Scorecard

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

CDT Scorecard

Decision *

Not approved - minor changes needed

Discovery Tab

1. User research was conducted and can be validated by attachments

Yes

2. User research appears comprehensive and includes all identified stakeholder or user personas identified in Stage 1

Yes

3. Existing business processes identify business roles, clear workflows, and sufficiently describe current business activities

Yes

Discovery Comments

Discovery Cont'd Tab

1. Logical architecture diagram can be clearly understood and it is clear how the technology meets the current business functions

Yes

2. Documentation clearly identifies all system components associated with the existing architecture including solution type (i.e. COTS, MOTS, Custom), runtime environment, interfaces, and network.

Yes

3. System interfaces are clearly identified

Yes

4. The location of the existing system's data center is identified

Yes

5. Data categorization table, identifies the data elements currently used and the security level for the data type

Yes

6. Detailed technical documentation is provided and is sufficient corresponding to each checked box

Yes

Discovery Cont'd Comments

Exploration Tab

1. There is sufficient information to understand the types of internal/state/or other governmental systems were researched and evaluated as potential solutions'

Yes

2. Each potential solution explored identifies the type of solution

3. Each potential solution provides an evaluation discussion of how this meets the business needs

4. The lessons learned includes identification of additional requirements, procurement options, and resourcing information

5. User stories or business requirements are attached

6. User stories or business requirements cover requirements for each persona identified in Stage 1

7. User stories or business requirements provide a "why" statement that ties the requirement to the business need

8. User stories or business requirements are clearly written and measurable

9. There are definitions for any programmatic jargon within the user stories or business requirements

10. There are user stories or business requirements that include business and technical personas

11. The user stories or business requirements are not biased towards a specific technical solution

Exploration Comments

Market Research Summary Tab

1. Narrative identifies the types of research conducted

2. Narrative identifies how the results of the market research affected the development of the requirements

3. Narrative identifies how the results of the market research affected the recommended procurement methodology

4. If applicable, the narrative summarizes the buy options explored

5. Narrative identifies buy option procurement vehicles available

6. Narrative demonstrates an alignment of the market research to the recommended alternative

7. The Market Research template is attached

8. Any RFIs are attached

9. Any RFI results are attached

10. Market research documentation demonstrates a parity of evaluation of the top three alternative solutions considered

11. Market research documentation contains clear evaluation criterion

12. Requests for Information documentation identifies business requirements that align to the user stories or business requirements attached in Exploration

13. Results of Request for Information scoring criterion aligns to the criterion identified in Alternative Identification

14. Results of the Request for Information are evaluated using the same criterion

Market Research Summary Tab

Updates Required Tab

1. If updates made, User stories or business requirements are attached

2. If updates made, User stories or business requirements cover requirements for each persona identified in Stage 1

3. If updates made, User stories or business requirements provide a "why" statement that ties the requirement to the business need

4. If updates made, User stories or business requirements are clearly written and measurable

Updated Required Comments

Alternatives Identified Tab

1. Each alternative is clearly identified and assigned a type

2. The primary criterion narrative aligns to the individual criterion listed

3. Each Alternative is assigned a solution approach

4. The Gap percentage identified for each alternative is supported by the attached documentation in a way in which the gap percentage could be independently validated

5. The Rough Order of Magnitude aligns to the FAWs

6. Responses to Interfaces and Conversion align to the business requirements identified in Discovery and Exploration

7. Procurement Options include the types of procurement vehicles available

8. Risks and Constraints consider risks to Costs, Time, Requirements and Quality

9. The rationale for selection is supported by the Market Research documentation and the comparison of the Alternatives

10. Assumptions and Constraints take into consideration organization, financial, enterprise portfolio, resource, and scheduling factors

11. Solution approach is identified and aligns to the recommended alternative description

12. Cloud services leveraged or not leveraged aligns to the recommendation narrative and the market research documentation

Alternatives Identified Comments

Roadmap Update Tab

1. Dates are provided for Planning and Project Start and End Dates

2. Start and end dates align to the dates provided in the project schedule

3. Project schedule identifies at a minimum high level task areas, start and end dates, identifies milestones, and aligns to the resourcing identified in the Alternative Comparison matrix for the chosen alternative

4. The data management strategy aligns to the business case, identifies governance practices, identified data management roles and responsibilities including business representation and sponsorship.

5. The updated Roadmap, identifies milestones and aligns to the business needs, business objectives, business user stories/business requirements, and the characteristics of the recommended solution and approach

6. The High Level Project Schedule aligns to the Working project schedule

Roadmap Update Comments

Implementation Methodology Tab

1. Implementation narrative includes information regarding the resources to be used in the project, the implementation methodology being considered, and project management tools to be used

2. Implementation narrative aligns with the type of solution, resources, and procurement strategy documented in the Recommended Alternative Information tab

3. If Agile or Hybrid is chosen an Readiness Assessment is attached

4. The implementation strategy is appropriate for the type of solution

5. The Readiness Assessment for Agile, identifies the vulnerable aspects of implementing Agile or a Hybrid approach and identifies the strategies the project will use to address the need

Implementation Methodology Comments

Professional Services and Acquisition Approach Tab

1. The professional services align to needs for the solution identified in the Alternative Comparison

2. In evaluating the task areas for the project implementation, the professional services and state staff cover all relevant areas

Professional Services and Acquisition Approach Comments

Project Management and Organizational Readiness Tab

1. All project artifacts have a completion status

2. All project artifacts with a status of NA, have had a follow up conversation to validate why the artifact is not needed for the project.

3. All uploaded artifacts have been reviewed and follow industry best practices for each plan.

4. All uploaded plans align with the project approach and project methodology

5. Research into CDT portfolio information for the state entity validates the response to outstanding project approval conditions

6. Are there concerns regarding the successful implementation of this PAL project as a result of the outstanding conditions?

Project Management and Organizational Readiness Comments

Human Resource Management Tab

1. The organization chart aligns the project management methodology

2. Project sponsorship is clearly identified

3. Key project roles are clearly identified

4. There is a clear separation in the organization chart for oversight and IV&V services

5. The organization chart follows industry best practices

6. The narrative addresses the proposed governance framework for the procurement

7. The narrative addresses experience of the staff tasked with completing the procurement activities

8. The proposed procurement staff align to the organizational chart and to the attached project schedule

9. The narrative identified staff experience using the STP Streamlined Template

10. Narrative identifies the familiarity of the procurement staff in protest and negotiation activities

Human Resource Management Comments

Data Conversion/Migration Tab

1. The Data migration strategy aligns with the response provided in the Road Map update for preferred alternative data management strategy

2. The data management strategy aligns to the business case, identifies governance practices, identified data management roles and responsibilities including business representation and sponsorship.

3. The data conversion/migration activities identified align to recommended solution and approach

4. Any responses with an NA, have been followed with a conversion that validates the responses provided

Data Conversion/Migration Comments

Risk Assessment Tab

1. Project Management risk score is provided and aligns to the PM Risk Assessment template results

2. Project Management template were validated by follow up conversation with the organization

3. The Risk Registry template follows industry best practices including aligning to the risk management plan, identified fields for risk description, triggers, risk manager, likelihood and impact scores, and disposition

4. SIMM 45-C is attached

5. The SIMM 45-C results were validated by additional conversations with the organization

Risk Assessment Comments

Recommended Alternative Tab

1. Business functions identified align to the business functions identified in the Discovery and Exploration tabs

2. Application, Systems and Components, hardware, runtime environment, Service/Device Function. Operating System, System Software align to the identified technology in Recommended Alternative Information

3. System interfaces align to the information provided in the Discovery Continued and Exploration tabs

4. The Data Center aligns the Recommended Alternative and Alternative Comparison tabs

5. Security Access and information types align to the Security categorization table provided Discovery Continued tab

6. The protective measures are appropriate for the level of security identified in the Security Categorization table and the Type of information contained.

