



REQUEST FOR PROPOSALS

FOR

**CLOUD INFRASTRUCTURE IMPLEMENTATION
PARTNER**

RFP Release Date: Mar 10, 2025

**RFP Submittal Deadline: Apr 7, 2025 at 5:00 PM Pacific
Time**

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2 Silicon Valley Clean Energy Overview

Silicon Valley Clean Energy (SVCE), a Community Choice Energy agency, is redefining the local electricity market and providing our residents and businesses with new clean energy choices—renewable and carbon-free electricity at competitive rates. SVCE was formed as a Joint Powers Authority in 2016, and now serves approximately 270,000 residential and commercial electricity customers across a service area comprised of the following thirteen communities: Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Saratoga, Sunnyvale and Unincorporated Santa Clara County. 97% of electricity customers in SVCE’s service area receive their electricity from SVCE. For more information on SVCE, please visit: <https://www.svcleanenergy.org/>.

As SVCE was formed to support our communities in reducing their greenhouse gas emissions, we aim to provide our customers with resources that can help them understand their energy use and how it relates to their carbon footprint, discover ways to reduce their carbon footprint and find products and contractors to help them save energy and money. SVCE is also in the process of launching a broad set of programs supporting decarbonization efforts and needs an online resource to enable customers to engage with these programs and related activities. For more information on SVCE’s overarching program strategy and planned programs, please visit: <https://www.svcleanenergy.org/programs/>.

3 RFP Overview

SVCE is planning to centralize its data warehousing, data analytics, and reporting needs by integrating its existing data systems into a central repository hosted in Google Cloud Platform (GCP), to be referred to internally as RADaR¹.

SVCE is looking to work with an implementation partner to assist it in building out a consolidated data infrastructure in GCP to combine data from the demand- and supply-sides of its business, offer a single source of truth, enhance analytics and reporting, and set organization-wide standards for documentation, version control, user permissions, and data security.

SVCE seeks services that include the configuration of Google Cloud components, the development of ETL code, the design and development of BigQuery tables, documentation, version control, and user training, with an emphasis on collaboration and co-development with SVCE staff along the way.

With this request for proposals (RFP), SVCE seeks information about the experience and qualifications of your organization (Bidder) relating to the implementation and ongoing maintenance of RADaR as described in this RFP’s scope of work.

This RFP:

- Describes the scope of services sought by SVCE
- Outlines key dates and the proposed timeline
- Provides an opportunity for Bidders to describe their relevant qualifications and assets, and to explain how they could contribute

¹ Internal name which stands for “Repository for Analytics, Data, and Reporting”

- Provides an opportunity for Bidders to identify any key topics or areas not identified in the RFP that would add substantial value to SVCE's Cloud Infrastructure Implementation Partner scope of work

4 RFP Tentative Timeline

This tentative schedule is provided for the convenience of Bidders, but may be subject to change at any time by SVCE. Any such changes will be stated in an addendum to this RFP or otherwise communicated to Bidders.

Date	Event
March 10, 2025	RFP issued
March 17, 2025, 10AM-11AM Pacific Time	Pre-proposal teleconference
March 21, 2025 at 5:00 PM Pacific Time	Deadline for questions, clarifications (see below)
March 28, 2025 at 5:00 PM Pacific Time	Question responses posted online
April 7, 2025 at 5:00 PM Pacific Time	Deadline for Bidders to submit proposals
April 18, 2025	Top Bidders notified of interview times, if applicable
April 21 through April 25, 2025	Possible interviews of top Bidders
May 9, 2025	Anticipated date SVCE will notify awardees
June SVCE board meeting	<ul style="list-style-type: none"> • Anticipated date contract finalized (to be sent to Board for approval) • Work commences
November, 2025	Target project completion and launch

Notes:

- Pre-Proposal Teleconference: A teleconference will be held on March 17, 2025 from 10am-11am Pacific Time. Call in information (Zoom): <https://svcleanenergy-org.zoom.us/j/82165925048> Webinar ID: 821 6592 5048.
- Questions: Bidders may submit questions concerning the RFP to solicitations@svcleanenergy.org. All questions and answers will be shared with all Bidders and will be posted in the same location as the RFP, at <https://www.svcleanenergy.org/solicitations/>. Questions must be emailed and received by SVCE no later than the time specified in the table above. SVCE shall not be responsible for nor be bound by any oral instructions, interpretations or explanations issued by SVCE or its representatives.
- Proposal Review: SVCE may request clarifications of submitted proposals following submittal. Prompt responses will be requested.
- Bidder Interviews: SVCE may choose to conduct in-person/phone interviews of the top Bidders as shown in the table above.

5 Proposal Submittal

Proposals must be received on or before the above deadline and submitted by email to solicitations@svcleanenergy.org with the subject "Proposal - <Organization> - Cloud Infrastructure Implementation Partner RFP".

Only electronic submittals in PDF format will be accepted.

Proposals must include the following sections (to be submitted in this order only):

1. Administrative Information (1 pg. max)
 - Provide administrative information, and include at a minimum: name, mailing address, phone number, and email of designated point of contact.
2. Proposal summary (2 pg. max)
 - Discuss the highlights, key features and distinguishing points of the proposal.
3. Organization description and qualifications (4 pg. max)
 - Provide an overview of your organization. Include overall organizational structure, number of employees, legal structure and ownership. Provide, if available, current audited Financial Statements, credit rating reports from S&P Global Ratings and/or Fitch and/or Moody's. Provide a current client list.
 - Describe resources and organizational structure with respect to the Cloud Infrastructure Implementation Partner. Provide a brief bio for key staff that will work on this project and highlight their credentials. Attach full resumes of key staff.
 - Provide an overview of your qualifications and previous experience on at least three similar or related projects, especially projects that involved co-development with the client. Include descriptions, costs, timeline and reference contact information.
 - Complete this information for all Bidders (and Sub-Bidders, if applicable) that are included in the proposal.
4. Proposed solution (9 pg. max for each Task (see Task definition below); accompanying power point 20 slides max for each Task)
 - The Scope (see Section 18 of the RFP) includes two Tasks: Task 1 for implementation and an optional Task 2 for ongoing services.
 - Include information about your system and data security plan. Include relevant information requested in Section 18 of the RFP, as well as additional recommendations based on Bidder's expertise.
 - Indicate how the proposed solution could be leveraged by other community choice energy agencies (CCAs).
 - Suggest any innovations, additions or modifications to the scope that SVCE prepared.
 - Note: During the selection process, SVCE may request Bidder to provide information about your cybersecurity posture. In addition, completion of a security questionnaire will be required later in the process.
 - Do you possess any framework-based audit report (SOC 2 – Type 2 (preferred), SOC 2 – Type 1, ISO)?
 - Please provide a list of any third-parties that you will use as part of your offering to SVCE and proof of vendor due-diligence done by you on their third-party vendors.
 - Evidence of routine internal and external vulnerability testing for the platform Vendor will use to store/process SVCE's data.

- Information Security policy or similar internal governing document describing Vendor’s cybersecurity posture.
 - SVCE requires Vendors will possess Cybersecurity Insurance throughout the contract term²
5. Proposed work plan and schedule (4 pg. max per work plan option for a total of 12 pg. max if proposing all 3 work plan options; 1 table or chart for the schedule per work plan option)
- For each work plan option (see Section 18 for details):
 - Present a well-conceived work plan. Include a full description of each task. Show how the work plan would meet SVCE’s schedule.
 - Illustrate how the work plan would proceed and what the key milestones or benchmarks would be, along with required levels of SVCE staff and stakeholder engagement. Include milestones related to SVCE staff co-development (e.g. code review), training, and handoff.
6. Cost proposal (2 pg. max per work plan option for a total of 6 pg. max if proposing all 3 work plan options)
- For each work plan option (see Section 18 for details):
 - Include all costs such set up fees, license fees, etc.; and direct labor rates and estimated hours for named project resources if applicable; and subcontractor rates if applicable.
 - Estimate other direct costs and reimbursable expenses, if any, and associated mark-up percentages, if any.
 - Estimate cloud costs and other costs to be incurred by SVCE as part of the implementation and ongoing services
 - Include a breakdown of costs by deliverable.
 - Include any revenue share or cost reduction elements.
 - Indicate any pricing adjustment if another CCA implements a similar solution.
7. Confirmation of acceptance of contract terms or explanation of proposed contract modifications (see Section 7 of this RFP)
- List all exceptions or requested changes that Bidder has to SVCE’s standard contract. Items not excepted will not be open to later negotiation.
8. Inclusion of non-participating agencies (see Section 8 of this RFP)
- Indicate Bidder’s willingness to extend the terms of resulting contracts to other similar entities.

² Privacy and cybersecurity liability (including costs arising from data destruction, hacking or intentional breaches, crisis management activity related to data breaches, and legal claims for security breach, privacy violations, and notification costs) of at least \$5,000,000 US per occurrence.

6 Review and Selection Process

In addition to, or in reiteration of, the aforementioned minimum proposal requirements, all of which are mandatory, proposals will be evaluated based on the following non-exclusive list of criteria:

- Qualifications and experience of the Bidder providing similar products and services, including the capability and experience of key personnel as well as experience with other public and/or private agencies in similar capacities
- History of successfully performing services for public and/or private agencies and other Community Choice Energy agencies
- Financial viability of the Bidder
- Cost to SVCE for the products and services identified in this RFP
- Proposed approach, including a clearly-demonstrated understanding of the intended scope of products and services to be provided
- Ability to meet any required timelines or other requirements
- Existence of and circumstances surrounding any claims or violations of law or governmental regulations against the Bidder, its representatives and/or partners
- Pertinent references
- Acceptance of SVCE's standard contract terms and conditions

SVCE reserves the right to consider factors other than those specified above and to request additional information from any/all Bidders as a part of the selection process.

7 Supplier Diversity

All qualified organizations are encouraged to respond, including minority-owned and women-owned organizations.

SVCE is an equal opportunity employer. All responses will be evaluated under the same criteria. Pursuant to Proposition 209, a government entity such as SVCE is prohibited from granting preferential treatment to any individual or group on the basis of race, sex, color, ethnicity, or national origin in the operation of public employment or public contracting.

RFP respondents that execute a contract with SVCE will be asked to complete a supplier diversity questionnaire. As a public agency and consistent with state law, SVCE will not use any provided information in any part of its selection process. Rather, SVCE will use the information to comply with the California Public Utilities Commission (CPUC) reporting requirements. Pursuant to General Order 156 (GO156), SVCE is required to submit a detailed and verifiable annual plan and report on the utilization of women-owned, minority-owned, disabled veteran-owned and LGBT-owned business enterprises' procurement. Consistent with the California Public Utilities Code and State policy objectives, SVCE will collect information regarding supplier diversity and labor practices from project developers and their subcontractors regarding past, current and/or planned efforts and policies.

SVCE encourages businesses that qualify for diverse business enterprise status to obtain certification through CPUC's [Supplier Diversity Clearinghouse](#). The certification is voluntary and cannot be used as a criterion for bid evaluation. For information on the certification process and requirements, please visit SVCE's [Supplier Diversity page](#).

8 Agreement Terms

Awardees will be required to enter into a contract using SVCE's standard contract terms. Modification of the contract terms may be proposed by the Bidder for consideration by SVCE but are not guaranteed to be accepted. Rejection of the final terms from SVCE is grounds for disqualification.

SVCE's standard contract terms are available for review in Attachment A.

9 Inclusion of Non-Participating Agencies

SVCE is asking all responding Bidders to indicate their willingness to extend the terms of resulting contracts, inclusive of price, to other interested California-based municipalities, municipally-owned utilities and community choice energy programs. While this clause in no way commits these agencies to contract with SVCE's awarded consultant, nor does it guarantee any additional orders will result, it does allow other agencies, at their discretion, to make use of SVCE's competitive process (provided said process satisfies their own procurement guidelines) and enter into a contract directly with the awarded consultant. All contracts entered into by other agencies shall be understood to be transactions between that agency and the awarded consultant; SVCE shall not be responsible or liable in any manner for any such contracts.

