Demand Scenarios Project Technical Support

California Energy Commission
Request for Proposals- RFP-22-803
Pre-Bid Conference

Date: January 12, 2023

Agenda

- Welcome and Introductions
- Demand Scenarios Project RFP Overview
- Questions and Answers

Purpose of RFP

- Provide technical support to the Energy Assessments Division
  - The purpose of this Request for Proposals is to select a contractor team with experience and expertise in market research and analytic methods that can provide technical assistance to the Energy Assessment Division to refine the initial demand scenarios modeling capability and to support development of multiple demand scenario projections.
  - https://www.energy.ca.gov/programs-and-topics/topics/energy-assessment

Background

- CEC Staff initiated a demand scenarios development capability in 2021-22
- Basic approach in initial modeling out to year 2050
  - All Sectors, all fuels - economy wide model of California
  - Replace fuel type/economic sector internal logic with results from CEC staff modeling tools where they exist
  - Maintain balance of fuel type/economic sectors from original model to preserve all fuels/all sectors coverage (Remaining from PATHWAYS Model)
- Generate comprehensive all fuels, all sectors energy demand projections and appropriate translation of energy demand to GHG emission projections
- For electric demand, generate electric planning area hourly loads

RFP Tasks

- Task 1: Agreement Management
- Task 2: Demand Scenarios Model Development & Prepare Reference Scenario Projections
- Task 3: Establish and Assess Scenarios and Sensitivities & Develop Projections
- Task 4: Develop Cost Projections
- Task 5: Develop Model for Aviation Sub-sector

Task 1: Agreement Management

- Kick-off Meeting
- Prepare and Submit Invoices Monthly
  - Shall comply with the Exhibit B of the Terms and Conditions
- Develop Work Authorization Task Descriptions and Due Dates
- Manage Subcontractors.
- Prepare and Submit Progress Reports Monthly

Task 2: Demand Scenarios Model Development

- Support development of framework for all the Scenarios.
- Modify existing model OR develop an entirely new model
  - To project annual energy consumption, and annual GHG emissions, and hourly electric load
- Sectors and Fuels not encompassed by CEC modeling tools:
  - Residential & Commercial – Fuels other than electricity and natural gas
  - Transportation – No known requirements
  - Industrial – Fuels other than electricity and natural gas
  - Agriculture – Fuels other than electricity and natural gas
  - Oil & Gas Extraction – All fuels
  - Petroleum Refining – Fuels other than electricity and natural gas

Task 3: Establish &Assess Scenarios & Sensitivities

- Develop Scenario input characteristics per policy of the state to electrify all sectors and end-uses to the extent feasible, so all scenarios share the “high electrification” theme.
- Sensitivities around the main scenarios will also be assessed:
  - Segments of various sectors shift from natural gas to cleaner fuels such as renewable gas or hydrogen.
  - What extent expanded DER technologies and flexible load, reliant upon end-user behavior changes, can replace supply-side generation
- Characterize carbon, capture and sequestration, direct air capture technologies and propose penetration thru time for each scenario.

Proposed Scenario Types

- **Reference Scenario by IEPR Vintage**
  - This scenario uses the same core assumptions as the CEC adopted, managed Mid-Mid demand forecast through **2035.**
  - Beyond 2035, this scenario assumes continuation of the same set of standards, programs, and policies reflected in the CEC adopted managed demand forecast with the same degree of compliance.
- **Policy-Compliance Scenario**
  - The degrees of compliance with the same set of standards, programs, and policies are varied.
- **Enhanced Programmatic Scenario (Additional Policies, Not Goal Constrained)**
  - Adds additional standards, programs, policies and not yet approved assumptions beyond those already included in the Policy/Compliance Scenario.
  - Reflects incremental impacts of programs relative to the previous scenarios.

Task 3: Establish and Assess Demand Scenarios and Sensitivities (Continued)

S No.	Demand Scenarios	Demand Scenario/Sensitivity
1	Reference Scenario	Reference Scenario
2	Policy - Compliance Scenario	High Electrification (HE)
3	Policy – Compliance (Sensitivity)	HE augmented by Biofuels
4	Policy – Compliance (Sensitivity)	HE augmented by Hydrogen
5	Policy – Compliance (Sensitivity)	HE augmented by DER
6	Policy – Compliance (Sensitivity)	HE augmented by Electric Demand/Load Flexibility
7	Enhanced Programmatic Scenario	High Electrification (HE)
8	Enhanced Programmatic (Sensitivity)	HE augmented by Biofuels
9	Enhanced Programmatic (Sensitivity)	HE augmented by Hydrogen
10	Enhanced Programmatic (Sensitivity)	HE augmented by DER
11	Enhanced Programmatic (Sensitivity)	HE augmented by Electric Demand/Load Flexibility
12	2022 CARB Scoping Plan Scenario	TBD
13	2023 CPUC Integrated Resource Plan Scenario	TBD

Task 3: Establish and Assess Demand Scenarios & Sensitivities (Continued)

- Project annual energy consumption for all fuel types, and annual GHG emissions, from 2022-2050 for each scenario, sector, and planning area combinations.
- Starting from annual electricity consumption, project hourly electric load from 2022-2050 for each scenario, sector and planning area combinations.