7. The data owner is an individual found within the business organization

8. The data custodian is an individual from the technical organization

9. Existing capabilities align to the existing system and business processes identified in Discovery and Discovery continued

10. New capabilities align to the user stories/business requirements and Recommended Alternative

11. The fiscal year of completion aligns to the FAWs

12. Start and End dates align to the project schedule and information in the Roadmap Updates

13. The Planning, Project and M&O costs align to the costs in the FAWs

14. Funding sources identify specific funds and align to the FAWs

15. FAWs align to the project schedule for planning, project and M&O

16. FAWs state resources align to the organization chart and Alternative comparison for each of the documented alternatives

17. FAWs the procurement strategy included specific types of contracts and purchases identified in the Professional Services and Acquisition approach are aligned to the professional services and IT services sections of each alternative

18. FAWs funding aligns to Cost summary values

19. FAWs that reference BCPS, align to the values in the BCP for either planning or project

Recommended Alternative Comments

Procurement Readiness Tab

1. Conversations were held with the organization to validate the responses to each of the questions

2. SIMM Section 71 Certification of Compliance is attached if applicable

Procurement Readiness Comments

Executive Transmittal Tab

1. The Executive transmittal is attached and contains all the appropriate signatures

Yes

Executive Transmittal Comments

All signatories approved this submittal online. Note that the CIO approved for the Director. The

Changes Required

Changes required for approval *

Prior Stage Review

Prior Stage Review

Please begin Stage 2 by linking to the associated Stage 1 workflow. Stage 1 may be un-submitted or submitted.

The following fields are required in the Stage 1 in order for the information to be pulled into Stage 2. If you need to, go back to Stage 1 to complete these fields, Save Progress, then come back to this Stage and Tab.

- Project (Proposal) Name
- State Entity Name
- Contact
- Executive Business Sponsor
- IT Sponsor
- Business Sponsors

To link to the previous stage, enter the unique Workflow ID (i.e., Stage 1 – 00123).

Stage 1 - 00030

Project Name

Renewable Portfolio Standard Database (RPSD) Expansion

You may begin editing any Stage prior to submittal to CDT. However, each Stage must be submitted to CDT for approval in order from Stage 1 through 4.

Please briefly describe any updates to the previous Stage:

This project's S1BA was approved in year 2017 and a Project number #8660-081 was assigned. Subsequently an updated S1BA and approved Project Charter were submitted on 6/8/2018.

CPUC began the S2AA work subsequent to the submission. Progress report has been shared over the months with CDT Representatives for CPUC.

While conducting S2AA work, the team realized that an amendment is needed to the S1BA and approved Project Charter to remove certain objectives related to assigning a common unique permitting ID# and developing a permitting ID issuing System.

Also, added coverage for a new Legislation SB 100 that modifies the procurement goals, compliance and exemption rules.

Upload updated files
Note: If no updates are present, proceed to Next.

8660-081 RPSDB Expansion Project S1BA 2018.pdf, Amendment_RPSDB_Expansion_ProjectCharter_8660-081_20190111.pdf, Amendment_RPSDB_Expansion_ProjectCharter_8660-081_20190111_20190314.doc

Discovery

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Discovery

Discovery is an information-gathering process meant to develop, research, and examine key areas that are foundational to a successful implementation or acquisition. Discovery should address user needs, technical solutions, industry capabilities, and implementation approach. Scope and depth of research and inquiry will differ from project to project, but the results are the same: valuable data. The more information you gather, interpret, and comprehend, the more prepared you will be to execute a project on target.

USER RESEARCH

Best practice is to complete user and stakeholder research for each business need to inform requirement elicitation activities and prepare for market research.

Please identify all methods used to conduct user research and dates conducted.

For additional guidance on techniques to gather user research and requirements, consult the PMOK and BABOK.

TIP: Documentation should detail the traceability between the user research and the business needs.

Documentation Analysis - These are the techniques used to gather requirements by reviewing existing documentation, and documentation of processes similar to the business need. This includes desk audits, reviewing plans, legilsation, manuals and literature. This is a crutial step for projects that intend to replace existing business processes.

Checked

Completed Date

06/08/2018

Task/Process Analysis - Process analysis is the analysis of workflow information to understand the processing needs to elicit requirements for the project. Techniques may include review of existing workflows or leveraging information gained from interviews/manuals to understand the larger processes. This form of analysis is useful for piecing together workflows that involve multiple stakeholders or business groups.

Checked

Completed Date

12/20/2018

Focus Group - Holding focus groups is a technique to gather requirements and to understand expectations of users, stakeholders and the business program. This is a particularly useful technique when eliciting needs from stakeholders that are in complementary business areas especially in conjunction with surveys or documentation analysis in order to identify needs that may not be documented.

Checked

Completed Date

12/20/2018

Other(s) - Other techniques could include review of website traffic statistics, conducting brainstorming or flow-charting sessions, or reverse engineering of existing solutions.

Checked

Completed Date

12/20/2018

If Other(s), briefly list here

CPUC IT and CPUC Business Subject Matter Experts in Energy Division jointly reviewed the S1BA Document and Project Charter. Energy Division also independently reviewed the documents in the context of Legislations SB350, SB697 and SB100.

These resulted in updates to Project S1BA Objectives and Project Charter.

CPUC Business and CPUC IT jointly created the Mid-level Solution Requirements for S2AA based on the analyses of requirements.

Existing Business Process Documentation

This section is intended to collect information regarding existing business processes. Please attach business process documentation, workflows, architecture diagrams, or logical data flows that identify key information such as:

•Business Needs/Pain Points

•Alignment of business needs to Epics

•Impacted Stakeholders/Program Areas

•# of current system users

•Scale of workload

Tip: Assist in the validation of user requirements and the identification of any gaps that may still need evaluation

Attach Business Process Documentation - Existing business processes are crucial to understand in order to develop relevant business requirements, to understand existing technical capacity, and to identify opportunities for business process reengineering. This technique is often called As-Is business processes. Attachments such as workflows would also be appropriate.

RPS_ProcessFlow_Annual_File_As_Is.pdf, RPS_ProcessFlow_Monthly_File_As_Is.pdf, RPS_ProcessFlow_Offer_File_As_Is.pdf

Discovery Cont`d

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Technical Discovery

This section is to collect information regarding existing systems to inform requirement elicitation activities, to prepare for market research, and to plan readiness activities.

Resources:

- Technical Reference Model (http://cdt.ca.gov/enterprise-architecture-standards/)
- Service Component Reference Model Practices (http://cdt.ca.gov/enterprise-architecture-standards/)
- Enterprise Architecture Glossary (http://cdt.ca.gov/wp-content/uploads/2017/02/SIMM_58C_Enterprise_Architecture_Glossary_04132011.pdf)
- Data Categorization Table (https://cdt.ca.gov/wp-content/uploads/2018/01/SIMM-5305_A_2018-0108.pdf)
- Data Basics - Video (https://www.youtube.com/watch?v=9x-iZDlBYEc&index=5&list=PLxDZzUCtWqT8Odqe4Kgo9qcMJg2wiunnZ)
- Data Basics - Transcript
- Privacy Information Assessment - example TBD

TIP: Best practice is to involve an Enterprise Architect in the analysis of existing systems or processes.

TIP: Consult with the Information Security Office on Data Categorization and Privacy Information Assessments because the necessary documentation is usually on file.

Please attach documentation resulting from technical discovery activities. Indicate which elements are addressed in the attached documentation. Check all that apply:

Systems , Data , Data Volumes , Interfaces , Understood business rules , Security - Data Classification and Categorization , Security - Privacy Impact Assessment (if applicable)

Attachments should include existing logical diagrams representing the impacted architecture
Multiple documents may be attached

data_dictionary.mht, Information privacy and security policy.pdf, IOU_Monthly_Data_Submittal_File_Format_2017-07-13.xlsx, IOU_Offer_Data_Submittal_File_Format_2017-07-13.xlsx, RPSDB_8660-081_Technical_Architecture_As_Is.pdf, RPSDB_Data_Classification_Categorization-Worksheet.docx, RPSDB_8660-081_Business Data Dictionary_based_on_CDT_template.pdf, RPSDB_8660-081_Architecture_Components_As_Is.pdf, RPSDB_8660_081_CDT_OIS_Wave3_PTA_PIA_form_filled.pdf

Intro to Exploration

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Intro to Exploration

The next series of questions will walk through researching and analyzing options from a variety of sources.