10 California Public Records Act

All parties acknowledge that SVCE is a public agency subject to the requirements of the California Public Records Act, Cal. Gov. Code section 6250 et seq. ("CPRA"). SVCE will not disclose any part of any proposal before it announces a recommendation for an award, on the ground that there is a substantial public interest in not disclosing proposal during the evaluation process. After the announcement of a recommended award, all proposals received in response to this RFP will be subject to public disclosure, with the exception of those elements in each proposal which are exempt from disclosure pursuant to the CPRA.

If a Bidder believes there are portion(s) of the proposal which are exempt from disclosure, the Bidder must plainly mark it as "Confidential", "Proprietary", or "Trade Secret." SVCE may also request that the Bidder state the specific provision of the CPRA which provides the exemption, and the factual basis for claiming the exemption. Any proposal which contains language purporting to render all or significant portions of the proposal as "Confidential," "Trade Secret," or "Proprietary," will be considered non-responsive and a public record in its entirety.

Although the CPRA recognizes that certain confidential trade secret information may be protected from disclosure, SVCE may not be in a position to establish that the information a Bidder submits is a trade secret. If a public records request is made for information marked "Confidential," "Proprietary," or "Trade Secret," SVCE will provide the Bidder(s) who submitted the information with reasonable notice to seek protection from disclosure by a court of competent jurisdiction. The Bidder shall be solely responsible for taking such legal steps; if the Bidder takes no such action after receiving notice of the public records request, SVCE

will disclose all records it deems subject to disclosure, even if marked "Confidential," "Trade Secret," or "Proprietary."

11 Ex Parte Communication

Please note that to insure the proper and fair evaluation of a proposal, SVCE prohibits ex parte communication (i.e., unsolicited) initiated by the Bidder to an SVCE Official or Employee evaluating or considering the proposals prior to the time a bid decision has been made. Communication between Bidder and SVCE will be initiated by the appropriate Agency Official or Employee in order to obtain information or clarification needed to develop a proper and accurate evaluation of the proposal. Ex parte communication may be grounds for disqualifying the offending Bidder from consideration or award of the proposal, then in evaluation, or any future proposal.

12 Insurance Requirements

All insurance shall be secured from or countersigned by an agent or surety company recognized in good standing and authorized to do business in the State of California.

The Bidder shall, within thirty (30) days of notification of award and prior to commencement of work, take out and maintain in full force and effect minimum insurance coverage as specified in the attached requirements. This insurance shall remain in force and effect throughout the duration of the contract.

A certificate of existing insurance coverage should be submitted with the proposal as proof of insurability. If the current coverage does not meet the RFP requirements, then the Bidder should request an affidavit of insurability from the Bidder's insurance agent that certifies the requirements can and will be met. Failure to provide adequate insurance coverage may be cause for disqualification as non-responsive to the RFP requirements.

13 Conflict of Interest/Statement of Non-Collusion

All bidders must disclose with their proposal the name of any officer, director, or agent who is also an employee of SVCE. Further, all bidders must disclose the name of any SVCE employee who owns, directly or indirectly, an interest of five percent (5%) or more of the bidder's firm or any of its branches.

The Bidder shall certify that he/she has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with the proposal and that the bidder is not financially interested in, or otherwise affiliated in a business way with any other bidder on the same land or improvements.

14 Addenda

It is the Bidder's responsibility to contact SVCE prior to submitting a proposal to ascertain if any addenda have been issued, to obtain all such addenda and return executed addenda with the proposal.

The failure of a Bidder to submit acknowledgement of any addenda that affects the proposal price(s) may be considered an irregularity and may be cause for rejection of the proposal.

15 Certifications

The submission of a proposal shall be deemed a representation and certification by the Bidder that it:

- Has read, understands and agrees to the information and requirements set forth in this RFP.
 - Has the capability to complete the responsibilities and obligations of the proposal being submitted
 - Represents that all information contained in the proposal is true and correct
 - Acknowledge that SVCE has the right to make any inquiry it deems appropriate to substantiate or supplement information supplied by Bidder, and Bidder hereby grants SVCE permission to make these inquiries
 - Will provide any and all documentation related to the proposal in a timely manner
- Is eligible to submit a proposal because he/she is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in a transaction by any Federal, State, or local department or agency

16 Rights of SVCE

SVCE is not obligated to respond to any proposal submitted as part of the RFP. **SVCE at its sole discretion reserves the right to waive technicalities or irregularities, to reject any or all proposals, and/or to accept that proposal which is in the best interest of SVCE.** The award of this proposal, if made, may be based on considerations other than total cost and may be awarded based on various considerations, including without limitation; Bidder's experience and/or qualifications, past experience, administrative cost, standardization, technical evaluation and oral and/or written presentations as required. SVCE reserves the right to accept all or part, or to decline the whole, and to award this RFP to one (1) or more Bidders. There is no obligation to buy. The RFP, if awarded, will be in the judgement of SVCE the most responsive to the agency's needs.

17 Background on Current Data Systems & Goals

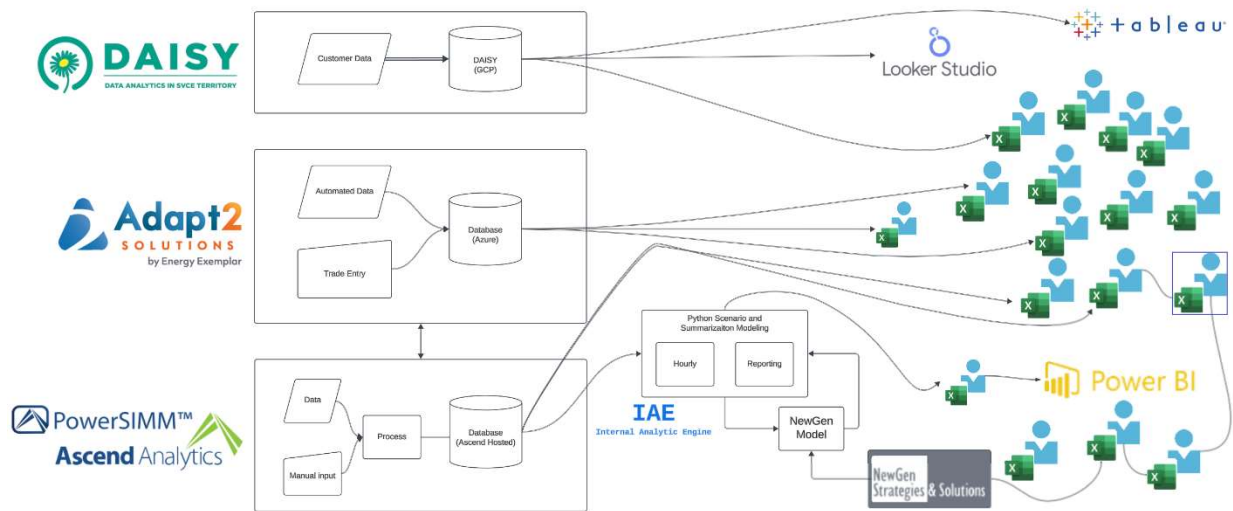
This chapter provides relevant background into SVCE's goals, current data systems, and expected areas of focus to allow Bidders the ability to tailor the explanation of their services to SVCE's specific implementation.

Background

SVCE is soliciting services to implement and maintain data architecture which centralizes its data warehousing, data analytics, and reporting needs across the organization. Specifically, SVCE intends to integrate its existing data systems into a central repository hosted in GCP, to be referred to internally as RADaR.

Current State

CURRENT - SVCE Core Data System Architecture - Simplified Illustration



Demand-side data systems: DAISY, or svce-demand, is SVCE’s existing data platform hosted in GCP. DAISY contains 4 core GCS buckets, one BQ project, and dashboards within Looker Studio. Permissions to the GCP project are managed using tiered Google Groups, where a subset of SVCE staff (Power Users) have access to directly querying and developing in the project. DAISY is currently being developed in partnership with a vendor through September 2025, at which point it will be transitioned over to SVCE.

See Attachment D for more detailed information on DAISY.

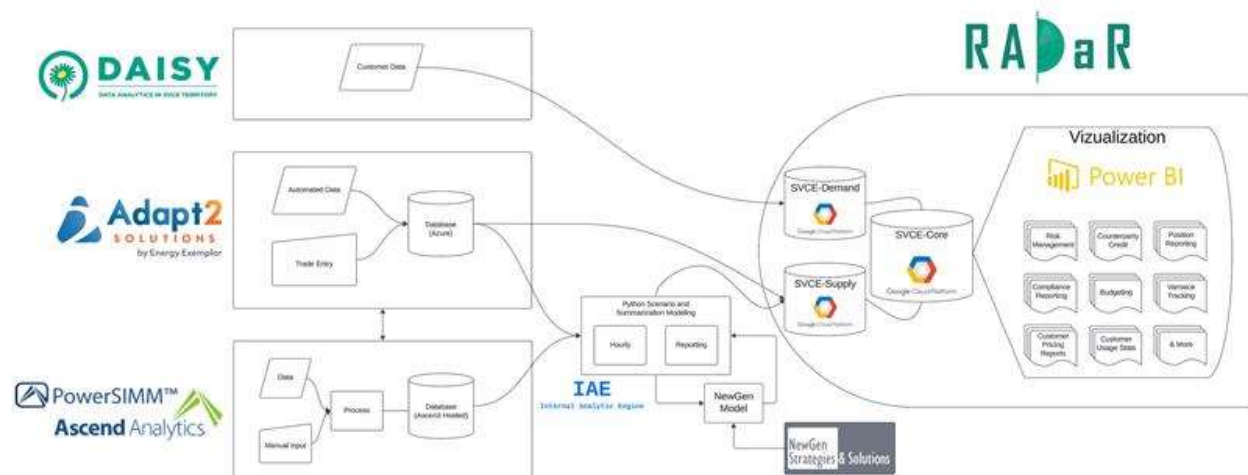
Supply-side data systems: The organization of data in the supply side consists of a contract management software (Adapt2), a risk and portfolio modeling software (Ascend: PowerSIMM), a load forecasting software (Itron), in-house models, and a range of disparate Excel scripts. There is limited automation among these platforms and most data transfers are manual. The contract management software serves as a source of truth for contracts, counterparty credit ratings, their historical data, and settlements/ associated meter data. The modeling software uses contract data, including historical performance of a contract, and provides modeled outputs of financial scenarios.

See Attachment B for more detailed information on the current state of supply-side data systems, and Attachment C for more detailed information on supply-side workflows.

Other tools and applications: In addition to the data systems above, SVCE leverages box for file storage, Excel/Python/R for data analysis, ArcGIS Pro for mapping and spatial analysis, Github for version control, and is transitioning to PowerBI for reports and dashboards.

Future State – RADaR

FUTURE - SVCE Core Data System Architecture - Simplified Illustration



RADaR will consist of three GCP projects: *svce-demand*, *svce-supply*, and *svce-core*.

- *svce-demand*: Also known as DAISY, this is SVCE’s **existing** GCP project containing primarily demand-side data. Includes Google Cloud Storage (GCS) buckets, BigQuery tables, ETL systems, pre-made queries and routines, and documentation.
- *svce-supply*: This will be a **new** GCP project containing data for SVCE’s “supply-side”³ business functions. Vendor will develop ETL systems to ingest data from various software into GCS and BigQuery.
- *svce-core*: This will be a **new** GCP project that brings together summarized data from *svce-demand* and *svce-supply* for reporting and analytics across the two sides of business. It will also house data that are utilized by both sides of the business (e.g. settlement-quality load data, weather data, rates data).

See Attachment B for build requirements for RADaR.

Goals

Broadly speaking, SVCE seeks to build RADaR to unify data, analytics, and reporting across the demand- and supply-sides of its business. This will ensure a single source of truth for common datasets such as electricity load, enhance SVCE’s analytics capabilities, and set organization-wide standards for documentation, version control, user permissions, and data security.

The goal of this project is to develop a solution that SVCE can manage and develop internally with a lean maintenance effort. In order for SVCE to quickly transition to internal management and development, SVCE would like to be a passenger to the development carried out by Bidder.