Task 4: Cost Projections

- Work with CEC staff to refine/augment cost projections for fuels/sectors with inputs coming from CEC staff modeling tools
- Develop new estimates of the costs to end-users of the technologies, along with program delivery costs, embodied in the projections for each scenario
- Integrate all sources of costs and create scenario-specific results using accepted metrics ($/MMBtu, $/MMTCO2e)

Task 5: Develop Model For Aviation Sub-Sector

- Improve existing Passenger/Freight Aviation Fuel Demand Model integrating technologies, regulations, and flexibility to incorporate additional state goals.
  - Literature review of various aviation fuel technologies, including but not limited to sustainable aviation fuel (SAF), low carbon impact combustion fuels, battery-electric aviation technologies, hydrogen fuel cell aviation technologies, and hydrogen combustion technologies.
  - This Aviation fuel demand model will translate external inputs of Aviation travel demand into projected demand for individual fuels.

Eligible Bidders

- Bidders must meet all solicitation requirements.
- Private entities and public sector entities that meet the solicitation requirements.
  - Private sector entities must agree to the Energy Commission's standard terms and conditions.
  - The University of California, California State University or U.S. Department of Energy National Laboratories must use either the standard or the pre-negotiated terms and conditions.
  - Public entities may participate as subcontractors if they cannot meet requirements or agree to the terms.
- All corporations, limited liability companies (LLCs), limited partnerships (LPs) and limited liability partnerships (LLPs) that conduct intrastate business in California are required to be registered and in good standing with the California Secretary of State prior to its project being recommended for approval at an Energy Commission Business Meeting.

Proposal Requirements

- Prime contractor will be responsible for submitting the proposal.
  - Consists of Two Sections
    - Section 1 – Administrative Response
    - Section 2 – Technical and Cost Evaluation of Proposal

Section 1: Administrative Response

- Cover Letter
- Table of Contents
- Contractor Status Form
- Darfur Contracting Act Form
- Disabled Veteran Business Enterprise form
- Bidder Declaration form GSPD-05-105
- Contractor Certification Clauses
- Contractor References
- CA Civil Rights Laws Certification

Section 2: Technical Proposal

- Approach to Tasks in Scope of Work
- Organizational Structure
- Relevant Experience and Qualifications
- Labor Hours by Personnel and Task
- Client References
- Previous Work Products
- Budget Forms

Section 2: Cost Proposal

Every Proposer must complete and include the budget forms found in Attachment 7 of the solicitation.

- Category Budget
- Direct Labor
- Fringe Benefits
- Travel
- Equipment
- Materials & Miscellaneous
- Subcontracts
- Indirect Costs and Profit

Evaluation Criteria

- The Maximum Points Available under this RFP are 100
- Minimum Passing Score is 70 (70%)

Scoring

Technical	Possible Points
Bidder's Technical Approach	20
Team Qualifications, Capabilities, and Resources	10
Previous Work Products	10
Team Qualifications: Technical Support for Demand Scenarios Modeling	30
Total	**70**
Cost	**Possible Points**
Total Expected Labor Costs	30
Total	**30**

Disabled Veteran Business Enterprise (DVBE) Requirements

This RFP is subject to a mandatory certified DVBE participation of at least three percent (3%).

Small Business / Microbusiness / Non-Small Business

- Small Business Preference – Certified Small Businesses or microbusinesses can claim the 5% preference when submitting a proposal.

- Non-Small Business Preference – Bidder commits to small or micro business subcontractor participation of 25% of the net bid price.

How To Submit The Proposals

Method of submission is the Energy Commission Grant Solicitation System, available at: https://gss.energy.ca.gov/

- First-time users must register as a new user to access the system.
- Electronic files must be in Microsoft Word and Excel Office Suite formats unless originally provided in the solicitation in another format. Attachments requiring signatures may be scanned and submitted in PDF format. Completed Budget Forms, Attachment 7, must be in Excel format. **The system will not allow applications to be submitted after the application due date and time.**
- Application documents should meet formatting requirements, and the page limits specified. See individual requirements for each attachment in Section III of the solicitation manual.

Tentative Key Activities and Dates

Deadline for Written Questions:	January 13, 2023
Distribute Questions/Answers and Addenda (if any) to RFP-22-803:	January 20, 2023
Deadline to Submit Proposals by:	**5:00 p.m. February 3, 2023**
Notice of Proposed Award:	February 24, 2023
Anticipated Commission Business Meeting	April 12, 2023
Anticipated Contract Start Date	May 2023
Anticipated Contract Termination Date	March 2025

Questions and Answers

- Please introduce yourself by stating your name and affiliation.
- Keep questions under 3 minutes to allow time for others.
- Please follow up with your question in writing to ensure that it is captured properly.
- Our **official** response will be given in writing, and we anticipate it will be posted on the funding opportunity Solicitations webpage by January 20, 2023.
- Questions are Due by 5 p.m., January 13, 2023

Whom to Contact?

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Thank You!