Consider the following techniques:

Internet Research
Watching Demonstrations
Interviews with Programs
Review project closeout reports or PIERs

Exploration provides visibility to valuable lessons learned, saves time, and may provide potential leverageable alternatives.

The following entities should be researched:

Within the Department
Other Departments within the Agency
Other California State Entities
Local Governments
Other States
Federal Entities

Exploration of Existing Options

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Exploration of Existing Alternative Options

Are there any potential solutions within your organization or Agency that could be leveraged for this business need?

Yes

Solution Name

Existing RPS Portal, database and Front-end

What is the solution type? (Custom or Commercially Available)

Custom

How does this solution meet the business needs? This identifies the high level requirements needed by the organization and identifies how this option meets those requirements and alignment to the state entity's strategic plan. Consider the strategic business goals, needs, objectives, high level requirements, and technical environment.

The solution provides partial functionality required by the new system. The solution is to extend the

What were lessons learned that could be leveraged regarding implementation? Consider factors such as requirements gathering, stakeholder management, business process reengineering, data migration, procurement approaches, technology implementation, and training.

Technology implementation; Interfaces development; Open Source Technologies and Frameworks.
We did Proofs of Concept (POC) for some of the new requirements.
I. This gave an idea as to how an existing Licensed Product (Tableau) within the Organization may be leveraged:
a) to provide Front-End functionality for Energy Division Users, and
b) to share data with the Public by embedding a Tableau Public Container on CPUC RPS Data Page/Data Hub

II. This gave an idea as to how to import GIS Shape-File data into PostgreSQL database and how to do data visualizations (used QGIS, PgAdmin, and Tableau)

III. Setup a Development environment for the IT staff to do development / Code Changes.

Is this a solution that could be further explored as an alternative? This indicates that the discovered system could feasibly be used for the business need and is earmarked for additional research.

Yes

Are there any potential solutions within the State of California that could be leveraged for this business need? Identify the factors that make the solution worth pursuing as an alternative or not. Existing state technologies may be more cost effective or faster to implement.

Yes

What agency or department has the solution?

California Energy Commission

Solution Name

RPS Online; Energy Statistics; GIS Open Data

What is the solution type? (Custom or Commercially Available)

Custom

How does this solution meet the business needs? This identifies the high level requirements needed by the organization and identifies how this option meets those requirements and alignment to the state entity's strategic plan. Consider the strategic business goals, needs, objectives, high level requirements, and technical environment.

Energy Commission has jurisdiction over Publicly Owned Utilities for the California State's RPS Program. CEC developed an RPS Online System, Public Data Search and Sharing, and GIS Open Data systems. CPUC may be able to leverage the know-how in building these systems or use some component reuse, if possible.

CPUC has an inter-agency agreement with CEC for Consultation and Data sharing subject to non-disclosure and confidentiality rules.

What were lessons learned that could be leveraged regarding implementation? Consider factors such as requirements gathering, stakeholder management, business process reengineering, data migration, procurement approaches, technology implementation, and training.

CEC's Solar DGStats example will help CPUC implement an RPS public data hub based on the same principles and technology framework.

CPUC has developed GIS analysis and data visualizations for Communications, Energy, Safety and Enforcement divisions. These solutions and a CPUC in-house GIS Lead will be able to provide implementation guidance to the team. CPUC Energy Division also has an inter-agency agreement with CEC which developed a similar solution using PostgreSQL database, PostGIS extension, ESRI/ArcGIS.

Is this a solution that could be further explored as an alternative? This indicates that the discovered system could feasibly be used for the business needs and is earmarked for additional research.

Yes

Are there any potential solutions within other states, the Federal government, or local entities that could be leveraged for this business need? Identify the factors that make the solution worth pursuing as an alternative or not. Existing state, federal or local technologies may be more cost effective or faster to implement.

No

Requirements/User Stories

Business Requirement Resources:

- General Requirements Guidelines (http://cdt.ca.gov/wp-content/uploads/2017/03/SIMM_170A_General_Requirements_Guidelines.pdf)
- Requirements Development Instructions (http://cdt.ca.gov/wp-content/uploads/2017/03/SIMM_170B_Project_Requirements_Development_Instructions.pdf)
- Requirements Template (TBA)
- User-Story Template (TBA)
- Business Requirement Example (http://cdt.ca.gov/wp-content/uploads/2017/03/SIMM_170A_Exhibit_A_Strong_Requirement_Samples.pdf)
- Requirements Development Workflow (http://cdt.ca.gov/wp-content/uploads/2017/03/SIMM_170B_Exhibit_D_Requirements_Development_Workflow.pdf)

NOTE: Organization specific templates and processes already in place may also be used as long as the documentation aligns to the guidelines. Additional business requirements development resources are available in SIMM section 170 (https://cdt.ca.gov/policy/simm/).

NOTE: At this stage Mid-level requirements are the preferred level of detail to be able to do comparisons between alternatives, however in preparation for solicitation of a solution or custom development, Mid-level requirements will need to be further detailed.

Tip: Use your technical discovery documentation to validate the nonfunctional requirements and to identify gaps.

Based on this research, please attach the requirements or user stories documentation.

RPS_ProcessFlow_Generation_File.pdf, RPS_ProcessFlow_Shape_File_Flow1_by_Project.pdf, RPSDB_8660-081_Annual_File_Updated_Jan_2019.xlsx, RPS_ProcessFlow_Transmission_File.pdf, RPS_ProcessFlow_Shape_File_Flow1a_Generic.pdf, RPS_ProcessFlow_Shape_File_Flow2_batch_process_v3.pdf, RPS_ProcessFlow_Shape_File_Flow3_manual_process.pdf, RPSDB_Functions_and_Architecture_old_and_new.pdf

Market Research Intro

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Market Research Intro

The intent of Market Research is to collect essential information to identify and analyze the market need, market size, and new and existing competition. Market research information enables the State to buy best-value products, services and solutions that solve mission-critical objectives.

Resources

- Market Research Guidelines (https://cdt.ca.gov/wp-content/uploads/2017/03/Market-Research-Guidelines.pdf)
- RFI Sample (Coming Soon)
- RFI Requirements Comparison Template (Coming Soon)
- RFI Template (Coming Soon)

TIP: The Request for Information (RFI) is a formal procurement vehicle used to survey the marketplace for potential solutions. This allows the state to ask potential vendors questions about capabilities and solution implementation including rough orders of magnitude of costs. Given the level of detail offered in this process, the RFI is strongly encouraged. Contact the CDT Statewide Technology Procurement group prior to releasing the RFI for consulting, samples, etc.

TIP: In the RFI process, you will need to include information about the needs of the business specifically in functionality. This may include requirements gathered that align to Agile methodologies such as the use of User Stories, Epics, or standard requirements. This is important to share with vendors in order to gain feedback and to further understand and define your needs before going out to purchase a solution.

TIP: Develop core criteria and use midlevel solution requirements or user stories to evaluate the results of your market research.

Market Research Summary

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Market Research Summary

Market Research Summary

Market research consisted of elaborating the requirements and mapping the individual requirement types to available solutions or standards. Researched Solution Alternatives among Product based and open source solutions. The research was conducted using Internet Search for a) checking product based solutions with Product Vendors Microsoft, Oracle, Tableau, and ESRI b) Open source products such as PostGIS geospatial extension, boundlessgeo, geonode, and QGIS; and c) Geospatial solutions implemented in the Federal or State Government agencies. Also, checked with other State agencies in California about their solutions and underlying technologies and efforts to build and maintain the solutions. For certain GIS items, reviewed CPUC implemented solutions and talked with CPUC GIS Lead in the Communications division who implemented a mapping/data visualization solution for Broadband Network data visualization. For certain complex requirements, initiated a rudimentary proof-of-concept to check the technology viability before arriving at a solution alternative.

Also, identified two vendors involved in implementing CEC systems:
1. Energy Solutions who is the Vendor for Solar Initiative system, who is also the RPS Vendor for CPUC;
2. Trinity Technology Group - who mentioned in another RFI Response that they implemented "Renewable Portfolio Standard (RPS) - for the CA Energy Commission". "... built an automated solution for utility companies to submit renewable energy metrics. Featuring GIS-based reporting capabilities, this application supports both internal users as well as external constituents via a self-service portal. This application has many of the same features related to review and reporting, and features a highly complex dataset."