³ Includes functions such as: deal capture, energy trading and risk management, portfolio management, compliance

With these goals in mind, SVCE seeks an implementation partner that is flexible in order to adapt to existing and new data architecture standards, as well as communicative and transparent throughout the development process. SVCE's preference is to have ownership over the code developed during this project.

Minimum Functionality Requirements

Below are elements that SVCE considers to be essential to RADaR implementation:

Version Control

The combined architecture system should be considered a production-level operational system. As such, all production processes should be subject to version control using a tool or application such as Github. Every piece of code or logic that performs a production-level function should be protected through version control, and the various previous versions should be tracked. This will ensure a level of disaster recovery, along with the ability to debug and recover from failures quickly and efficiently.

Data Versioning

Given the nature of CCA operations and the variable nature of load data, tracking the version of various datasets and outputs is critical. The solution should support tracking of data versioning.

Logs and Tracking

Production processes should be coded to provide minimum logging of events and checkpoints to facilitate debugging. The logging can be in the form of log files stored in Compute Engines, logs stored in Big Query or even logs that use the native GCP logging function, or a combination of the above (depending on the complexity and level of logging required).

Access Control and Permissions

Ensure proper access control and permissions, particularly for access of Personally Identifiable Information (PII) stored in its systems.

The solutions should utilize SVCE's single sign-on authentication. A least privileged approach will be taken for direct database access with controls for each level of the architecture, such as:

- GCP projects to segregate data across business functions
- GCP buckets to further segregate different data sets in GCS
- Access control policies in BQ that support dataset, and even row and column level access policies as necessary

There should be user groups for specific business roles making it easy for SVCE to manage their access control internally.

Data Protection

- Security/Compliance
 - SVCE must adhere to:
 - [California Consumer Privacy Act \(CCPA\)](#) for Customer Data
 - [North American Electrical Reliability Corporation \(NERC\)](#) in dissemination and display of market information

- Publicly shared data must adhere to the CPUC 15x15 privacy rule
 - SOC2 compliance required for Bidders
- Encryption at rest and in-transit
- Disaster Recovery
 - Recovery Point Objective (RPO): <1 day data loss, or other recommended option based on the scope of this RFP.
 - Recovery Time Objective (RTO): hours, or other recommended option based on the scope of this RFP.

Documentation

A key aspect of an easily maintainable system will be documentation. An intranet of information about the system, architecture diagrams, table structures, naming conventions, FAQs, in-built functions, etc. will help SVCE operate and understand the built solution. Similarly rich code documentation can be part of the co-development process to facilitate a stable understanding of the code base. Documentation should be considered an evolving process, with requirements documents leading to design specifications leading to user documentation. If the documentation is developed in this manner, and not relegated to the end, or developed in silos, then it makes the documentation effort much more manageable.

Co-Development

A consistent schedule of code walkthroughs during development both before and after implementation will allow SVCE to be educated and familiar with the code base. SVCE will take responsibility on some development pipelines, adapting code developed by the implementation partner. A high-fidelity understanding of and participation in development will allow for a smooth transition to internal management and development of the built solution.

18 High Level Scope of Work

The proposed work for RADaR is organized into the following two tasks:

Task 1: Implementation

Task 2 (Optional): Ongoing Services

Each of these tasks, their anticipated deliverables and services, and target schedule are described below.

Note that the schedule for Task 1 outlined below reflects an anticipated RADaR launch date of November 2025. SVCE will also consider proposals with an earlier launch date or a phased work approach that allows for a soft launch by November 2025 and a full launch post-November. Therefore, Bidders are encouraged to propose at least one, but up to three work plan options for Task 1:

1. *Standard work plan*: complete all work outlined in Phase 1 below by November 2025.
2. *Accelerated work plan*: complete all work outlined in Phase 1 below **before** November 2025.
 - Please specify the following:
 - Accelerated launch date
 - Cost difference compared to Standard work plan

3. *Phased work plan*: complete a prioritized subset of the work outlined in Phase 1 below by November 2025. Complete the remainder of Phase 1 work by a specified date.
 - Please specify the following:
 - Subset of Scope of Work that can be completed by “soft launch” in November 2025
 - Timeline for “full launch”
 - Cost difference compared to Standard and Accelerated work plans

Task 1: RADaR Implementation

1. SVCE data systems review
 - a. Review existing systems, including:
 - i. *svce-demand* (DAISY) project in GCP
 - ii. Github repository
 - iii. PowerSIMM
 - iv. Adapt2
 - v. Internal Analytics Engine (IAE)⁴
 - b. Meet with SVCE staff to discuss questions
2. Implementation of *svce-supply* data architecture according to RADaR specifications (Attachments B and C)
 - a. GCP account/project setup
 - i. Establish tiered permissions
 - ii. Create documentation on tiered permissions
 - iii. Train SVCE staff on GCP project management
 - b. GCS development
 - i. Set up file structure
 - ii. Develop pipelines from data systems (e.g. box, Adapt2, PowerSIMM), versioned in Github
 - iii. Code review and acceptance by SVCE staff
 - iv. Pipe data into GCS
 - v. Create documentation on each pipeline and GCS bucket, folder, and subfolder
 - vi. Train SVCE staff on GCS structure and pipelines
 - c. BigQuery development
 - i. Develop ETL pipelines from GCS to BigQuery, versioned in Github
 - ii. Code review and acceptance by SVCE staff
 - iii. Load data into BigQuery tables
 - iv. Create documentation for each pipeline and BigQuery table, including sample queries
 - v. Train SVCE staff on BigQuery pipelines and tables
 - d. Handoff to SVCE
 - i. Provide all documentation produced in the tasks above
 - ii. Provide User Guide
 - iii. Provide live and recorded trainings
3. Implementation of *svce-core* data architecture according to RADaR specifications
 - a. GCP account/project setup
 - i. Establish tiered permissions
 - ii. Create documentation on tiered permissions
 - iii. Train SVCE staff on GCP project management
 - b. BigQuery development

⁴ SVCE’s internal Python model for post-processing, cash flow modeling, reporting

- i. Support development of pipelines from *svce-demand* to *svce-core*, versioned in Github
 - ii. Develop pipelines from *svce-supply* to *svce-core*, versioned in Github
 - iii. Code review and acceptance by SVCE staff
 - iv. Load data into BigQuery tables
 - v. Create documentation for each pipeline and BigQuery table, including sample queries
 - vi. Train SVCE staff on BigQuery pipelines and tables
4. RADaR launch
 - a. Launch proof of concept report in PowerBI

Schedule: Complete by November 2025

Task 2 (Optional): Ongoing Services

Ongoing services (up to a 3-year contract term) for RADaR may include, but are not limited to, the following.

- Provide collaborative system administration services to RADaR on GCP
- Develop and maintain ETL pipelines
- Enhance and/or create pipelines for new/updated sources of data from SVCE, PG&E, Calpine, Adapt2, PowerSIMM, and other sources (e.g. weather data) on an ongoing basis. Data formats can change for existing data sources.
- Develop new integrated tools (e.g. manual data entry UI)
- Maintain and enhance existing integrated tools (e.g. IAE)
- Develop and manage core tables, dashboards, reports
- Provide ongoing support to Power Users⁵, e.g. query troubleshooting, answering questions related to data, tools, and documentation

Innovative Components

SVCE has an organizational focus on leveraging innovative ideas and strategies to pursue our goals. Responses to this RFP are encouraged to include components beyond those mentioned in the RFP if the Bidder believes that they would serve SVCE's goals. Innovative components could include applications and tools outside of what is scoped in the RFP, streamlining of SVCE data processes, integration of other high-impact public or third-party datasets, or something else not yet considered by SVCE.

⁵ Power Users are a subset of SVCE staff who have access to directly querying and developing in GCP projects. There are currently 15 Power Users and this number is expected to remain stable once RADaR is implemented.

Attachment A – Standard Consultant Agreement

AGREEMENT BETWEEN THE SILICON VALLEY CLEAN ENERGY AUTHORITY AND

CLICK TO ENTER CONSULTANT’S NAME

FOR

CLICK TO ENTER SERVICES THAT WILL BE PROVIDED

THIS AGREEMENT (“Agreement”), is entered into this **Click here to enter DAY.** day of **ENTER MONTH., ENTER YEAR.,** by and between the SILICON VALLEY CLEAN ENERGY AUTHORITY, an independent public agency, (“Authority”), and **Click here to enter Consultant’s name.,** a **Click here to enter entity type (California corporation, partnership, etc.).** (hereinafter referred to as “Consultant”) (collectively referred to as the “Parties” and individually as a “Party”).

RECITALS:

A. Authority is an independent public agency duly organized under the provisions of the Joint Exercise of Powers Act of the State of California (Government Code Section 6500 *et seq.*) (“Act”) with the power to conduct its business and enter into agreements.

B. Consultant possesses the skill, experience, ability, background, certification and knowledge to provide the services described in this Agreement pursuant to the terms and conditions described herein.

C. Authority and Consultant desire to enter into an agreement for **Click here to enter a description of work to be performed.** upon the terms and conditions herein.

NOW, THEREFORE, the Parties mutually agree as follows:

1. TERM

The term of this Agreement shall commence on **Click here to enter beginning of term.,** and shall terminate on **Click here to enter end of term.,** unless terminated earlier as set forth herein.

2. **SERVICES TO BE PERFORMED**

Consultant shall perform each and every service set forth in Exhibit "A" pursuant to the schedule of performance set forth in Exhibit "B," both of which are attached hereto and incorporated herein by this reference.

3. **COMPENSATION TO CONSULTANT**

Consultant shall be compensated for services performed pursuant to this Agreement in a total amount not to exceed [Click here to enter amount of compensation in words](#). dollars (\$[Click here to enter amount of compensation in numerals](#).00) based on the rates and terms set forth in Exhibit "C," which is attached hereto and incorporated herein by this reference.

4. **TIME IS OF THE ESSENCE**

Consultant and Authority agree that time is of the essence regarding the performance of this Agreement.

5. **STANDARD OF CARE**

Consultant agrees to perform all services required by this Agreement in a manner commensurate with the prevailing standards of specially trained professionals in the San Francisco Bay Area under similar circumstances and in a manner reasonably satisfactory to Authority and agrees that all services shall be performed by qualified and experienced personnel. Consultant shall be responsible to Authority for any errors or omissions in the performance of work pursuant to this Agreement. Should any errors caused by Consultant be found in such services or products, Consultant shall correct the errors at no additional charge to Authority by redoing the professional work and/or revising the work product(s) called for in the Scope of Services to eliminate the errors. Should Consultant fail to make such correction in a reasonably timely manner, such correction may be made by Authority, and the cost thereof shall be charged to Consultant. In addition to all other available remedies, Authority may deduct the cost of such correction from any retention amount held by Authority or may withhold payment otherwise owed Consultant under this Agreement up to the amount of the cost of correction.

6. **INDEPENDENT PARTIES**

Authority and Consultant intend that the relationship between them created by this Agreement is that of an independent contractor. The manner and means of conducting the work are under the control of Consultant, except to the extent they are limited by statute, rule or regulation and the express terms of this Agreement. No civil service status or other right of employment will be acquired by virtue of Consultant's services. None of the benefits provided by Authority to its employees, including but not limited to, unemployment insurance, workers' compensation plans, vacation and sick leave are available from Authority to Consultant, its employees or agents. Deductions shall not be made for any state or federal taxes, FICA payments, PERS payments, or other purposes normally associated with an employer-employee relationship from any fees due Consultant. Payments of the above items, if required, are the responsibility of Consultant. Consultant shall indemnify and hold harmless Authority and its elected officials, officers, employees, servants, designated volunteers, and agents serving as independent

contractors in the role of Authority officials, from any and all liability, damages, claims, costs and expenses of any nature to the extent arising from Consultant's personnel practices. Authority shall have the right to offset against the amount of any fees due to Consultant under this Agreement any amount due to Authority from Consultant as a result of Consultant's failure to promptly pay to Authority any reimbursement or indemnification arising under this section.

