**RFP-22-802**

**January 27, 2023**

**QUESTIONS AND ANSWERS**

**Commercial Forecast Model**

**Q1:**

It is very difficult to assess the scope of the conversion project if we do not have access to the original Fortran code. Some of the comments during the workshop mentioned changes that have to be made to some of the "for" loops whenever the number of attributes change. It would only be possible to get an accurate understanding of:

1. The effort required to understand the working of the exiting model.
2. Which version of Fortran that was used (Fortran 66, 77, 90, 95, 2003, 2008 or 2018)
3. The structure of the code to extract the underlying model.
4. The effort required to translate it into Python or R.

As such I think it is crucial for bidders to either have access to the code, or, if it contains sensitive information, to have the opportunity to be shown the code by the CEC.

**A1:**

1. Difficult question to answer – it all depends on the skills and knowledge of the individual reviewing it.
2. The model is built in FORTRAN 95
3. The FORTRAN code consists of several subroutines/modules that are called from the main code. The model is run in the Command Prompt environment. A separate run is made for each of the seven utilities by specifying the name of the utility on the command line. There is a separate set of input files for each of the utilities. The model generates several different output files for each of the utilities.

The total number of lines is about 9,000 lines. However, it is estimated that about 35%-45% of the code consists of blank lines, comments, formatted Read & Print statements or declaration of arrays. The FORTRAN code will be made available after the start of the project.

1. Difficult question to answer – it all depends on the skills and knowledge of the individual reviewing it.

**Q2:**

Regarding RFP-22-802, we kindly request clarification on the following:

1. Page 5 of the RFP recommends that bidders review "A copy of the FORTRAN code of the existing model." Please indicate where we can access a copy of this code.
   1. If access to the FORTRAN code cannot be provided, can you indicate how many lines of code are used by the existing model?
2. After inspecting the existing FORTRAN code and/or size summary, we may determine that the size and complexity of the model would make a translation to a new code base infeasible in the one-month allotted time described on page 15 of the RFP. In such a case, will the CEC consider an updated timeline that we propose?

**A2:**

1. That was a mistake and will be corrected in the updated RFP

(Please see [RFP Addendum](https://www.energy.ca.gov/sites/default/files/2023-02/00_RFP-22-802_RFP_Commercial_Forecast_Model_Addendum_01_ada.docx))

* 1. The FORTRAN-95 code consists of several subroutines/modules that are called from the main code. The model is run in the Command Prompt environment. A separate run is made for each of the seven utilities by specifying the name of the utility on the command line. There is a separate set of input files for each of the utilities. The model generates several different output files for each of the utilities.

The total number of lines is about 9,000 lines. However, in my estimation about 35%-45% of the code consists of blank lines, comments, formatted Read & Print statements or declaration of arrays.

1. Yes, we would consider extending the allotted time ­– The task deliverables dates listed on page 15 of the RFP have been revised.

(Please see [RFP Addendum](https://www.energy.ca.gov/sites/default/files/2023-02/00_RFP-22-802_RFP_Commercial_Forecast_Model_Addendum_01_ada.docx))

Please note - the task deliverables dates are estimates and subject to change once the extent of each task is mutually agreed – as long as it is within the timeframe of the project and has minimum or no impact on other tasks and the overall flow of the project.

**Q3:**

1. To help gauge the complexity of the current Fortran model, would the CEC be able to share a schema or technical architecture of the model?
2. The section “Software Application Development” details the list of allowable architecture components. This list does not include Python/R. Can the CEC advise on how this requirement aligns with the scope of the RFP?
3. If the model code is to be moved to python, what would the documentation standard for the code be? Would an industry standard, like PEP 8, suffice?

**A3:**

1. The FORTRAN-95 code consists of several subroutines/modules that are called from the main code. The model is run in the Command Prompt environment. A separate run is made for each of the seven utilities by specifying the name of the utility on the command line. There is a separate set of input files for each of the utilities. The model generates several different output files for each of the utilities.

The total number of lines is about 9,000 lines. However, in my estimation about 35%-45% of the code consists of blank lines, comments, formatted Read & Print statements or declaration of arrays.

1. The “Software Application Development” section of the RFP on page 33 has been updated to include the latest versions of R & Python. It reads as follows:
   1. The latest desktop version of R or Python
2. Yes, the industry standards such as PEP 8 can be used to write the code.

**Q4:**

Regarding Attachment 7: Can CEC confirm only those tabs listed on page 19 of the RFP need to be completed? The Excel file has two additional tabs (7a and 7b) do these need to be completed?

**A4:**

The 7a & 7b tabs do need to be filled out by the Applicant.

**Q5:**

1. On p.7 of the RFP, there is a list of “electronic file format”. Can the list be updated to include R and Python scripts?
2. The RFP lists May 1 as the contract start date. The Schedule of deliverables shows due dates for Task 2.1 in April before the contract start date. Can CEC please update and reconcile the schedule with the contract start date?

**A5:**

1. There are no scripts in R or Python. The main task of the project is to convert the existing FORTRAN code to either R or Python.
2. The date has been updated. (Please see [RFP Addendum](https://www.energy.ca.gov/sites/default/files/2023-02/00_RFP-22-802_RFP_Commercial_Forecast_Model_Addendum_01_ada.docx))

Please note - the task deliverables dates are estimates and subject to change once the extent of each task is mutually agreed.

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Please note - the task deliverables dates are estimates and subject to change once the extent of each task is mutually agreed.

**Q6:**

The budget workbook tab 7b for the Commercial Forecast Model Update only includes the expected general classifications of Project Manager and Director for Tasks 3, 4, and 8. Can we also use Scientists, Analysts, and Engineers for these tasks?

**A6:**

The given job classifications are suggested types that the contract office sees fit. However, any other classifications that can provide work support toward Tasks 3 through 7 can be included in the budget along with their expected contribution and hourly rates. The proposal will also provide justification by their resume that details their qualifications.

The above information is applicable for Tasks 3 through 7.There is no task 8

**Q7:**

This RFP requests converting the Fortran model to R or Python. We understand the appeal of R & Python being widely used open-source languages. But we are skeptical that will prove the best option for CEC in the long run. Typically, an Analytica model is one tenth to quarter the size of an equivalent R, Python, or Fortran model and far easier to understand, maintain, and extend (e.g., adding utilities, segments, building types, horizon dates, changing time steps, etc is much easier).  It also immediately supports easy scenario analysis, sophisticated sensitivity analysis, and uncertainty with Monte Carlo, and sophisticated graphing and charting, with no extra code. It's built-in statistical tools, regression, and optimization make for easy calibration. It can easily read data from and write results to spreadsheets, csv files, and databases.

**A7:**

Yes, we would consider a proposal to translate the model to Analytica.