Links for reference:
1. boundlessgeo.com
2. capuc.maps.arcgis.com
3. geonode.org
4. usgs.gov
5. qgis.org (docs.qgis.org)
6. gisgeography.com
7. https://storymaps.arcgis.com/en/
8. data.gov
9. data.ny.gov
10. fgdc.gov
11. osgeo.org
12. postgis.org
13. viewer.nationalmap.gov

14. openstreetmap.org
15. Google and bing maps; google earth pro
16. gislounge.com
17. https://www.californiadgstats.ca.gov/charts/
18. https://www.energy.ca.gov/maps/powerplants/power_plant_statewide.html
19. docs.oracle.com/cd/E14571_01/web.1111/e10145/vis_omaps.htm
20. https://powerbi.microsoft.com/en-us/
21. https://docs.microsoft.com/en-us/sql/relational-databases/spatial/spatial-data-sql-server?view=sql-server-2017

Please attach any completed market reseach documents (RFI, vendor survey, invitation to demo) and any supporting documentation/findings (RFI comparison, result analysis).

MarketResearch_Tools_and_Methods.xlsx, RPSDB_8660-081_Replacing_AccessFrontEnd_with_Tableau_POC.pdf, PostGIS — PostGIS Feature List.mht, RPSDB_8660-081_Market_Research_Alt_Solutions_Product_pricing.xlsx, RPSDB_8660-081_product_pricing_sources.txt, AWS_Services_Compliance_with_Security_Standards_20190408.xlsx, screenshot_Tableau_visualization_embedded_in_cpuc_public_website.docx, Sample_or_example_sites_Python_Django.xlsx, mv12c_technical_wp.pdf, SQL_Server_doc_for_comparison.PDF, Dynamics 365 Licensing Guide_Dec 2018.pdf, Oracle_us-public-sector-3904395.PDF, MarketResearch_support_information_about_PostgreSQL.docx, MassGIS_Use-Case-2016.pdf, boundless_GIS_Offerings.png, MITRES_STR_001IAP16_GISII.pdf

Updates Required?

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

After conducting the market research, now is a good time to make updates to the requirements or user stories (if needed). Making updates will improve the results of the upcoming procurement process in Stage 3.

All requirements or user stories must include the Who, the What, and the Why, and must be attached prior to Stage 2 Alternatives Analysis submission.

After conducting the market research, attach any updated requirements or user stories documents

RPSDB_8660-081_Project_WebPortal_UI Requirements.pdf, RPSDB_Glossary_of_Terms.xlsx, RPS_Database_System_Capability_Needs_v3.docx, RPSDB_8660_081_Description_of_User_Stories.pdf, RPSDB_8660-081_Requirements_and_Architectural_components.pdf, RPSDB_8660_081_Stage_2_Midlevel_Solution_Requirements_updated_20190501.xlsx, RPSDB_8660-081_GIS_UseCases.xlsx, RPSDB_8660-081_Security_controls_reference.xlsx

Alternatives Identification

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Alternatives Identification

Through the Discovery and Market Research activities, several alternatives will have been identified. An alternatives analysis will compare the alternative solutions based upon alignment with project requirements and business needs. This will result in a recommended alternative that best fits the business needs and objectives.

Alternative Information

Departmental Criteria #1

Solution Fit --- meets requirements, will find user acceptance (Users either already know the product/solution, or it is easier for them to learn / train on the product or solution).

Departmental Criteria #2

Total cost of ownership of the Solution:
a) one time costs (capital costs, implementation costs), and
b) operating costs

Departmental Criteria #3

Architecture and Technology Fit:
a) Satisfies architectural requirements from Data Security (subject to ISO approval for PostgreSQL based database server), System Security, Technology Recovery, Failover, Integration, Standards and State Policy points of view.
b) CPUC IT has not finalized the Enterprise-wide Technology roadmap. As such, the alignment to Roadmap is not conclusive.

Departmental Criteria #4

Extendibility - Maintainability & Operability in the future:
a) The platform or Technology is amenable to further customizations/changes.
b) CPUC IT may have staff familiar with the technology, code base, and ability to maintain the system in future.

1. What is the name of this alternative?

Open Source Technologies with limited # of COTS products.

1. What is the Type?

Custom Build

1. Solution Approach (COTS, SAAS, PAAS, etc)

COTS + customization for Energy division user interface. Custom solution for RPS Portal; Custom + Product based data publishing for RPS Public data hub.

1. Gap Analysis %
Note: Show percentage of requirements met by each potential bidder. (76% met, 87% met, etc.) e.g. Calculate number of requirements met (93) by total number of requirements (122) = 93/122= 76%.

50%

1. Add another Alternative

Checked

2. What is the name of this alternative?

Oracle Technology Platform/Solution Stack.

2. What is the Type?

Custom Build

2. Solution Approach (COTS, SAAS, PAAS, etc)

Combination of Custom and COTS for different components of the system.

2. Gap Analysis %
Note: Show percentage of requirements met by each potential bidder. (76% met, 87% met, etc.) e.g. Calculate number of requirements met (93) by total number of requirements (122) = 93/122= 76%.

22%

2. Add another Alternative

Checked

3. What is the name of this alternative?

Microsoft Technology Platform/solution Stack.

3. What is the Type?

Custom Build

3. Solution Approach (COTS, SAAS, PAAS, etc)

Combination of Custom and COTS for different components of the system.

3. Gap Analysis %
Note: Show percentage of requirements met by each potential bidder. (76% met, 87% met, etc.) e.g. Calculate number of requirements met (93) by total number of requirements (122) = 93/122= 76%.

22%

Attach the supporting documentation/findings

RPSDB_8660-081_Solution_Alternatives_for_HighLevelRequirements.xlsx, RPSDB_8660-081_B.2-Stage-2-Alternatives-Analysis_updated_20190116.pdf, RPSDB_S2AA_Requirements_to_solution_mapping_worksheet.xlsx, RPSDB_8660_081_Gap_to_Requirements.xlsx, RPSDB - Expansion_S2AA_methodology_updated.pdf, RPSDB_Solution_Scoring_based_on_weights.xlsx

Alternative Comparison

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Alternatives Comparison

Based on the discovery and the market research conducted, the following solutions were identified for further investigation.

Complete the matrix below with the top three identified alternatives. Alternative 1 should be the recommended alternative.

TIP: This section allows you to compare alternatives side-by-side.

Which to View/Enter Data for

Alternative 1 , Alternative 2 , Alternative 3

Which is your preferred alternative?

Alternative 1

Alt.1 Rough Order of Magnitude Cost - Is the estimated total cost of staffing and the solution.

1,138,897

Alt.2 Rough Order of Magnitude Cost

1,490,116

Alt.3 Rough Order of Magnitude Cost

1,479,654

Alt.1 Staffing: State - Identifies the types of classifications and number of staff necessary to implement the alternative.

Business: 2; IT-technical: 2 to 3; PM-1; PGM: PURA-2, PURA-4; IT: Speacialist-1, Specialist-II; Business and IT Managers/Supervisors;

Alt.2 Staffing: State

Business: 2; IT-technical: 2 to 3; PM-1; PGM: PURA-2, PURA-4; IT: Speacialist-1, Specialist-II; Business and IT Managers/Supervisors;

Alt.3 Staffing: State

Business: 2; IT-technical: 2 to 3; PM-1; PGM: PURA-2, PURA-4; IT: Speacialist-1, Specialist-II; Business and IT Managers/Supervisors;

Alt.1 Staffing: Vendor - Identifies the types of expertise and number of staff necessary to implement the alternative.

2 to 3 specialists (web development, GIS development, database development/integration); 1 Lead/PM;

Alt.2 Staffing: Vendor

2 to 3 specialists (web development, GIS development, database development/integration); 1 Lead/PM;

Alt.3 Staffing: Vendor

2 to 3 specialists (web development, GIS development, database development/integration); 1 Lead/PM;

Alt.1 Staffing: Contracts - Identifies staffing classifications and number of staff needed from ancillary source contracts such as staff augmentation, IV&V, etc.

IV&V - 1; IPOC - 1;

Alt.2 Staffing: Contracts

IV&V - 1; IPOC - 1;

Alt.3 Staffing: Contracts

IV&V - 1; IPOC - 1;

Alt.1 Solution Costs - Includes all costs related to the project, from planning through implementation.