7. **NO RECOURSE AGAINST CONSTITUENT MEMBERS OF AUTHORITY**

Authority is organized as a Joint Powers Authority in accordance with the Joint Powers Act of the State of California (Government Code Section 6500 et seq.) pursuant to a Joint Powers Agreement dated March 31, 2016, and is a public entity separate from its constituent members. Authority shall solely be responsible for all debts, obligations and liabilities accruing and arising out of this Agreement. Consultant shall have no rights and shall not make any claims, take any actions or assert any remedies against any of Authority's constituent members in connection with this Agreement.

8. **NON-DISCRIMINATION**

In the performance of this Agreement, Consultant, and any subconsultant under the Consultant, shall not discriminate against any employee, subcontractor or applicant for employment because of race, color, religious creed, sex, gender, gender identity, gender expression, marital status, national origin, ancestry, age, physical disability, mental disability, medical condition, genetic information, sexual orientation, military or veteran status, or other basis prohibited by law, except as provided in Government Code section 12940. Consultant shall have responsibility for compliance with this Section.

9. **HOLD HARMLESS AND INDEMNIFICATION**

A. General Indemnification. To the fullest extent permitted by law, Consultant shall, at its sole cost and expense, defend, hold harmless and indemnify Authority and its elected officials, officers, attorneys, agents, employees, designated volunteers, successors, assigns and those Authority agents serving as independent contractors in the role of Authority officials (collectively "Indemnitees"), from and against any and all damages, costs, expenses, liabilities, claims, demands, causes of action, proceedings, expenses, judgments, penalties, liens, and losses of any nature whatsoever, including fees of accountants, attorneys, or other professionals and all costs associated therewith and the payment of all consequential damages (collectively "Liabilities"), in law or equity, whether actual, alleged or threatened, which arise out of, are claimed to arise out of, pertain to, or relate to the acts or omissions of Consultant, its officers, agents, servants, employees, subcontractors, materialmen, consultants or their officers, agents, servants or employees (or any entity or individual that Consultant shall bear the legal liability thereof) in the performance of this Agreement, including the Indemnitees' active or passive negligence, except for Liabilities arising from the sole negligence or willful misconduct of the Indemnitees as determined by court decision or by the agreement of the Parties. Consultant shall defend the Indemnitees in any action or actions filed in connection with any Liabilities with counsel of the Indemnitees' choice, and shall pay all costs and expenses, including all attorneys' fees and experts' costs actually incurred in connection with such defense. Consultant shall reimburse the Indemnitees for any and all legal expenses and costs incurred by Indemnitees in connection therewith.

B. Intellectual Property Indemnification. Consultant hereby certifies that it owns, controls, or licenses and retains all right, title, and interest in and to any intellectual property it uses in relation to this Agreement, including the design, look, feel, features, source code, content, and other technology relating to any part of the services and including all related patents, inventions, trademarks, and copyrights, all applications therefor, and all trade names, service marks, know how, and trade secrets (collectively referred to as "IP Rights"), except as otherwise expressly provided by this Agreement. Consultant warrants that the services to be provided pursuant to this Agreement do not infringe, violate, trespass, or constitute the unauthorized use or misappropriation of any IP Rights of any third party. Consultant shall indemnify, defend, and hold Indemnitees, harmless from and against any Liabilities by a third party that the services to be provided pursuant to this Agreement infringe or violate any third-party's IP Rights, provided any such right is enforceable in the United States. Such costs and expenses shall include reasonable attorneys' fees of counsel of Authority's choice, expert fees and all other costs and fees of litigation.

C. The acceptance of the services by Authority shall not operate as a waiver of these rights of indemnification. The hold harmless and indemnification provisions of this Section shall apply regardless of whether or not any insurance policies are determined to be applicable to the Liability.

D. Consultant's indemnifications and obligations under this section shall survive the expiration or termination of this Agreement.

10. INSURANCE

A. General Requirements. On or before the commencement of the term of this Agreement, Consultant shall furnish Authority with certificates showing the type, amount, class of operations covered, effective dates and dates of expiration of insurance coverage in compliance with the requirements listed in Exhibit "D," which is attached hereto and incorporated herein by this reference. Such insurance and certificates, which do not limit Consultant's indemnification obligations under this Agreement, shall also contain substantially the following statement: "Should any of the above insurance covered by this certificate be canceled or coverage reduced before the expiration date thereof, the insurer affording coverage shall provide thirty (30) days' advance written notice to the Authority by certified mail, Attention: Chief Executive Officer." Consultant shall maintain in force at all times during the performance of this Agreement all appropriate coverage of insurance required by this Agreement with an insurance company that is acceptable to Authority and licensed to do insurance business in the State of California. Endorsements naming the Authority as additional insured shall be submitted with the insurance certificates.

B. Subrogation Waiver. Consultant agrees that in the event of loss due to any of the perils for which he/she has agreed to provide comprehensive general and automotive liability insurance, Consultant shall look solely to his/her/its insurance for recovery. Consultant hereby grants to Authority, on behalf of any insurer providing comprehensive general and automotive liability insurance to either Consultant or Authority with respect to the services of Consultant herein, a waiver of any right to subrogation which any such insurer of Consultant may acquire against Authority by virtue of the payment of any loss under such insurance.

C. Failure to Secure or Maintain Insurance. If Consultant at any time during the term hereof should fail to secure or maintain the foregoing insurance, Authority shall be permitted to obtain such insurance in the Consultant's name or as an agent of the Consultant and shall be compensated by the

Consultant for the costs of the insurance premiums at the maximum rate permitted by law and computed from the date written notice is received that the premiums have not been paid.

D. Additional Insured. Authority, its members, officers, employees and volunteers shall be named as additional insureds under all insurance coverages, except any professional liability insurance, required by this Agreement. The naming of an additional insured shall not affect any recovery to which such additional insured would be entitled under this policy if not named as such additional insured. An additional insured named herein shall not be held liable for any premium, deductible portion of any loss, or expense of any nature on this policy or any extension thereof. Any other insurance held by an additional insured shall not be required to contribute anything toward any loss or expense covered by the insurance provided by this policy.

E. Sufficiency of Insurance. The insurance limits required by Authority are not represented as being sufficient to protect Consultant. Consultant is advised to confer with Consultant's insurance broker to determine adequate coverage for Consultant.

F. Maximum Coverage and Limits. It shall be a requirement under this Agreement that any available insurance proceeds broader than or in excess of the specified minimum Insurance coverage requirements and/or limits shall be available to the additional insureds. Furthermore, the requirements for coverage and limits shall be the minimum coverage and limits specified in this Agreement, or the broader coverage and maximum limits of coverage of any insurance policy or proceeds available to the named insured, whichever is greater.

11. CONFLICT OF INTEREST

Consultant warrants that it, its officers, employees, associates and subcontractors, presently have no interest, and will not acquire any interest, direct or indirect, financial or otherwise, that would conflict in any way with the performance of this Agreement, and that it, its officers, employees, associates and subcontractors, will not employ any person having such an interest. Consultant and its officers, employees, associates and subcontractors, if any, shall comply with all conflict of interest statutes of the State of California applicable to Consultant's services under this Agreement, including the Political Reform Act (Gov. Code § 81000, et seq.) and Government Code Section 1090. During the term of this Agreement, Consultant may perform similar services for other clients, but Consultant and its officers, employees, associates and subcontractors shall not, without the Authority Representative's prior written approval, perform work for another person or entity for whom Consultant is not currently performing work that would require Consultant or one of its officers, employees, associates or subcontractors to abstain from a decision under this Agreement pursuant to a conflict of interest statute. Consultant shall incorporate a clause substantially similar to this section into any subcontract that Consultant executes in connection with the performance of this Agreement. Consultant understands that it may be required to fill out a conflict of interest form if the services provided under this Agreement require Consultant to make certain governmental decisions or serve in a staff Authority, as defined in Title 2, Division 6, Section 18700 of the California Code of Regulations.

12. PROHIBITION AGAINST TRANSFERS

Consultant shall not assign, sublease, hypothecate, or transfer this Agreement, or any interest therein, directly or indirectly, by operation of law or otherwise, without prior written consent of Authority. Any attempt to do so without such consent shall be null and void, and any assignee, sublessee, pledgee, or transferee shall acquire no right or interest by reason of such attempted assignment, hypothecation or transfer. However, claims for money by Consultant from Authority under this Agreement may be assigned to a bank, trust company or other financial institution without prior written consent. Written notice of such assignment shall be promptly furnished to Authority by Consultant.

The sale, assignment, transfer or other disposition of any of the issued and outstanding capital stock of Consultant, or of the interest of any general partner or joint venturer or syndicate member or cotenant, if Consultant is a partnership or joint venture or syndicate or cotenancy, which shall result in changing the control of Consultant, shall be construed as an assignment of this Agreement. Control means fifty percent (50%) or more of the voting power of the corporation.

13. **SUBCONTRACTOR APPROVAL**

Unless prior written consent from Authority is obtained, only those persons and subcontractors whose names are attached to this Agreement shall be used in the performance of this Agreement.

In the event that Consultant employs subcontractors, such subcontractors shall be required to furnish proof of workers' compensation insurance and shall also be required to carry general, automobile and professional liability insurance in substantial conformity to the insurance carried by Consultant. In addition, any work or services subcontracted hereunder shall be subject to each provision of this Agreement.

Consultant agrees to include within their subcontract(s) with any and all subcontractors the same requirements and provisions of this Agreement, including the indemnity and insurance requirements, to the extent they apply to the scope of the subcontractor's work. Subcontractors hired by Consultant shall agree to be bound to Consultant and Authority in the same manner and to the same extent as Consultant is bound to Authority under this Agreement. Subcontractors shall agree to include these same provisions within any sub-subcontract. Consultant shall provide a copy of the Indemnity and Insurance provisions of this Agreement to any subcontractor. Consultant shall require all subcontractors to provide valid certificates of insurance and the required endorsements prior to commencement of any work and will provide proof of compliance to Authority.

14. **REPORTS**

A. Each and every report, draft, work product, map, record and other document, hereinafter collectively referred to as "Report", reproduced, prepared or caused to be prepared by Consultant pursuant to or in connection with this Agreement, shall be the exclusive property of Authority. Consultant shall not copyright any Report required by this Agreement and shall execute appropriate documents to assign to Authority the copyright to Reports created pursuant to this Agreement. Any Report, information and data acquired or required by this Agreement shall become the property of Authority, and all

publication rights are reserved to Authority. Consultant may retain a copy of any Report furnished to the Authority pursuant to this Agreement.

B. All Reports prepared by Consultant may be used by Authority in execution or implementation of: (1) The original project for which Consultant was hired; (2) Completion of the original project by others; (3) Subsequent additions to the original project; and/or (4) Other Authority projects as Authority deems appropriate in its sole discretion.

C. Consultant shall, at such time and in such form as Authority may require, furnish reports concerning the status of services required under this Agreement.

D. All Reports shall also be provided in electronic format, both in the original file format (e.g., Microsoft Word) and in PDF format.

E. No Report, information or other data given to or prepared or assembled by Consultant pursuant to this Agreement that has not been publicly released shall be made available to any individual or organization by Consultant without prior approval by Authority.

F. Authority shall be the owner of and shall be entitled upon request to immediate possession of accurate reproducible copies of Reports or other pertinent data and information gathered or computed by Consultant prior to termination of this Agreement or upon completion of the work pursuant to this Agreement.

15. **RECORDS**

Consultant shall maintain complete and accurate records with respect to costs, expenses, receipts and other such information required by Authority that relate to the performance of services under this Agreement, in sufficient detail to permit an evaluation of the services and costs. All such records shall be clearly identified and readily accessible. Consultant shall provide free access to such books and records to the representatives of Authority or its designees at all proper times, and gives Authority the right to examine and audit same, and to make transcripts therefrom as necessary, and to allow inspection of all work, data, documents, proceedings and activities related to this Agreement. Such records, together with supporting documents, shall be maintained for a minimum period of five (5) years after Consultant receives final payment from Authority for all services required under this agreement

16. **PARTY REPRESENTATIVES**

The Chief Executive Officer (“Authority Representative”) shall represent the Authority in all matters pertaining to the services to be performed under this Agreement. [Click here to enter the name of Consultant representative.](#) (Consultant Representative”) shall represent Consultant in all matters pertaining to the services to be performed under this Agreement.

