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpu.ca.gov/RPSComplianceReporting/ **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpu.ca.gov/RPSComplianceReporting/ **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpu.ca.gov/RPSComplianceReporting/ **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpu.ca.gov/RPSComplianceReporting/ **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpu.ca.gov/RPSComplianceReporting/ **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: https://www.cpu.ca.gov/RPSComplianceReporting/ **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS ComplianceReporting/ **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS ComplianceReporting/ **Note: Technology definitions are given in the PCC Classification Handbook loca				1	1		1	1	1			1	1	1
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Total RPS Eligible Procurement (MWn) 4,567,311 4,568,059 4,077,867 4,943,573 5,034,501 5,080,526 5,315,761 5,221,323 4,972,401 4,840,960 4,832,242  **Note: Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting section of: Mtps://www.cpu.ca.gov/RPSComplianceReporting/  **Note: For contracts that have been executed but still require formal approval (CPUC or other formal approval approval or classification share) and sizes.  **Technology definitions are given in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the RPS Compliance Reporting or in the PCC Classification Handbook located in the PCC Classification Handbook located in the PCC Classification Handbook located in the PCC Classification Handbook located in the PCC Classification Handbook located in the PCC Classification Handbook located in the PCC Classification			4,607,311	4,568,059	4,077,867	4,943,573	5,034,501	5,060,626	5,315,761	5,221,323	4,972,401	4,840,960	4,632,242	4
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	51													4
"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 contracts that have been executed but still require formal approval (CPUC or other formal approval approval approval) (CPUC or other formal approval approval approval) (CPUC or other formal approval approval) (CPUC or other formal approval) (C	*Note:	Technology definitions are given in the PCC Classification Handbook located in 1	the RPS Compliance Re	porting section of: https:/	//www.cpuc.ca.gov/RPS0	ComplianceReporting/								
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## Appendix E: Bid Solicitation

[Not available with Draft RPS Plan]

## Appendix F: Pro Forma Agreement

[Not available with Draft RPS Plan]

## Appendix G

## Project Development Status

(Public Version)