1568659

Alt.2 Solution Costs

1925587

Alt.3 Solution Costs

1915125

Alt.1 Infrastructure Services

AWS Gov Cloud

Alt.2 Infrastructure Services

AWS Gov Cloud

Alt.3 Infrastructure Services

AWS Gov Cloud

Alt.1 Risk Level (High, Medium, Low)

Medium

Alt.2 Risk Level (High, Medium, Low)

Medium

Alt.3 Risk Level (High, Medium, Low)

Medium

Alt.1 Business Process Reengineering

Data analyses and data publishing uses different tools.

Alt.2 Business Process Reengineering

Data analyses and data publishing uses different tools.

Alt.3 Business Process Reengineering

Data analyses and data publishing uses different tools.

Alt.1 Organizational Change Management

User Training; Documentation and Demos; Staff Training and learning by Technical staff;

Alt.2 Organizational Change Management

User Training; Documentation and Demos; Staff Training and learning by Technical staff;

Alt.3 Organizational Change Management

User Training; Documentation and Demos; Staff Training and learning by Technical staff;

Alt.1 Interfaces

Require New. 1. Public Data Hub's data sources will be refreshed based on data in the datbase; 2. Energy division user interface will directly access the database using the Tableau or ArcGIS tools; Data warehouse will have the required data interface tables;

Alt.2 Interfaces

Require New. 1. Public Data Hub's data sources will be refreshed based on data in the datbase; 2. Energy division user interface will directly access the Oracle 12c database using the Tableau or ArcGIS tools; Data warehouse will have the required data interface tables;

Alt.3 Interfaces

Require New. 1. Public Data Hub's data sources will be refreshed based on data in the datbase; 2. Energy division user interface will directly access the SQL Server 2017 database using the Tableau or ArcGIS tools; Data warehouse will have the required data interface tables;

Alt.1 Conversion

Not Planned; All new data will enter the system from the defined interfaces (RPS Portal upload of files)

Alt.2 Conversion

Required; Existing data in PostgreSQL database will be moved to Oracle 12c database;

Alt.3 Conversion

Required; Existing data in PostgreSQL database will be moved to MS SQL Server 2017 database;

Alt.1 Security Risk

RPS Portal and database needs to ensure data security and session security as confidential data is submitted by the IOUs over the web and is stored in an AWS Gov Cloud database. Web users login to the portal using User ID and Password. A restriction of having the users login from their respective domains will improve security;

Alt.2 Security Risk

RPS Portal and database needs to ensure data security and session security as confidential data is submitted by the IOUs over the web and is stored in an AWS Gov Cloud database. Web users login to the portal using User ID and Password. A restriction of having the users login from their respective domains will improve security;

Alt.3 Security Risk

RPS Portal and database needs to ensure data security and session security as confidential data is submitted by the IOUs over the web and is stored in an AWS Gov Cloud database. Web users login to the portal using User ID and Password. A restriction of having the users login from their respective domains will improve security;

Alt.1 Legacy System Modification or Integration

Requires modifying/extending the existing system coupled with new applications development;

Alt.2 Legacy System Modification or Integration

Requires new applications development on Oracle technology stack based on the requirements; No integration is needed; But data conversion will be necessary;

Alt.3 Legacy System Modification or Integration

Requires new applications development on Oracle technology stack based on the requirements; No integration is needed; But data conversion will be necessary;

Alt.1 Enterprise Architecture Alignment

Currently CPUC systems are on multiple platforms -- Oracle Solution Stack/Platform, Microsoft Solution Stack/SQL Server Platform, and PostgreSQL/Python (or PHP) platform. Because RPS is already using PostgreSQL/Python/Django, the proposed RPS Expansion will be built onto the existing PostgreSQL, Python, Django, Amazon Gov cloud platform. (2. Enterprise Architecture – There is no Enterprise Architecture roadmap that is currently in place. However, CPUC Chief Enterprise Architect reviewed the current RPS system and the new requirements.)

Alt.2 Enterprise Architecture Alignment

Aligned with CPUC allowed platforms; Oracle Platform is currently used in CPUC; The other two allowed options are: Open Source technologies based on Python/PostgreSQL and Microsoft Product/technology stack;

Alt.3 Enterprise Architecture Alignment

Aligned with CPUC allowed platforms; SQL Server Platform is currently used in CPUC; The other two allowed options are: Open Source technologies based on Python/PostgreSQL and Oracle Product/technology stack;

Alt.1 Procurement Options

RFP/RFO for implementation vendor; RFO for IV&V Vendor;

Alt.2 Procurement Options

RFP/RFO for implementation vendor; RFO for IV&V Vendor;

Alt.3 Procurement Options

RFP/RFO for implementation vendor; RFO for IV&V Vendor;

Alt.1 Risks/Constraints

Budget, Timeline; Vendor team's expertise; CPUC team's adapting to the technology;

Alt.2 Risks/Constraints

Budget, Timeline; Vendor team's expertise; CPUC team's adapting to the technology;

Alt.3 Risks/Constraints

Budget, Timeline; Vendor team's expertise; CPUC team's adapting to the technology;

Alt. 1 Department Chosen Criteron: Identify how the departments chosen criterion would be met by the alternative on whether it would be met out of the box by the solution, would require customization, or could not be met by the alternative.

Will meet the requirements through a combination of Custom development; Product + Customizations; and Integration.

Alt.2 Department Chosen Criteria

Will meet the requirements through a combination of Custom development; Product + Customizations; and Integration.

Alt.3 Department Chosen Criteria

Will meet the requirements through a combination of Custom development; Product + Customizations; and Integrations.

Alt.1 Benefits/Advantages - An advantage may be that one alternative meets certain requirements better than another alternative, or may provide consistency with the Agency/state entity's overall strategy for information management.

Provides partial functionality; Proven Solution for certain components; Open Source Technologies and associated cost reduction;

Alt.2 Benefits/Advantages

Support guarantees for the technology stack/platform;

Alt.3 Benefits/Advantages

Support guarantees for the technology stack/platform;

Alt.1 Disadvantages - A disadvantage may include the need for significant technical staff support, or the security implications of implementation in multiple locations. List disadvantages that are not apparent from simply assessing cost and benefits.

Open Source technologies and associated support for upgrades;

Alt.2 Disadvantages

Increased initial cost due to re-write of existing functions; Data migration costs - albeit not very high due to the database's limited data volumes and # of objects;

Alt.3 Disadvantages

Increased initial cost due to re-write of existing functions; Data migration costs - albeit not very high due to the database's limited data volumes and # of objects;

Alt.1 Candidate for Proof of Concept - A Proof of Concept (POC) is a demonstration of the technology that validates the feasibility of an approach. Examples include testing the solution and processes in a field office before making it available to all offices, or building out one module before investing in the full solution.

Developing GIS visualization on RPS Portal with different underlying data layers; Exploration of ArcGIS solution for publishing interactive map on public data hub;

Alt.2 Candidate for Proof of Concept

Environment setup; Developing GIS visualization on a web site with different underlying data layers; Exploration of ArcGIS solution for publishing interactive map on public data hub; Using Oracle Analytics tool for RPS data analyses;

Alt.3 Candidate for Proof of Concept

Environment setup; Developing GIS visualization on File submissions Portal with different underlying data layers; Exploration of ArcGIS solution for publishing interactive map on public data hub; Using MS Power BI tool for data analyses and Publishing reports;

Alt.1 Recommended Alternative

Yes. Recommended;

Alt.2 Recommended Alternative

No. Not recommended;

Alt.3 Recommended Alternative

No. Not recommended;

Alt.1 Executive Summary of Analysis Results/Justification of Selection - Provide a brief narrative explaining why this alternative (1, 2 or 3) is chosen as the best value solution.

1. Aligns with the Current System Architecture; 2.Aligns with Energy Division Technology Platforms; 3. Proven Solution for the RPS Portal and data analyses components; Leverages existing System functionality and builds on it; (Please refer to Functions_old_and_new.pdf under the Tab "Exploring of Existing Options". 4. Less operating costs; Less initial costs; Less end-user training costs;

Alt.2 Executive Summary of Analysis Results/Justification of Selection

N/A.