17. **CONFIDENTIAL INFORMATION AND DOCUMENTS**

A. Consultant covenants that all data, reports, documents, discussion, or other information (collectively “Data”) developed or received by Consultant or provided for performance of this Agreement are deemed confidential and shall not be disclosed or released by Consultant without prior written authorization by Authority. Authority shall grant such authorization if applicable law requires disclosure. Consultant, its officers, employees, agents, or subcontractors shall not without written authorization from the Authority Representative or unless requested in writing by the Authority’s General Counsel, voluntarily provide declarations, letters of support, testimony at depositions, response to interrogatories or other information concerning the work performed under this Agreement or relating to any project or property located within the Authority. Response to a subpoena or court order shall not be considered “voluntary,” provided Consultant gives Authority notice of such court order or subpoena.

B. Consultant shall promptly notify Authority should Consultant, its officers, employees, agents or subcontractors be served with any summons, complaint, subpoena, notice of deposition, request for documents, interrogatories, request for admissions or other discovery request, court order or subpoena from any party regarding this Agreement and the work performed thereunder or with respect to any project or property located within the Authority. Authority may, but has no obligation to, represent Consultant or be present at any deposition, hearing or similar proceeding. Consultant agrees to cooperate fully with Authority and to provide Authority with the opportunity to review any response to discovery requests provided by Consultant. However, Authority’s right to review any such response does not imply or mean the right by Authority to control, direct or rewrite the response.

C. It is understood that Authority is subject to the California Public Records Act (Gov. Code § 7920.000 *et seq.*). If a request under the California Public Records Act is made to view any documents Consultant provided to Authority, Authority shall notify Consultant of the request and the date that such records will be released to the requester unless Consultant obtains a court order enjoining that disclosure. If Consultant fails to obtain a court order enjoining that disclosure, Authority will release the requested information on the date specified.

D. In the event Authority gives Consultant written notice of a “litigation hold” or request under the Public Records Act, then as to all data identified in such notice or request, Consultant shall, at no additional cost to Authority, isolate and preserve all such data pending receipt of further direction from the Authority.

E. Consultant agrees to comply with the confidentiality and data protection provisions set forth in Exhibit “E,” attached hereto and incorporated herein by this reference.

F. Consultant’s covenants under this section shall survive the expiration or termination of this Agreement.

18. **NOTICES**

Any notice, consent, request, demand, bill, invoice, report or other communication required or permitted under this Agreement shall be in writing and conclusively deemed effective: (a) on personal delivery, (b) on confirmed delivery by courier service during Consultant’s and Authority’s regular business hours, or (c) three Business Days after deposit in the United States mail, by first class mail, postage prepaid, and addressed to the Party to be notified as set forth below:

NOTICES TO AUTHORITY:

333 W. El Camino Real

Suite 330

Sunnyvale CA 94087

Attention: Chief Executive Officer

INVOICES TO AUTHORITY:

invoices@svcleanenergy.org

TO CONSULTANT:

[Click here to enter consultant name.](#)

[Click here to enter company name.](#)

[Click here to enter street number and street name.](#)

[Click here to enter city, state, and zip code.](#)

19. **TERMINATION**

In the event Consultant fails or refuses to perform any of the provisions hereof at the time and in the manner required hereunder, Consultant shall be deemed in default in the performance of this Agreement. If Consultant fails to cure the default within the time specified (which shall be determined by the Authority but shall be not less than 10 days) and according to the requirements set forth in Authority's written notice of default, and in addition to any other remedy available to the Authority by law, the Authority Representative may terminate the Agreement by giving Consultant written notice thereof, which shall be effective immediately. The Authority Representative shall also have the option, at its sole discretion and without cause, of terminating this Agreement by giving seven (7) calendar days' prior written notice to Consultant as provided herein. Upon receipt of any notice of termination, Consultant shall immediately discontinue performance.

In the event of Authority's termination of this Agreement due to no fault or failure of performance by Consultant, Authority shall pay Consultant for services satisfactorily performed up to the effective date of termination. Upon termination, Consultant shall immediately deliver to the Authority any and all copies of studies, sketches, drawings, computations, and other material or products, whether or not completed, prepared by Consultant or given to Consultant, in connection with this Agreement. Such materials shall become the property of Authority. Consultant shall have no other claim against Authority by reason of such termination, including any claim for compensation.

20. **COMPLIANCE WITH LAWS**

Consultant shall keep itself informed of all applicable federal, state and local laws, ordinances, codes, regulations and requirements which may, in any manner, affect those employed by it or in any way affect the performance of its services pursuant to this Agreement. Consultant shall, at all times, observe and comply with all such laws and regulations, including, but not limited to the Americans with Disabilities Act, the Stored Communications Act, 18 U.S.C. Section 2701, et seq., California Civil Code Sections 1798.80 through 1798.84, and the California Consumer Privacy Act, Civil Code Section 1798.100 et seq. Authority, and its officers and employees, shall not be liable at law or in equity by reason of the failure of the Consultant to comply with this paragraph.

Consultant represents and agrees that all personnel engaged by Consultant in performing services are and shall be fully qualified and are authorized or permitted under state and local law to perform such services. Consultant represents and warrants to Authority that it has all licenses, permits, certificates, qualifications, and approvals required by law to provide the services and work required to perform services under this Agreement, including a business license. Consultant further represents and warrants that it shall keep in effect all such licenses, permits, and other approvals during the term of this Agreement.

21. **CONFLICT OF LAW**

This Agreement shall be interpreted under, and enforced by the laws of the State of California. The Agreement and obligations of the Parties are subject to all valid laws, orders, rules, and regulations of the authorities having jurisdiction over this Agreement (or the successors of those authorities). Any suits brought pursuant to this Agreement shall be filed with the Superior Court of the County of Santa Clara, State of California.

22. **ADVERTISEMENT**

Consultant shall not post, exhibit, display or allow to be posted, exhibited, displayed any signs, advertising, show bills, lithographs, posters or cards of any kind pertaining to the services performed under this Agreement unless prior written approval has been secured from Authority to do otherwise.

23. **WAIVER**

A waiver by Authority of any breach of any term, covenant, or condition contained herein shall not be deemed to be a waiver of any subsequent breach of the same or any other term, covenant, or condition contained herein, whether of the same or a different character.

24. **INTEGRATED CONTRACT**

This Agreement represents the full and complete understanding of every kind or nature whatsoever between the Parties, and all preliminary negotiations and agreements of whatsoever kind or nature are merged herein. No verbal agreement or implied covenant shall be held to vary the provisions hereof. Any modification of this Agreement will be effective only by a written document signed by both Authority and Consultant.

25. **AUTHORITY**

The individual(s) executing this Agreement represent and warrant that they have the legal Authority and authority to do so on behalf of their respective legal entities.

26. **INSERTED PROVISIONS**

Each provision and clause required by law to be inserted into the Agreement shall be deemed to be enacted herein, and the Agreement shall be read and enforced as though each were included herein. If through mistake or otherwise, any such provision is not inserted or is not correctly inserted, the Agreement shall be amended to make such insertion on application by either Party.

27. **CAPTIONS AND TERMS**

The captions in this Agreement are for convenience only, are not a part of the Agreement and in no way affect, limit or amplify the terms or provisions of this Agreement.

28. **AUTHORITY'S RIGHTS TO EMPLOY OTHER CONSULTANTS**

Authority reserves the right to employ other consultants in connection with the subject matter of the Scope of Services.

29. **EXHIBITS**

The Exhibits referenced in this Agreement are attached hereto and incorporated herein by this reference as though set forth in full in the Agreement. If any inconsistency exists or arises between a provision of this Agreement and a provision of any exhibit, or between a provision of this Agreement and a provision of Consultant's proposal, the provisions of this Agreement shall control.

30. **FORCE MAJEURE**

Consultant shall not be liable for any failure to perform its obligations under this Agreement if Consultant presents acceptable evidence, in Authority's sole judgment, that such failure was due to acts of God, embargoes, inability to obtain labor or materials or reasonable substitutes for labor or materials, governmental restrictions, governmental regulations, governmental controls, judicial orders, enemy or

hostile governmental action, civil commotion, fire or other casualty, or other causes beyond Consultant's reasonable control and not due to any act by Consultant.

31. **FINAL PAYMENT ACCEPTANCE CONSTITUTES RELEASE**

The acceptance by Consultant of the final payment made under this Agreement shall operate as and be a release of Authority from all claims and liabilities for compensation to Consultant for anything done, furnished or relating to Consultant's work or services. Acceptance of payment shall be any negotiation of Authority's check or the failure to make a written extra compensation claim within ten calendar days of the receipt of that check. However, approval or payment by Authority shall not constitute, nor be deemed, a release of the responsibility and liability of Consultant, its employees, subcontractors and agents for the accuracy and competency of the information provided and/or work performed; nor shall such approval or payment be deemed to be an assumption of such responsibility or liability by Authority for any defect or error in the work prepared by Consultant, its employees, subcontractors and agents.

32. **ATTORNEY FEES**

In any litigation or other proceeding by which a Party seeks to enforce its rights under this Agreement (whether in contract, tort or both) or seeks a declaration of any rights or obligations under this Agreement, the prevailing Party shall be entitled to recover all attorneys' fees, experts' fees, and other costs actually incurred in connection with such litigation or other proceeding, in addition to all other relief to which that Party may be entitled.

33. **SEVERABILITY**

If any provision in this Agreement is held by a court of competent jurisdiction to be illegal, invalid, void, or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way.

34. **SUCCESSORS AND ASSIGNS**

The terms and conditions of this Agreement shall be binding on the successors and assigns of the Parties to this Agreement.

35. **NO THIRD PARTY BENEFICIARIES INTENDED**

This Agreement is made solely for the benefit of the Parties to this Agreement and their respective successors and assigns, and no other person or entity may have or acquire a right by virtue of this Agreement.

36. **COUNTERPARTS; FACSIMILE/PDF/ELECTRONIC SIGNATURE**

This Agreement may be executed in multiple counterparts, all of which shall be deemed an original, and all of which will constitute one and the same instrument. The Parties agree that a facsimile, PDF or electronic signature may substitute for and have the same legal effect as the original signature.

37. **DRAFTING PARTY**

This Agreement shall be construed without regard to the Party that drafted it. Any ambiguity shall not be interpreted against either Party and shall, instead, be resolved in accordance with other applicable rules concerning the interpretation of contracts.

IN WITNESS WHEREOF, the Parties have caused the Agreement to be executed as of the date set forth above.

RECOMMENDED FOR APPROVAL

Enter Your Name, Enter Your Title

CONSULTANT NAME

Enter Consultant's Name

By: _____

Name: _____

Title: _____

Date: _____

SILICON VALLEY CLEAN ENERGY

AUTHORITY

A Joint Powers Authority

By: _____

Name: Monica Padilla

Title: Chief Executive Officer

Date: _____

APPROVED AS TO FORM:

Counsel for Authority

ATTEST:

Authority Clerk

Exhibit A

Scope of Services

[Click here to enter text.](#)

Exhibit B
Schedule of Performance

[Click here to enter text.](#)

This schedule may be modified with the written approval of the Authority.

Task	Begin	Complete
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Exhibit C
Compensation

Authority shall compensate Consultant for professional services in accordance with the terms and conditions of this Agreement based on the rates and compensation schedule set forth below. Compensation shall be calculated based on the hourly rates set forth below up to the not to exceed budget amount set forth below.

The compensation to be paid to Consultant under this Agreement for all services described in Exhibit “A” and reimbursable expenses shall not exceed a total of [Click here to enter dollar amount in words.](#) dollars ([\\$Click here to enter dollar amount in numerals.](#)), as set forth below. Any work performed or expenses incurred for which payment would result in a total exceeding the maximum amount of compensation set forth herein shall be at no cost to Authority unless previously approved in writing by Authority.