A	В	С	D	E	F	G	н		1	К	L	M	N	0	P	Q	R	S	Т	U	v	w
Reporting LSE Name	RPS Contract ID	Project Name	Technology Type	Project Development Phase	City	County	State	Zip Code	Latitude	Longitude	Contract Length (Years)	Contract Execution Date (mm/dd/yyyy)	Contract Start Date (mm/dd/yyyy)	Contract End Date (mm/dd/yyyy)	Contract Capacit	y Expected Annual Generation	Total Contract Volume	Commercial Operation Date (COD)	Transmission Status	Storage: Rated Power (MW)	Storage: Capacity (MWh)	Project Notes
2 East Bay Community Energy (EBCE)	EBCE70001	Altamont	Wind	Post-Construction	Livermore	Alameda	CA	94551	37.76	-121.69	20	7/9/2019	7/2/2021	7/1/2041	54.80	205,858.00	4,117,153.00	7/2/2021				Began deliveries in July, 2021.
Bast Bay Community Energy (EBCE)	EBCE50002	Luciana	Solar PV - Ground mount	Post-Construction	Richgrove	Tulare	CA	93261	35.82	-119.06	18	6/10/2019	4/29/2022	4/28/2040	55.83	153,967.61	2,771,417.00	4/29/2022				Began deliveries in April, 2022.
4 East Bay Community Energy (EBCE)	EBCES0003	Scarlet I	Solar PV - Ground mount	Post-Construction	Tranquility	Fresno	CA	93668	36.59	-120.40	20	6/21/2019	5/3/2024	5/2/2044	100.00	290,333.52	5,806,670.39	5/3/2024		30.00	120.00	Began deliveries in May, 2024.
East Bay Community Energy (EBCE)	EBCESO001	Rosamond	Solar PV - Ground mount	Post-Construction	Rosamond	Kern	CA	93560	34.85	-118.38	15	7/26/2019	12/21/2020	12/20/2035	112.00	321,385.13	4,820,777.00	12/21/2020				Began deliveries in December, 2020.
6 East Bay Community Energy (EBCE)	EBCE70002	Tecolote	Wind	Post-Construction	Duran	Guadalupe	NM	88301	34.41	-105.37	10	12/20/2021	12/20/2021	12/19/2031	100.00	334,332.00	3,343,320.00	12/20/2021				Began deliveries in December, 2021.
7 East Bay Community Energy (EBCE)	EBCES0006	Daggett South	Solar PV - Ground mount	Post-Construction	Daggett	San Bernadino	CA	92327	34.87	-116.78	15	9/29/2021	9/5/2023	9/4/2038	50.00	157,488.20	2,362,323.00	9/5/2023		12.50	50.00	Began deliveries in September, 2023.
8 East Bay Community Energy (EBCE)	EBCES0008	Oberon	Solar PV - Ground mount	Post-Construction	Desert City	Riverside	CA	92239	33.72	-115.36	15	9/3/2021	1/1/2024	12/31/2038	125.00	366,290.47	5,494,357.00	1/1/2024		125.00	500.00	Began deliveries in January, 2024.
East Bay Community Energy (EBCE)	EBCE30001	Corsac Station	Geothermal	Pre-Construction	Fernley	Churchill	NV	89408	39.71	-118.91	15	4/6/2022			40.00	303,485.60	4,552,284.00					
10 East Bay Community Energy (EBCE)	EBCESO010	Easley I	Solar PV - Ground mount	Pre-Construction	Desert Center	Riverside	CA	92239	33.75	-115.36	10	2/28/2024			75.00	217,381.00	2,173,810.00					
East Bay Community Energy (EBCE)	EBCES0011	Easley II	Solar PV - Ground mount	Pre-Construction	Desert Center	Riverside	CA	92239	33.75	-115.36	10	2/28/2024			75.00	217,381.00	2,173,810.00					
12 East Bay Community Energy (EBCE)	EBCE70003	Sunzia	Wind	Construction	Corona	Lincoln	NM	88318	34.35	-105.60	15	11/17/2023			250.00	789,179.00	11,837,685.00					
13 East Bay Community Energy (EBCE)	EBCES0009	Sun Pond	Solar PV - Ground mount	Pre-Construction	Wintersburg	Maricopa	Arizona	85354	33.38	-112.83	20	12/5/2023			42.50	115,007.30	2,300,146.00			42.50	170.00	
East Bay Community Energy (EBCE)	EBCE50012	Zeta Solar	Solar PV - Ground mount	Pre-Construction	Los Banos	Merced	California	93635	36.92	-120.82	20	2/14/2024			37.50	98,266.20	1,965,324.00			37.50	150.00	
15 East Bay Community Energy (EBCE)	EBCE50013	Imperial Sun	Solar PV - Ground mount	Pre-Construction	Bonds Corner	Imperial	CA	92250	32.68	-115.31	15	5/6/2024			100.00	230,831.47	3,462,472.00			100.00	400.00	
East Bay Community Energy (EBCE)	EBCESO014	Rosemary	Solar PV - Ground mount	Pre-Construction	Helm	Fresno	CA	93627	36.53	-120.10	20	7/2/2024			70.00	186,637.95	3,732,759.00			70.00	280.00	
17 East Bay Community Energy (EBCE)	EBCES0019	Hayward 1	Solar PV - Ground mount	Pre-Construction	Hayward	Alameda	CA	94545	37.66	-122.14	20	2/28/2024			0.56	21485.00	1074.25		·			
18 East Bay Community Energy (EBCE)	EBCES0017	Oakland 2	Solar PV - Ground mount	Pre-Construction	Oakland	Alameda	CA	94607	37.8202	-122.3015	20	2/28/2024			0.72	29989.00	1499.45		·			
East Bay Community Energy (EBCE)	EBCES0018	San Leandro	Solar PV - Ground mount	Pre-Construction	San Leandro	Alameda	CA	94577	37.7143	122.1817	20	2/28/2024			1.00	38502.00	1925.10					
20 East Bay Community Energy (EBCE)	EBCES0016	Tracy 9	Solar PV - Ground mount	Pre-Construction	Tracy	San Joaquin	CA	95377	37.7337	-121.532	20	2/28/2024			3.00	124756.00	6237.80					
21 East Bay Community Energy (EBCE)	EBCES0015	Tracy 16	Solar PV - Ground mount	Pre-Construction	Tracy	San Joaquin	CA	95377	37.7337	-121.532	20	2/28/2024			2.00	80688.00	4034.40					