Alt.3 Executive Summary of Analysis Results/Justification of Selection

N/A.

Recommended Alternative Information

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Recommended Alternative Information

Based upon the alternative analysis (and proof of concept if applicable). Identify the recommended alternative.

Alternative 1 - Extend the existing RPS system is the recommended alternative.
The alternative 1 consists of the following elements in the solution:
- Install PostGIS extension and modify the current database schema to accommodate new requirements;
- Enhance the existing RPS Portal to provide additional functionality and geo spatial data visualization over the web;
- Create a new site for RPS Public Data hub or Integrate with CPUC website http://cpuc.ca.gov/rps;
- Use Tableau Public and embed the Tableau container in the RPS Public data page;

- Replace MS Access Front-end with a better analytical tool (Considering Tableau for this alternative, but open to other options and additions -- MS Power BI Tools, ArcGIS, Oracle Advanced Analytics).

Why is this the best alternative for the needs of this project proposal?

1. Satisfies the requirements
2. Reuses existing system functionality and extends it
3. Majority of the solution is based on open Source technologies and has less annual operating costs
4. Provides continuity to the current system
5. Contingency is incorporated into the Staffing plan
6. The business division uses certain components of the technology for other systems
7. Another Agency has a similar system and uses some of the chosen technologies (e.g. PostgreSQL and PostGIS Database Server and extension)

Assumptions and Constraints

Assumptions:
1. CPUC IT Staff will be trained to be part of the implementation team and to do specific design, development and testing tasks that are assigned to them and in the process learn the designs, development, and testing processes and specifics.
2. Vendor will have experienced staff to modify the existing RPS database and RPS portal and to incorporate the GIS component per the requirements; to build the solution for Energy Division User Interface using the chosen Product (e.g. Tableau or mapping software); and to build the public data hub/website;
3. Energy Division will own testing responsibility for the System (User Acceptance Testing)
4. CPUC IT staff will be part of the development team and the specific deliverables for the Vendor will demark which work will be done by the Vendor and which work will be done by the CPUC IT Staff. The main purpose of embedding the CPUC IT Team is to give them exposure to the design, development, and testing activities covering design and code reviews, do certain development work, own System Testing, and gain knowledge of the system, the code, and other artifacts which will enable them to maintain the System in future.
5. Vendor will do unit testing and provide support for System Testing and User Acceptance Testing.
6. Vendor will be responsible to deliver error-free system that satisfies all the functional and non-functional requirements
7. There will be Vendor hosted knowledge transfer sessions to CPUC Teams on reaching milestones.
8. Contingency Plan if CPUC IT Staff are not ready: The Contract will have provision for the Vendor resources to stay on for the M&O of the system post implementation via the Mandatory-optional clause in the SOW.

Constraints:
1. Timeline -- must deliver the solution during the first half of year 2020 so as to track year 2020 goals
2. Budget -- Currently, the external costs are borne by a special fund under code 0642 and it has an annual limit for year 2019/2020, and for year 2020/2021;

Implementation Methodology

Enhance the existing IT system , Develop a new IT system , Purchase a Commercial Off-the-Shelf (COTS) , Other

Specify

AWS Government Cloud for Infrastructure as a Service.
AWS Security Groups act as Virtual firewalls.
A security/Vulnerability scan will identify security alerts which will be addressed prior to Production rollout of the System.
1. RPS Portal - enhance the current RPS system
2. RPS Internal User Interface - MOTS solution using Data analysis and Visualization Product(s)
3. RPS Public Data Hub - Integration with a Published Report on a hosted service. (e.g. Tableau Public, or ArcGIS online) + Query and data download capability of RPS public data.

The solution identified is subject to change during S3SD stage based on new discoveries or available solutions at that time.

What approach will be taken for this proposal? (check all that apply)

Modify the existing business process or create a new business process

Cloud Services

Refer to SAM Section 4983 (http://www.documents.dgs.ca.gov/sam/SamPrint/new/sam_master/sam_master_File/chap4900/4983.pdf), which states in part, "...Agencies/state entities must evaluate Cloud Computing as an alternative for all reportable and non-reportable IT projects. Whenever feasible, Agencies/state entities must utilize cloud services provided by the Office of Technology Services (OTech). If required services are not available through OTech, Agencies/state entities must utilize other commercially available Software as a Service (SaaS), Platform as a Service (PaaS), or Infrastructure as a Service (IaaS) cloud service models when feasible and cost effective..."

Identify cloud services to be leveraged (check all that apply)

Infrastructure as a Service (Iaas) provided by commercial vendor

Roadmap Updates

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Please confirm and reenter the approved project dates from Stage 1. If you need to review or make edits to any Stage 1 section, you can access the form by clicking here (https://cdt.preprod.simpligov.com/preprod/Portal/WorkflowDashboard) and searching your records.

Planning Start Date

05/01/2018

Planning End Date

07/30/2019

Project Start Date

08/01/2019

Project End Date

04/30/2020

Attach a project schedule that include planning and project activites for recommended alternative

RPSDB_8660-081_Project_Timelines_Updated.pdf, RPSDB_8660-081_HighLevel_Project_Plan_MPP_updated_per_changed_timelines.mpp

Briefly describe the data management strategy for the preferred solution.

Data is managed in a Relational + Spatial database; and a File System that keeps raw Excel Files submitted by the users; Database uses the Relational Data Service (RDS) of Amazon Web Services in Gov-Cloud. Architecture has Database replication and standby availability;

Data to the interfaces will be provided in specific data interface tables and views;

Database is planned to keep 20 years of data. No archival is planned;
Availability is based on multi-availability-zone solution for the Infrastructure;
No separate Disaster recovery other than that is provided by Amazon Web Services;

What is the High Level Project Schedule:

Project Phase	Planned Start Date	Planned End Date	Phase Deliverable(s)
Review and finalize Requirements	8/1/2019	8/15/2019	SOW Amendments;
Setup Dev Environment	7/31/2019	8/23/2019	Usable Dev Environment for IT Staff and Vendor Staff;
Detailed Solution Designs	8/1/2019	9/18/2019	UI Screens + Logic; Db Schema; Program specifications;
Develop & Unit Test:	9/1/2019	1/31/2019	Schema + Code + Technical Documents;
a) RPS Portal	9/1/2019	12/5/2019	Working RPS Portal for system Test
b) RPS Data analyses App	11/1/2019	12/5/2019	Connectivity; Demos; System generated Reports;
c) RPS Public Data Hub	12/1/2019	1/31/2019	Design, Development documentation; Operations documentation;

System Testing (Planning, Execution, Resolution)	12/6/2019	2/14/2020	Test Plan; Test Results; Issue Log; Solutions Log; Change Requests Log;
UAT & Training	12/27/2019	4/2/2020	UAT Planning; User Training; Test Data Plan; Test Plan and Results; Issue Log; Solution Log; Change Requests Log;
Deploy in Production (Planning, preparation & rollout)	3/20/2020	4/15/2020	Release Management Notes; System Set up; Database Backup;Initial Production system backup;
Provide initial support	4/6/2020	4/17/2020	Support Plan, Schedule; Operating and Support instructions; Issue Log; Diagnosis and solutions;
Transition to M&O	4/6/2020	5/30/2020	M&O Readiness checklist; Staff training checklist; Technical documents for troubleshooting; Schedules and Operations guide including escalations, SLAs; Roles & Responsibilities;
PIER - 1 feedback	10/1/2020	12/20/2020	Survey and Repsonses from Users; Survey & Responses from IT staff; Survey & Responses from Management; Issue Log analyses;
PIER - II feedback	2/1/2021	3/31/2021	Survey and Repsonses from Users; Survey & Responses from IT staff; Survey & Responses from Management; Issue Log Analyses;
Publish PIER for Approvals	6/29/2021	7/3/2021	PIER; Lessons Learned;
Submit PIER	7/6/2021	7/6/2021	Management Approvals; Final Transmittal to LAO and CDT;
IV&V Reports (during the Project)	8/23/2019	6/4/2020	

IPOC Monthly Reports (during the Project)	8/23/2019	6/4/2020	
CPUC IT Staff Readiness /Training	4/1/2019	8/31/2019	Proof of Concepts; External Skills Training in Django Framework and Python web programming; Vendor hosted Knowledge Transfer/Project Team orientation Sessions prior to development Start Date.