Task	Estimated Budget
-------------	-------------------------

1.	\$ XX,000
2.	\$ XX,000
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
Total	

Rates

Personnel	Title	Hourly

Invoices

Monthly Invoicing: In order to request payment, Consultant shall submit monthly invoices to the Authority describing the services performed and the applicable charges (including a summary of the work performed during that period, personnel who performed the services, hours worked, task(s) for which work was performed). Authority shall pay all undisputed invoice amounts within thirty (30) calendar days after receipt up to the maximum compensation set forth herein. Authority does not pay interest on past due amounts.

Reimbursable Expenses

Administrative, overhead, secretarial time or overtime, word processing, photocopying, in house printing, insurance and other ordinary business expenses are included within the scope of payment for services and are not reimbursable expenses. Travel expenses must be authorized in advance in writing by Authority

Additional Services

Consultant shall provide additional services outside of the services identified in Exhibit A only by advance written authorization from Authority Representative prior to commencement of any additional services. Consultant shall submit, at the Authority Representative's request, a detailed written proposal including a description of the scope of additional services, schedule, and proposed maximum compensation. Any changes mutually agreed upon by the Parties, and any increase or decrease in compensation, shall be incorporated by written amendments to this Agreement.

[Review insurance coverage and amounts to confirm they are appropriate for each scope of service]

Exhibit D

Insurance Requirements and Proof of Insurance

Consultant shall maintain the following minimum insurance coverage:

A. **COVERAGE:**

(1) **Workers' Compensation:**

Statutory coverage as required by the State of California.

(2) **Liability:**

Commercial general liability coverage with minimum limits of \$1,000,000 per occurrence and \$2,000,000 aggregate for bodily injury and property damage.

ISO occurrence Form CG 0001 or equivalent is required.

(3) **Automotive:**

Comprehensive automotive liability coverage with minimum limits of \$1,000,000 per accident for bodily injury and property damage. ISO Form CA 0001 or equivalent is required.

(4) **Professional Liability**

Professional liability insurance which includes coverage for the professional acts, errors and omissions of Consultant in the amount of at least \$1,000,000.

(5) **Privacy and Cybersecurity Liability** **[May be reduced or eliminated based on scope of services]**

Privacy and cybersecurity liability (including costs arising from data destruction, hacking or intentional breaches, crisis management activity related to data breaches, and legal

claims for security breach, privacy violations, and notification costs of at least \$5,000,000 US per occurrence.

Exhibit E

Confidentiality and Data Security Requirements

Subject to the terms and conditions of the Agreement, current proprietary and confidential information of Authority regarding customers of Authority (“Authority Customers”) and/or other confidential information (collectively “Confidential Information”) may be disclosed to Consultant from time to time in connection herewith solely for the purposes set forth in the Agreement. Such disclosure is subject to the following legal continuing representations and warranties by Consultant:

1. The Confidential Information disclosed to Consultant in connection herewith may include, without limitation, the following information about Authority Customers: (a) names; (b) addresses; (c) telephone numbers and email addresses; (d) service agreement numbers and account numbers; (e) meter and other identification numbers; (f) Authority-designated account numbers; (g) electricity and gas usage (including monthly usage, monthly maximum demand, electrical or gas consumption, HP load, and other data detailing electricity or gas needs and patterns of usage); (h) billing information (including rate schedule, baseline zone, CARE participation, end use code (heat source) service voltage, medical baseline, meter cycle, bill cycle, balanced payment plan and other plans); (i) payment / deposit status; (j) number of units; and (k) other similar information specific to Authority Customers individually or in the aggregate. Confidential Information shall also include specifically any copies, drafts, revisions, analyses, summaries, extracts, memoranda, reports and other materials prepared by Consultant or its representatives that are derived from or based on Confidential Information disclosed by Authority, regardless of the form of media in which it is prepared, recorded or retained.
2. Except for electric and gas usage information provided to Consultant pursuant to this Agreement, Confidential Information does not include information that Consultant proves (a) was properly in the possession of Consultant at the time of disclosure; (b) is or becomes publicly known through no fault of Consultant, its employees or representatives; or (c) was independently developed by Consultant, its employees or representatives without access to any Confidential Information.
3. From the Effective Date, no portion of the Confidential Information may be disclosed, disseminated or appropriated by Consultant, or used for any purpose other than the purposes set forth in the Agreement.
4. Consultant shall, at all times and in perpetuity, keep the Confidential Information in the strictest confidence and shall take all reasonable measures to prevent unauthorized or improper disclosure or use of Confidential Information. Consultant shall implement and maintain reasonable security procedures and practices appropriate to the nature of the information, to protect the personal information from unauthorized access, destruction, use, modification, or disclosure and prohibits the use of the data for purposes not set forth in the Agreement. Specifically, Consultant shall restrict access to Confidential Information, and to materials prepared in connection therewith, to those employees or representatives of Consultant who have a “need to know” such Confidential Information in the course of their duties with respect to the Consultant program and who agree to be bound by the nondisclosure and confidentiality obligations of this Agreement. Prior to disclosing any Confidential Information to its employees or representatives, Consultant shall require such employees or representatives to whom Confidential Information is to be disclosed

to review this Agreement and to agree to be bound by the terms of this Agreement. Consultant shall not disclose Confidential Information or otherwise make it available, in any form or manner, to any other person or entity that is not Consultant's employee or representative (a "Third Party"), except where that Third Party has separately entered into a nondisclosure agreement with Authority. Without limiting Consultant's obligation of confidentiality as further described herein, Consultant shall be responsible for establishing, maintaining, and providing a written description to Authority of, a data privacy and information security program, including physical, technical, administrative, and organizational safeguards, that comply with or are substantial similar to the security controls identified in the current version of NIST SP800-53, and that is designed to: (a) ensure the security and confidentiality of the Authority's Data; (b) protect against any anticipated threats or hazards to the security or integrity of the Data; (c) protect against unauthorized disclosure, access to, or use of the Data; (d) ensure the proper disposal of Data; and, (e) ensure that all employees, agents, and subcontractors of Consultant, if any, comply with all of the foregoing. In no case shall the safeguards of Consultant's data privacy and information security program used to protect Data be less stringent than the safeguards used by Consultant for its own data. If the services include handling credit card information, then the Consultant shall comply at all times with all applicable Payment Card Industry Data Security Standards (PCI-DSS). Consultant agrees and warrants that it is responsible for the security of "cardholder data" that Consultant possesses, stores, processes or transmits on behalf of the Authority, and for any impact on the security of Authority's cardholder data environment adversely affected by any failure of Company to maintain compliance with provisions of the PCI-DSS applicable to the services. No less than annually, Consultant shall conduct a comprehensive independent third-party audit of its data privacy and information security program and provide such audit findings to Authority. The required audit shall be a SOC Type II (or successor standard) compliant audit, and Consultant shall provide the audit findings in the form of a SOC Type II (or successor standard) report.

5. Notwithstanding the above, Consultant may disclose Confidential Information to the extent required by an order, subpoena, or lawful process requiring the disclosure of such Confidential Information issued by a court or other governmental authority of competent jurisdiction, provided that Consultant notifies Authority immediately upon receipt thereof to allow Authority to seek protective treatment for such Confidential Information.
6. In the event of any act, error or omission, negligence, misconduct, or breach that permits any unauthorized access to, or that compromises or is suspected to compromise the security, confidentiality, or integrity of the Authority's Data or the physical, technical, administrative, or organizational safeguards put in place by Consultant that relate to the protection of the security, confidentiality, or integrity of the Data, Consultant shall, as applicable: (a) notify Authority as soon as practicable but no later than twenty-four (24) hours of becoming aware of such occurrence; (b) cooperate with Authority in investigating the occurrence, including making available all relevant records, logs, files, data reporting, and other materials required to comply with applicable law or as otherwise required by Authority; (c) in the case of Confidential Information, at Authority's sole election, (i) notify the affected individuals who comprise the Confidential Information as soon as practicable but no later than is required to comply with applicable law including, but not limited to, the provisions of California Civil Code Section 1798.82, or, in the absence of any legally required notification period, within five (5) calendar days of becoming aware of the occurrence; or, (ii) reimburse Authority for any costs in notifying the affected individuals; (d) in the case of Confidential Information, provide third-party credit and identity monitoring services to each of the affected individuals who comprise the Confidential

Information for the period required to comply with applicable law, or, in the absence of any legally required monitoring services, for no less than twelve (12) months following the date of notification to such individuals; (e) perform or take any other actions required to comply with applicable law as a result of the occurrence; (f) without limiting Consultant's obligations of indemnification as further described in this Agreement, indemnify, defend, and hold harmless Authority for any and all Claims (as defined herein), including reasonable attorneys' fees, costs, and expenses incidental thereto, which may be suffered by, accrued against, charged to, or recoverable from Authority in connection with the occurrence; (g) be responsible for recreating lost Data in the manner and on the schedule set by Authority without charge to Authority; (h) provide to Authority a detailed plan within ten (10) calendar days of the occurrence describing the measures Consultant will undertake to prevent a future occurrence and (i) upon conclusion of the occurrence, or at Authority's request, provide to Authority a comprehensive summary of the occurrence, including reason for occurrence, details of occurrence, how occurrence was addressed and any other information required by Authority, which shall be executed by Consultant and may be relied upon by Authority as a true and accurate account of the occurrence. Notification to affected individuals, as described above, shall comply with applicable law, be written in plain language, and contain, at a minimum: name and contact information of Consultant's representative; a description of the nature of the loss; a list of the types of data involved; the known or approximate date of the loss; how such loss may affect the affected individual; what steps Consultant has taken to protect the affected individual; what steps the affected individual can take to protect himself or herself; contact information for major credit card reporting agencies; and, information regarding the credit and identity monitoring services to be provided by Consultant. This Section shall survive the termination of this Agreement.

7. It shall be considered a material breach of this Agreement if Consultant engages in a pattern or practice of accessing, storing, using, or disclosing the Confidential Information in violation of the contractual obligations described herein. Consultant understands that if Authority finds that Consultant is engaged in a pattern or practice of accessing, storing, using, or disclosing Confidential Information in violation of this Agreement Authority shall promptly cease all disclosures of Confidential Information to Consultant. Consultant further understands that if Authority receives a customer complaint about Consultant's misuse of data or other violation of the Disclosure Provisions, Authority shall promptly cease disclosing that customer's information to Consultant and shall notify the California Public Utilities Commission of the complaint.
8. Consultant shall be liable for the actions of, or any disclosure or use by, its employees or representatives contrary to this Agreement; however, such liability shall not limit or prevent any actions by Authority directly against such employees or representatives for improper disclosure and/or use. In no event shall Consultant or its employees or representatives take any actions related to Confidential Information that are inconsistent with holding Confidential Information in strict confidence. Consultant shall immediately notify Authority in writing if it becomes aware of the possibility of any misuse or misappropriation of the Confidential Information by Consultant or any of its employees or representatives. However, nothing in this Agreement shall obligate the Authority to monitor or enforce the Consultant's compliance with the terms of this Agreement.
9. Consultant shall comply with the consumer protections concerning subsequent disclosure and use set forth in Attachment B to California Public Utilities Commission (CPUC) Decision No. 12-08-045.

10. In addition to any other requirements set forth in the Agreement, within ten (10) business days of receipt of Authority's written request, and at Authority's option, Consultant will either return to Authority all tangible Confidential Information, including but not limited to all electronic files, documentation, notes, plans, drawings, and copies thereof, or will provide Authority with written certification that all such tangible Confidential Information of Authority has been destroyed.
11. Consultant acknowledges that disclosure or misappropriation of any Confidential Information could cause irreparable harm to Authority and/or Authority Customers, the amount of which may be difficult to assess. Accordingly, Consultant hereby confirms that the Authority shall be entitled to apply to a court of competent jurisdiction or the California Public Utilities Commission for an injunction, specific performance or such other relief (without posting bond) as may be appropriate in the event of improper disclosure or misuse of its Confidential Information by Consultant or its employees or representatives. Such right shall, however, be construed to be in addition to any other remedies available to the Authority, in law or equity.
12. In addition to all other remedies, Consultant shall indemnify and hold harmless Authority, its officers, employees, or agents from and against and claims, actions, suits, liabilities, damages, losses, expenses and costs (including reasonable attorneys' fees, costs and disbursements) attributable to actions or non-actions of Consultant and/or its employees and/or its representatives in connection with the use or disclosure of Confidential Information.
13. When Consultant fully performs the purposes set forth in the Agreement, or if at any time Consultant ceases performance or Authority requires Consultant cease performance of the purposes set forth in the Agreement, Consultant shall promptly return or destroy (with written notice to Authority itemizing the materials destroyed) all Confidential Information then in its possession at the direction of Authority. Notwithstanding the foregoing, the nondisclosure obligations of this Agreement shall survive any termination of this Agreement.

Attachment B – RADaR Build Requirements Document

Purpose

This document illustrates a data architecture and its requirements to build a consolidated data store and unified access to key business operational data from the various systems of record to support all business functions and reporting needs.

The central repository will be referred to as **RADaR** and it will integrate data from across the organization allowing for combined reporting, increased data quality and the mitigation of data silos. The organization has a **Demand** side for data relating to the customer and a **Supply** side for ensuring reliable delivery of energy and a sustainable company position. The data architecture should connect with SVCE’s various systems of record, orchestrate the flow of data between software systems and store all key data sets for analysis. There will be optics into the organization’s data as a whole, providing detailed reports for individual units of the business as well as summarized reports for the highest levels of management. The organization’s data will become query-able for various internal and external reports on budget, compliance filings, program success, portfolio planning, etc.

Stakeholders

By nature of being a Community Choice Aggregation (CCA) Load Service Entity (LSE), Silicon Valley Clean Energy (SVCE) has two major business functions each with their own data requirements, Demand and Supply. The Demand side of the business focuses on the customer who consumes electricity, their usage habits, success of programs to aid the customer, as well as customer outreach. The Supply side focuses on purchasing and managing electricity (and its attributes) contracts to ensure a compliant portfolio with well managed risk. There is necessity for the two sides of the business to operate independently and collaboratively. The implementation partner will assist in the integration of a mature Demand data warehouse (in BigQuery) and conduct the development of a Supply side architecture, as well as a develop a place for data to be shared between the two sides of the business.

Personnel

Primary Business Stakeholder: Director of Risk Management and Analytics, Manager of Data and Analytics

Demand: Data Engineer

Supply: Data Engineer

Core: Data Engineer

Background Information

Demand Background

Referred to as DAISY (**Data Analytics in SVCE Territory**), details are included in Attachment D.

Supply Background

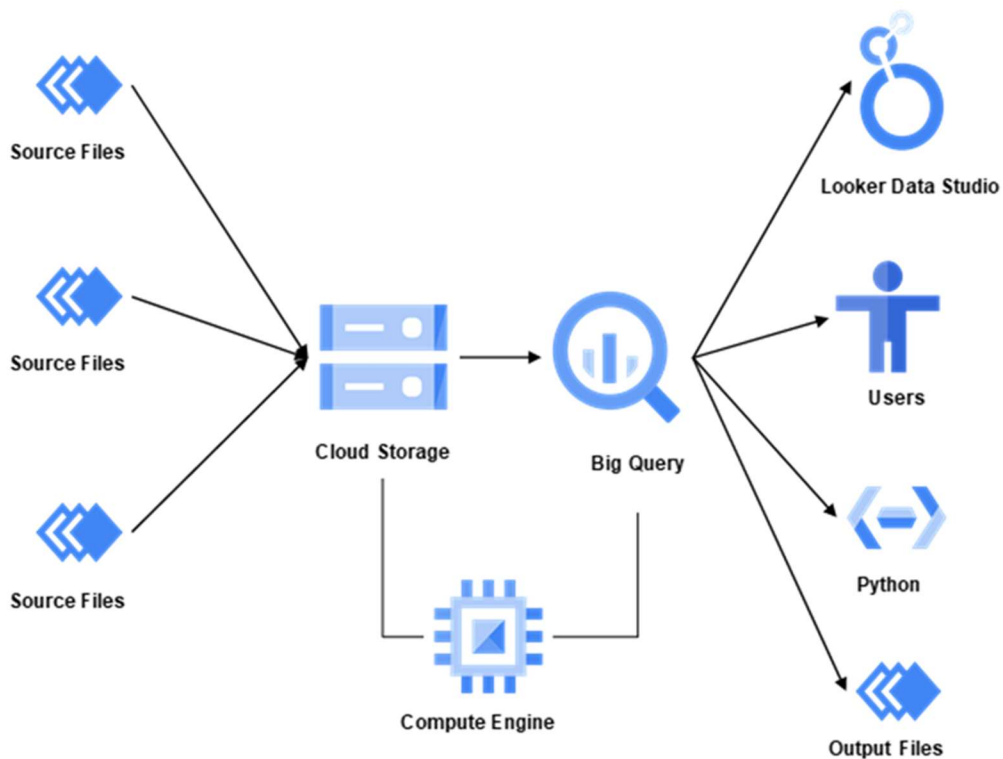
The organization of data in the supply side consists of a contract management software (Adapt2), a risk and portfolio modeling software (Ascend: PowerSIMM), a load forecasting software (Itron), in-house models, and a range of disparate Excel scripts. There is limited automation among these platforms and most data transfers are manual. The contract management software serves as a source of truth for contracts, counterparty credit ratings, their historical data, and settlements/ associated meter data. The modeling software uses contract data, including historical performance of a contract, and provides modeled outputs of financial scenarios.

Given existing data silos and lack of automation, it is difficult for the business to identify the source of truth. The developed solution should provide a consolidated data store for and a unified user interface access to key business operational data from the various systems of record to support all business functions and reporting needs. This leaves room for some intermediate, proprietary or highly specific data to remain within their system of record.

Architecture

Overview

The proposed data architecture utilizes tools within Google Cloud Platform (GCP), specifically Google Cloud Storage (GCS) and BigQuery (BQ) to perform data integration and processing functions, among others. A graphic depicting the architecture at a high level is below.



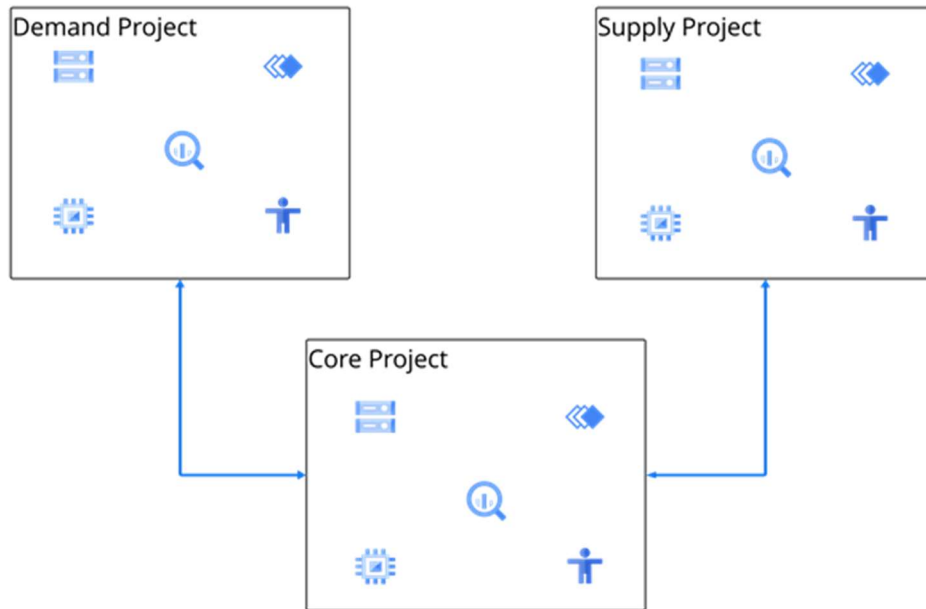
- Source data files will be organized and stored in Google Cloud Storage (GCS) according to a specific nomenclature and via programmable processes (see CE below).
- One or several Compute Engine (CE) instances will be used to perform tasks such as 1) retrieve data from external systems (SFTP, API, etc.) and if necessary, transfer that data into GCS; 2) transfer and transform data from GCS into the central data warehouse - Big Query; 3) perform other data transfer and orchestration tasks; and 4) execute queries to process data, as outlined below.
- BigQuery (BQ) will be the centralized warehouse where data will be consolidated, merged, further processed, analyzed, and stored in standardized tables both for analysis, dashboard reporting, and further data output.
- A subset of reporting tables in BQ will be used to power dashboards in PowerBI. The tables will be lightweight and designed to support dashboarding performance but will be based on standardized BQ tables to optimize compute resources.
- Standard output files will be generated as necessary and placed into GCS buckets, also according to a specific nomenclature. These files will be used for input into other business applications and to support specific use cases.
- Users will be able to access the underlying data sets (whether in GCS or BQ), based on permissions, either via direct web-based interfaces, command line interfaces, Python notebooks, or even other BI or software / API connections, as supported by GCP. All users will have a unified way to access data in the system, ensuring a single source of truth.

There are several data processing and orchestration components highlighted above. In this proposal, all of these will be handled by scripts or programs that are operating on Compute Engine instances which will be responsible for the data flows. The source code for those scripts can and should be managed via a Github repository.

Google Cloud Platform

SVCE already has experience with GCP, since some of its largest and most mature datasets are already managed in GCP (DAISY). Therefore, the supply-side use cases of SVCE can be easily and cost-effectively met by the cloud features of GCP.

Projects



The diagram above shows how the mature Demand side data warehouse DAISY will connect with the Supply side data and have shared information in the Core project. This setup will allow DAISY to remain unaffected. BigQuery Data Transfer Service will be used for the duplication of any data between projects, with clear documentation on the Project containing the source of truth.

Google Cloud Storage

Cloud Storage will operate as the underlying depository or data lake for all relevant data files. A structured hierarchy will be established within GCS to house the input raw data files from various sources, as well as the standardized output files.

BigQuery

In this architecture, several datasets will be employed to logically group and segregate data (in addition to segregation by GCP Project). Datasets in the BQ might include:

- Datasets to store raw data as imported from GCS, including historical versions
- Datasets to store processed data, including versions
- Datasets to store what are known as 'core' tables that support multiple business functions and are the key to the consolidation of data
- Datasets that store reporting data to use for dashboarding or other custom user reports
- Datasets that store output data to be pulled out of BQ and into GCS for further downstream consolidation.

Since SVCE will be inheriting much of its demand side data from DAISY, in a system that already uses BQ, it makes sense that the conventions that SVCE ultimately employs are based on those already in use with DAISY.

Orchestration

Most of the data streams in the Supply side of the business are data between multiple models and calculations. Most of the problems arise from lack of data provenance within and among these data streams. The routing of data between models and excel spreadsheets should be automated, tracked, and stored in the central repository. For example, a copy of the contracts portfolio that is routed to the modeling software should exist in the central repository for context on the versioned modeling results. Most of the data is clean and will not require much filtering prior to loading into a data warehouse. Therefore, the data workflows efforts are expected to be large in proportion to the ETL tasks. The Demand side data architecture utilizes version-controlled SQL based ETL. This SQL ETL will be reproduced for the Supply and Core data warehouses.