Implementation Methodology

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Implementation Methodology

Implementation Narrative Items to Cover:

- How will the work of the project be organized?
- How will change management decisions be made?

Resources:

- SIMM 17 Project Management Framework (http://capmf.cio.ca.gov/)

NOTE: This narrative needs align to the attached project management plans.

Provide Implementation Narrative

The RPS DB Expansion (#8660-081) implementation will consist of:
a) extending the current RPS database and RPS portal to provide new functionalities (Allow submission of additional data submission files, Allow new users from various Retail Sellers (that include CCAs and ESPs), provide Geospatial data management and data visualization);
b) replacing the current RPS Interface for Energy division users with a more robust interface that allows further analyses, reporting, and Spatial data visualization; and
c) providing an enhanced public RPS data page that serves as a data hub for data downloads and interactive data visualization. Also, create data interface tables to provide input for Energy Division data warehouse.

The components of the system are listed below:
1. RPS Portal (new capabilities, GIS data validation and data visualization)

2. RPS Database (includes spatial extension -- PostGIS)

3. RPS Energy division front-end (new capabilities, new data coverage, includes GIS and reporting capabilities)

4. RPS Public data hub (includes published interactive GIS data visualization) and data file downloads

5. Create data interface tables to provide input to CPUC Energy division's data warehouse.

CPUC IT team will work with the Vendor IT team during design and development, with defined deliverables for the Implementation Vendor, and subsequently participate in System Testing. At the end of the System deployment, CPUC IT team is expected to have the skills to maintain the System. As a contingency, the proposal has Vendor provided M&O Services for Year 1 (FY 2020/21) and for Year 2 (FY 2021/22) as Mandatory Optional meaning if CPUC chooses the Vendor must provide the M&O Services.

CPUC Business Team will perform UAT and CPUC IT and the Vendor will provide support by addressing issues raised and refreshing the environment for Test Cycles to take place.

What is the project management methodology being considered for the preferred alternative?

Waterfall

Why was this project management methodology chosen?

The main component of the project (RPS portal extension) does not need iterative development. So, Agile methodology is not planned. However, the Project timeframes will allow flexibility for the Energy Division users to approve the final screen designs for the RPS Portal. Once the detailed designs are approved and the Project moves to development phase, Change Request process will be implemented for making changes to the approved designs.

Implementation schedules for RPS Energy Division front-end and RPS Public data hub will incorporate detailed design work before development commences. While the team is working on the detailed designs there will be scope for iterations.

Additional Information Regarding Agile and Hybrid Approaches

Please address the findings from the Agile Readiness self assessment.

- Identify how the department intends to modify the work environment in order to support Agile or Hybrid approach
- Identify staff preparation strategies or experience

Professional Services and Acquisition Approach

: Renewable Portfolio Standard Database (RPSD) Expansion

Part of the preparation for procuring the solution is understanding the approach to be used. This section identifies how the procurement will be organized.

What are the professional services anticipated for this project? (i.e., system design, development, maintenance, training, etc.)

Procurement Approach Matrix

	Primary / Implementation Vendor	Individual / Support Vendor	State Staff	Within Purchasing Authority	Cost	Number of Staff	Number of Vendor Staff	Before Stage 4 Approval	After Stage 4 Approval	Procurement Vehicle	Contract Type
Solicitation Development											
Business Analysis											
Conduct Procurement											
Contract Management											
Cost Estimating											
Data Cleansing											
Data Conversion											

Data Migration		
Data Validation		
Design	Yes - implementation vendor	
Enterprise Architecture		
Independent Verification and Validation (IV&V)		Yes - IV&V
Integration/Development	Yes - implementation vendor	
Maintenance	Provision for Mandatory Optional M&O by the Vendor	
Operations		
Organizational Change Management		
Other		

Project Management	Implementation Vendor will have a PM to support their Staff	
Project Oversight		Yes - CDT
Quality Assurance	Yes - implementation vendor	
Requirements Elicitation		
Technical Analysis		
Technical Installation of Hardware		
Technical Installation of Software		
Testing		
Training		

Project Management and Organizational Readiness

: Renewable Portfolio Standard Database (RPSD) Expansion

Project Artifacts

For additional information and resources to assist in development appropriate plans for the project, refer to SIMM 17 Project Management Framework (http://capmf.cio.ca.gov/)

Indicate the status of the following project management plans or project artifacts.

Project Charter

Yes

Upload

RPSDB_Expansion_Project_Charter_Approvals_8660-081.pdf, RPSDB_Expansion_Project_Charter_8660-081.pdf, Amendment_RPSDB_Expansion_ProjectCharter_8660-081_20190111.pdf, Amendment_RPSDB_Expansion_ProjectCharter_8660-081_20190111_20190314.doc

Status

Final/Approved

Project Organization Chart

Yes

Upload

RPSDB_8660-081_ORG_CHART_updated_20190511.pdf

Project Management Plans

Project Management Plan

Yes

Upload

RPSDB_8660-081_Project_Management_Plan.pdf

Status

Draft

Scope Management Plan

Yes

Upload

RPSDB_8660-081_Scope_Management_Plan.pdf

Status

Draft

Communication Management

Yes

Upload

RPSDB_8660-081_Communication_Management_Plan.pdf

Status

Draft

Stakeholder Management

Yes

Upload

RPSDB_8660-081_Stakeholder_Management_Plan.docx

Status

Draft

Risk Management

Yes

Upload

RPSDB_8660-081_Risk_Management_Plan.pdf

Status

Draft

Schedule Management

Yes

Upload

Status

Change Management

Status

Cost Management

Status

Procurement Management Plans

Procurement Management Plan

Status

Contract Management Plan

Status

Additional Plans/Documents

Governance Management

Upload

Project Governance Process Diagram

Status

Human Resources Management

Status

Upload

Testing Management

Status

Status

Release Management

Status

Please review the information provided in the S1BA. If you need to review or make edits to any Stage 1 section, you can access the form by clicking here (https://cdt.preprod.simpligov.com/preprod/Portal/WorkflowDashboard) and searching your records.

Enterprise Considerations

Do any other reportable departmental projects have outstanding or past due project approval conditions?

No

Data Conversion/Migration

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Data Conversion Migration

What is the Data Management Strategy?

Data is managed in a central database that is used by all the application components - RPS Portal for Customers/Retail Sellers; RPS Data Analytics/Reporting Software (e.g. Tableau) to be used by Energy Division users; RPS Data warehouse Interface that extracts data from RPS database; and RPS Public Data Hub.

Energy division's RPS analyst will publish a Tableau workbook with public / non-confidential data and embeds it into the Public RPS Web page so public can view the data in an interactive data visualization container. This process will eventually automated so Energy division analyst doesn't have to publish the report each month.

Energy division also publishes reports using data analytics/reporting tool and the backend PostgreSQL Database as the data source. These reports will reside outside the framework of the system and on the Energy Division Analyst's desktop. Currently, there is no plan to create a Report Server that serves reports to authenticated users. However, all the reports sent to the Legislature will be archived in Content Server in Energy Division's RPS Folder for audit purposes.

Upload the Data Management Strategy document

RPSDB_8660-081_DataManagementStrategy_revised.pdf

Agencies/state entities can mitigate most of the known risks associated with data conversion/migration by proactively taking necessary steps to establish a clear understanding of the current environment, data architecture, and quality of the legacy data, and plan accordingly to get the data ready for conversion/migration before the data conversion/migration process begins.

Select the data conversion/migration activity status for each of the following:

Data Conversion/Migration Planning

Data Conversion/Migration Requirements

Current Environment Analysis

Data Profiling

Data Quality Assessment

Data Quality Business Rules

Data Dictionaries

Data Cleansing and Correction

Risk Assessment

: Renewable Portfolio Standard Database (RPSD) Expansion

Based on the recommended alternative and project implementation approach, please provide the initial project risk assessment. This includes updating the Business Complexity Assessment as needed, completing the Technical Complexity Assessment and the Project Management Risk Assessment, and providing the current Risk Registry. For additional information regarding project risk management, refer to SIMM 17 Project Management Framework (http://capmf.cio.ca.gov/).