Workflows	Inputs	Outputs	Dependent Processes	Process Medium	Update Frequency	Priority
Risk Oversight Committee Reporting	8	2	0	Excel	Daily	1
Budget Formation	6	1	0	Excel	Daily	1
Load Forecasting	6	1	5	Itron Software	Quarterly	1
Internal Analytics Engine	5	0	1	Python	Daily	1
Renewable Portfolio Standard Compliance	5	3	0	Ascend Software	Quarterly	1
External Portfolio Modeling	4	6	5	Excel	Bi-Weekly	1
Internal Net Revenue Modeling	4	1	2	Excel	Daily	1
Organization Financial Stress Testing	3	3	0	Excel	Daily	1
Projected vs Actuals Clean Energy Position	14	1	0	Excel	Daily	2
Bilateral Settlements with Contract Counterparty	10	2	0	Excel	Monthly	2
Resource Adequacy Report	4	1	0	Excel	Monthly	2
RA Obligation Report	4	4	0	Excel	Monthly	2
Renewable Contract Report	4	1	0	Excel	Quarterly	2
CAISO Shadow Settlements	3	1	0	Adapt2 Software	Daily	2
Counter Party Credit Report	3	2	1	Excel	Daily	3
Slice of Day Resource Adequacy (RA)	Unkown	Unkown	Unknown	Excel	Daily	3
Climate Registry Information System	4	1	0	Excel	Quarterly	4

Historic Customer Data Report	3	1	0	Excel	Ad-Hoc	4
RA Contract Report	2	1	0	Excel	Ad-Hoc	4
Retail Sales Report	1	1	0	Excel	Ad-Hoc	4

Included here are 21 workflows that represent the majority of what will be integrated into this system build. There are 66 unique data inputs that would need to be uploaded to GCS and a number of outputs that will become dashboard ready tables in BQ in the Supply or Core Projects. Inputs will come in the form of software extracts and files placed in upload folders. All inputs should be version tracked upon upload to maintain data lineage. All Excel processes will need to be conducted in GCP with version-controlled scripts. Batch processing on hourly and daily schedules will be sufficient. Outputs of automated processes should have tracked output files and error logs. There is a breakdown of these workflows in the Excel spreadsheet in Attachment C.

Several software will need automated connections inside GCP, such as Ascend, Adapt2 and possible Itron. These software integrations will require various connection methods, Ascend can be interfaced via an API connection, Adapt2 can be accessed via a Microsoft SQL database while Itron has an internal tool for automated ingestion from a file store and auto-exports into standard folders.

Example Data Workflow: Portfolio Management and Modeling

A filtered contract portfolio will be exported from the contract management software via an automated SQL query to a CSV upload folder for loading into the Supply project. The portfolio will then be routed to a risk modeling software via an API connection and stored in the Supply database. Upon ingestion into the Supply database simple accounting math can be applied to form an accounting portfolio. The modeled portfolio can be extracted via API from the modeling platform and compared to the accounting portfolio. A summarized portfolio table can be routed to the Core database and combined with cross organizational data such as Demand Side Load and Accounting Budget.

Organization leaders will have access to data in easily digestible charts and tables built from intuitively laid out reporting tables. Power Users will have access to these reporting tables, including more fields, through GCS to conduct ad hoc analysis or prototype new analyses. This represents a simplified example workflow.

Compute Engines

Google Compute Engine (CE) is being considered in this architecture primarily to support the scheduling and execution of all orchestration / workflow processes, and they should be configured in a highly secure manner. For example, there might be multiple Compute Engines separated for security. Some Compute Engines would have access to specific GCS folders to upload data to external APIs while others can download data from External APIs. Others would only be able to execute tasks within specific GCS projects. The goal will be a least privilege configuration for each Compute Engine while minimizing the total number by combining tasks from various business processes.

While Compute Engines are to be considered for orchestration and the execution of tasks, SVCE is open to other options for orchestration as long as they meet the minimum functionality requirements as outlined in Section 17 of the RFP.

Data Structure

Google Cloud Storage Buckets should be configured to separate data by business function, specific data workflow, data table, input/output and status in a hierarchical fashion. The input folder should be structured to divide imported-unprocessed, processing, processed and error. Similarly, the output folder should be structured to divide processing, processed and error. An upstream process can be used to format the input file names in a consistent manner, and to include one required date/time stamp for when the file was generated, and an optional date/time stamp for when the file was processed. This or similar flat structure with the hierarchy captured in file names. The file structure should hold a deep data lineage if in the future a historic file is needed again or an error needs troubleshooting.

There will be a consistent format for data used across the organization. Imported data will be converted to have the standard timestamp, energy units. Export files for business users to conduct one-off analyses will have many formats for timestamp, energy units and other variables so the file requires minimal editing.

Requirements

Data Properties

- Non-relational sources:
 - o PDFs/Word files:
 - Contracts
 - Regulatory Filings
 - Legislative Updates
 - Invoice Data (Blue Bills) (TBD)
 - o Email
 - Regulatory Correspondence
 - Broker Quotes
 - Customer Email Data (TBD. Dependent on MarComm team and ability for new email marketing platform)
- Data Volumes
 - o Current
 - Demand (These values will be reduced with cleanup within GCS and BQ)
 - BigQuery: ~160 TiB
 - Cloud Storage: ~120 TiB
 - o ~10 TiB for imports, exports, Salesforce, external vendor access
 - Supply ~ 5 TiB
 - o Yearly Growth
 - DAISY (svce-demand) (These values will be reduced with cleanup within GCS and BQ)

- BigQuery: ~ 20 - 25 TiB/yr
 - CloudStorage: 1 TiB/yr
 - PRO (svce-supply) ~ 1 TiB/yr
- Cloud based
- No Streaming Data
- Historic Records
 - o We require snapshots of the supply side on a 1 month cadence.
 - We will need to report from these vintages for some duration up to several years.
 - Possible to be broken down into specific sources

Data Access

- Tables should be built for optimized loading into dashboards
 - o Dashboard-dependent mix of batch and interactive queries
- No master data
- 24/7 uptime
- User Load
 - o Total: 100
 - o Concurrent: 25
 - o Power Users: < 20 (database access)
- Developer access to data for internal model development

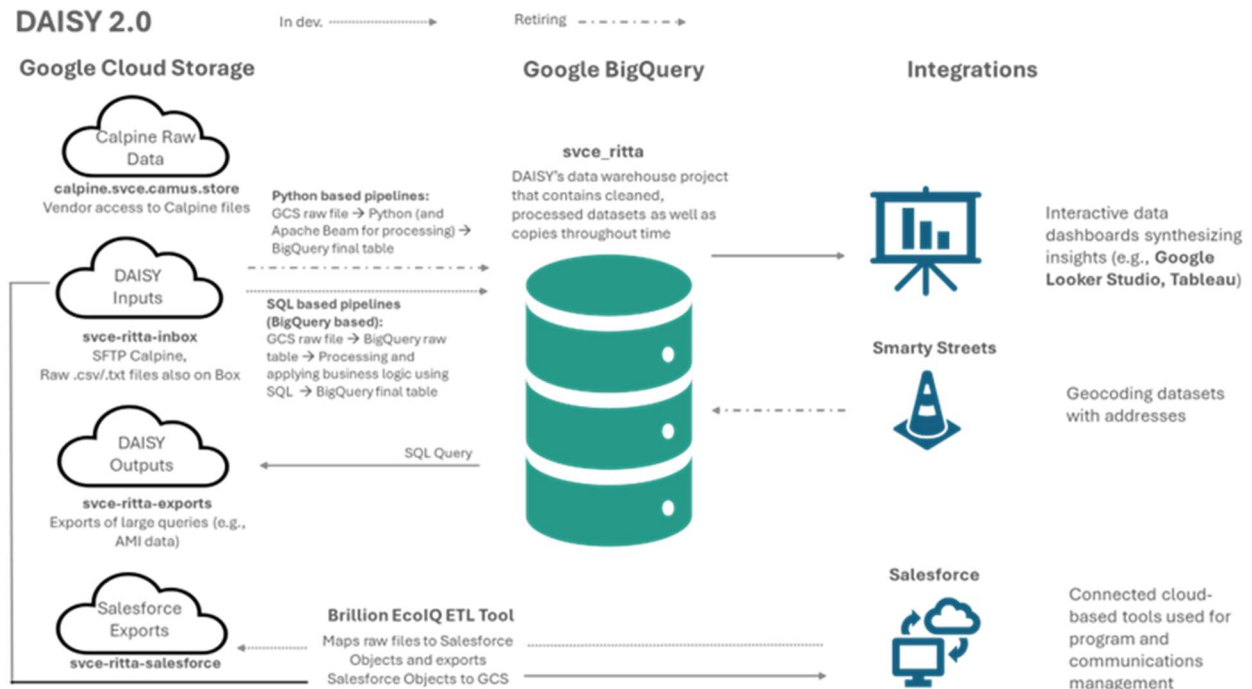
Attachment C – Supply Data Workflows

See Excel spreadsheet provided as part of the RFP materials.

Attachment D – DAISY Overview

DAISY Overview

DAISY⁶ is a vendor-built cloud-based data platform housed in Google Cloud Platform (GCP). The diagram below demonstrates DAISY at a high level – it contains 4 core Google Cloud Storage (GCS) buckets, one Google BigQuery project, and dashboards within Looker Studio. Permissions to the GCP project are managed using tiered Google Groups, where a subset of SVCE staff (Power Users) have access to directly querying and developing in the project.



CURRENT STATE:

The DAISY BigQuery project (currently named *svce-ritta*, to be renamed *svce-demand*) contains 15 core tables/datasets that mostly relate to demand-side data, including but not limited to:

- 4013 customer lists (current snapshot and historical timeline)
- GreenPrime enrollment
- Customer-level interval and monthly electricity data
- Settlement quality meter data
- Vehicle registration data
- Tax assessor data, rates
- Customer-level daily and monthly gas data
- Interconnection data

⁶ Internal name which stands for “Data Analytics In SVCE territory”

- Outage data
- Census data

Some of these tables are further geocoded using SmartyStreets to allow for joins between tables (e.g. customer addresses to vehicle registration data).

Each quarter, a new release is issued (two datasets per release – fresh and stable) to accommodate versioning and updates of data tables throughout time. DAISY also contains multiple routines built into a functions dataset to allow for quicker analytics and manipulation of data (e.g. pulling addresses, converting joules to kWh). The BigQuery project also contains a dataset specifically for reporting that is used for building dashboards within Looker Studio.

IN DEV. STATE (now through September 2025):

DAISY is currently managed and developed by vendor Camus Energy up until September 2025, after which it will be managed in-house. The following is a comprehensive list of ongoing tasks to be completed by September 2025 to get SVCE to the self-service stage:

- **Conversion to pure SQL architecture:** As mentioned in the graphic above, Camus is converting all existing pipelines to pure SQL architecture. This process will retire all existing python-based code and GCP resources. Once all pipelines are transitioned to SQL, the scripts will be automated (TBD on GCP resource). All pipelines and queries are version-controlled in GitHub.
- **Automate geocoding:** Camus is refining processes for address standardization and geocoding (assigning lat/lon and Assessor Parcel Numbers) to allow for location-based tables to be joined with higher accuracy.
- **Streamlining data transfers:** Working with our meter data management vendor, Calpine, to post directly to GCS rather than via an SFTP transfer to streamline data transfers. Developing more automated processes to send raw data from Box to GCS.
- **Adjusting IAM permissions:** Readjusting permissions for vendor service accounts and DAISY Power Users.
- **Developing views and derived tables:** To allow for easier access to data and reduce time and effort to fulfill data requests, the data team is developing views and derived tables from the existing core tables.
- **Handover of the GCP project:** Handover of a new project built on SQL architecture as well as copies of archived data. This will involve moving *svce-ritta* to a new, SVCE-owned GCP project called *svce-demand*. The pure SQL architecture will be shared with SVCE through GitHub for full ownership and maintenance.
 - **BigQuery and GCS clean-up:** Delete and restructure both BigQuery tables and DAISY inputs and outputs GCS bucket with common file structure (i.e., folder name = raw dataset name).

- **Finalize documentation:** Finalize all documentation with regards to data provenance, systems, and processes. An example, includes transparency into transaction tracking and logging to access debugging and error tracking.
- **Archiving BigQuery data:** Develop best practices to archive older versions of the data tables to retain previous snapshots of reports for compliance and comparison purposes.

FUTURE STATE (post-September 2025):

In this future state, SVCE will own and maintain the full GCP project and pipelines. This will allow SVCE to develop more pipelines using the pure SQL architecture from existing data sources including but not limited to: weather data, aging reports, invoice data, program participation, etc. There will be a larger emphasis on importing and exporting data in and out of Salesforce using Brillion (the Salesforce vendor)'s ETL tool. Existing dashboards will be translated from Looker Studio into PowerBI and all tables used for reporting will be moved into the core RADaR project. Any remaining standards adopted for RADaR will be implemented into DAISY. The primary goal of DAISY will continue to serve as a repository for demand-side data that is easily accessible and usable by all SVCE staff.