Follow the links to download the templates.

PM Risk Assessment Template SIMM 45-A (https://cdt.ca.gov/wp-content/uploads/2017/02/SIMM_45_Appendix_A_2016_0506.xlsx)
PM Risk Assessment Preparation Instructions (http://cdt.ca.gov/wp-content/uploads/2017/02/SIMM_45_Appendix_B_2016_0506.pdf)
Complexity Assessment SIMM 45-C (http://cdt.ca.gov/wp-content/uploads/2017/02/SIMM_45_Appendix_C_2016_0506.xls)
Complexity Assessment Instructions (http://cdt.ca.gov/wp-content/uploads/2017/03/SIMM_45_Appendix_D_2016_0506.pdf)
Risk Registry Template (https://cdt.preprod.simpligov.com/prod/portal/file/fb91516471b5457ab0f4bd34c55a202f.xlsx?t=1516404593413)

NOTE: The usage of SIMM 44 A and C are mandatory. If the organization has an existing risk registry template, that may be used instead.

Enter the Project Management Risk Score

Enter the Technical Complexity Assessment Score:

Enter the Complexity Zone as computed by the Complexity Assessment tool:

Upload Completed PM Risk Assessment

Status

Upload Current Risk Registry

Status

Upload the Business and Technical Complexity Assessment Results

Recommended Alternative

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Architecture and Security Information

For each Business Function/Process, provide this information:

Business Function/Process:

RPS File Submissions Portal/website

Application, System or Component:

RPS Database and RPS Web Portal

Name of Primary Technology:

Open Source Technologies (PostgreSQL/PostGIS, Django, Python, Nginx, uWSGI); Geospatial component (COTS or SAAS)

Runtime environment:

As defined in the Architecture diagram

Server/Device Function:

Database Server; Web Server; Application Server;

Hardware:

AWS Gov Cloud provided EC2 and RDS Servers

Operating System:

Amazon Linux

System Software:

Docker; PostgreSQL;

System Interfaces:

Energy Division Data warehouse; GIS Visualization Plugin/Interface; Energy Division Data analysis S/w Tool/Product; Public Data Hub;

Data Center Location

Commercial data center

Security

check all that apply

Security Access (check all that apply)

Internal State Staff , Other

If Other, Please Specify:

Retail Sellers of Electricity.

Type of Information (check all that apply)

Confidential , Other

If Other, Please Specify:

RPS public data that can be shared with public.

Protective Measures (check all that apply)

Identity Authorization and Authentication , Physical Security , Backup and Recovery

Data Owner

Name

Cheryl Lee

Title

Program Manager

Business Program

RPS Program in Energy Division @ CPUC

Data Custodian

Name

Harsharan Kaeley

Title

Production Systems M&O Manager

Business Program

CPUC IT

Architecture Information

Existing Capabilities:

Database Server (PostgreSQL running on an AWS RDS server);
Database replication and multiple availability Zones;
Web Server (uWSGI running on an Amazon Linux system in a Docker container; Nginx reverse proxy); App Server (uWSGI, Docker container, Django Framework, Python);
App Server Failover; App Server Scaling;
MS Access; MS Excel;

New Capabilities

GIS Database extension; GIS Data visualization;
Robust data analytics tool compared to MS Access and Excel (e.g. Tableau, ArcGIS);
Tool for data publishing on a web site including Interactive geospatial maps;
Map Services or Maps Integration Layer.

Cost Summary

Project Name: Renewable Portfolio Standard Database (RPSD) Expansion

Cost Summary

In what fiscal year will the project be completed?

FY2019/20, FY2020/21

Start Date

End Date

Funding Summary

What are the high-level Costs?

Planning ($)

Project ($)

M&O ($)

Total ($)

What are the funding sources?

Funding Source 1

Fund 1

New ($)

Funding Source 2

Fund 2

Redirected ($)

Funding Source 3

Total Redirected ($)

Total New ($)

Financial Analysis Worksheets

Resources:

FAW Template SIMM19-F
(https://cdt.preprod.simpligov.com/prod/portal/file/7fc5aff128dc47b1b0fe9e690758d6c3.xlsx?t=1516397229877)

Please attach the completed FAW

Procurement Readiness

: Renewable Portfolio Standard Database (RPSD) Expansion

Procurement Readiness

Stage 3 Solution Development will require business program knowledge, technical knowledge, and procurement knowledge to effectively develop requirements, evaluation criteria, and contract deliverables.

Describe the capacity, skill, and knowledge of the Agency/state entity's procurement program and resources that will support the procurement effort (solicitation development, bidding, evaluation, contract award, etc.).

This narrative should adequately describe the skills and experience of these resources that will be assigned to support procurement activities.

The narrative should also address the following:

- Does the Agency/state entity's governance framework include procurement related decision-making in addition to project decision-making?
- Does the Agency/state entity's procurement office have experience using the proposed procurement methodologies identified specifically in your Procurement Plan and Human Resources Management Plan related to Procurement and Staffing Strategy?
- Does the Agency/state entity's procurement office have experience using the STP Streamlined Template?
- Is the Agency/state entity's procurement office familiar with protest types or use of Public Contract Code (PCC) 6611?

Template: SIMM 71 (http://https//cdt.ca.gov/wp-content/uploads/2018/04/SIMM-71A-Rev-April2018.pdf) IT Policies Compliance Certification

Write Narrative Here

Implementation Vendor:
Procurement process will consist of developing a solicitation utilizing the ITMSA.

IV/V Vendor:
Procurement process will consist of developing a solicitation utilizing the CMAS.

Does the project team have experience procuring the type of solution recommended for this proposal?

Yes

Is your procurement team prepared and sufficiently staffed to fulfill their respective procurement activities as defined in the CDT Statewide Technology Procurement's Roles and Responsibilities document?

Yes

Has the Agency/state entity received signed confidentiality and conflict of interest statements from all project participants (internal and external)?

No

Has the Agency/state entity completed and received approval of the SIMM Section 71 Certification of Compliance with IT Policies?

Executive Transmittal

: Renewable Portfolio Standard Database (RPSD) Expansion

Project Approval Executive Transmittal

The CDT offers two ways to seek executive approval for the completion of the Stage workflow.

Option 1. The agency can choose to use the PLAN-IT routing workflow that allows the organization to route and gain approval electronically.

Option 2. The agency can manually route the Statewide Information Management Manual Section 19.G.1 Project Approval Executive Transmittal. Located at: SIMM 19G.1 Project Approval Exectuive Transmittal Template (https://cdt.ca.gov/wp-content/uploads/2017/02/SIMM_19G1-Project_Approval_Exectuive_Transmittal_Template.docx)

Which Approval Process would you like to use?

Project Name

State Entity Name

Department of Technology Project Number

I am submitting the attached project approval deliverable as required by State Administrative Manual (SAM) Section 4920-4928.

I certify:

The Project Approval deliverable was prepared in accordance with Statewide Information Management

Manual (SIMM) Section 19.
The proposed information technology (IT) initiative is approved and represents our IT priorities.
The proposed IT initiative is consistent with our IT strategy as expressed in our current Agency Information Management Strategy.

I have reviewed and agree with the information in the attached project approval deliverable.

I certify the acquisition of the applicable IT product(s) or service(s) required by our Agency/State entity that are
subject to Government Code 11135 applying Section 508 of the Rehabilitation Act of 1973 as amended meets
the requirements or qualifies for one or more exceptions.

Administration

Administration

Submission Date

PAL Manager Assignment Date

PAL Manager Assigned

PAL Manager Assigned Until Date

PAL Manager Assigned

PAL Manager Assigned Until Date

Current Status

Current Status Date

Conditions

Condition 1

Condition 1 Stage

Condition 1 Status

Condition 1 Status Date

04/03/2019

Add Another Condition

Not Checked

Critical Partners

Statewide Technology Procurement Consultant Name 1

david.sanchez@state.ca.gov

Statewide Technology Procurement Consultant Email 1

sandra.morales@state.ca.gov

Add Another

Checked

Statewide Technology Procurement Consultant Name 2

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Statewide Technology Procurement Consultant Email 2

Add Another

Not Checked

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