

Quarterly Fuel and Energy Report Automated Consumption Data Validation and In-House Publishing

Contact: Steven Mac (651-1488) and Andrea Gough (654-4928)

Action Requested: Commissioner support for a California Multiple Award Schedule (CMAS) agreement with Andes Consulting LLC for \$350,000 to provide programming services to design, develop, implement, test, and document software to automate the validation and in-house publishing of Quarterly Fuel and Energy Report consumption data and to train the Energy Commission staff in the use of the enhanced system features (ERPA funding).

Business Meeting Date: May 14, 2014

Background: As part of the FY2013/14 workplan process, \$350,000 was approved to automate the validation and in-house publishing of the QFER consumption database that stores historic energy consumption information. Following the Commission's Information Technology Services Branch review and approval of a Feasibility Study Report (FSR), the Energy Commission released a CMAS/Request for Offer (RFO). On April 22, 2014, the evaluation team reviewed, evaluated, and scored the four proposals submitted in response to the RFO. As a result, the evaluation team proposes the contract be awarded to Andes Consulting LLC.

QFER Program. The purpose of the Energy Commission's QFER data collection and analysis program (CCR, Title 20, §§1301-1333) is to produce data that can (i) be used to support the Energy Commission's modeling methodologies, (ii) produce insights independent of any modeling methodology, and (iii) be collected and maintained in a searchable database that can be accessed to respond to inquiries from the public, academia, and governmental agencies. Accurate QFER data is a quintessential precursor to accurate Integrated Energy Planning Report (IEPR) electricity and natural gas demand forecasts (PRC § 25301/SB-1389).

Program Challenges. The current QFER data reporting system is outdated, providing computer *assistance* rather than computer *automation* in key program areas such as data validation and data publishing. The database system limitations, coupled with constrained QFER staffing levels, have dampened feedback to utilities regarding accurate reporting and have precluded opportunities to educate utilities in how to remedy such shortcomings. Resulting judgment-based data adjustments have contributed to decreased forecasting transparency. Data quality enforcement is an important component of the QFER data quality problem, a role staff can more effectively perform with support from a substantially automated data reporting system.

Justification for Action Requested: Computer automation of QFER consumption data would permit staff to redirect focus from the mechanics involved with data validation and in-house publishing to focus on improving data quality and analyzing

trends in specific industries and business types. The new system would (i) automate validation routines that flag irregular NAICS (industry classification codes) and inconsistent energy consumption amounts; (ii) as a result of the flagged data, allow staff to further investigate irregularities to determine data accuracy; (iii) improve data quality by staff's timely and more frequent interactions with utility staff to address data quality concerns; and (iv) provide easy access to data for trend analysis by automatically formatting data by industry and building groupings relevant to California's energy consumption.

Owing to the nature and magnitude of this undertaking, QFER staff prepared a FSR. FSRs are primarily concerned with assessing/reducing the risk that an IT investment could fail to achieve practical (or business) objectives. California Department of Technology delegated review and approval of the FSR to the Commission's ITSB staff. After a thorough review the ITSB staff approved the FSR and released a RFO. Of the companies presenting proposals in response to the RFO, staff finds that Andes Consulting LLC is the most qualified.

Pros and Cons:

Pros.

- Frees staff time to work with utilities on improving data quality, in part, through timely and more frequent interactions with utilities.
- Automated in-house publishing assists staff by efficiently presenting detailed industry and commercial building type energy consumption data in a format that effectively allows analysis of data trends in California by specific customer types (chemical manufacturing, semiconductor manufacturing, schools, office buildings).

Cons.

- Additional staff time necessary to review detailed commercial building /industry energy consumption data for accuracy which delays feedback to the reporting utilities.
- Staff will continue to manually publish data in-house which adds extra time and steps for analysis of trends shown in detailed energy consumption data.

What Happens Next: Upon Commissioner support, the CMAS Agreement with Andes Consulting, LLC, would be presented to the Full Commission during the May 14, 2014 business meeting for possible approval.

The following table presents the primary objective and key elements of the \$350K CMAS agreement to automate consumption data validation and in-house publishing.

Automated Consumption Data Validation and In-House Publishing

Primary Objective	Key Elements	Funding (FY)	Contract Length
<p>Target computer automation of QFER data validation and in-house publishing</p>	<ul style="list-style-type: none"> • For longer term trend analysis, import data from older QFER forms (1980-1989); map SIC data to NAICS codes • Distribute unclassified kWh amounts (when utilities have assigned non-meaningful NAICS codes); notify staff to resolve with utilities • Aggregate energy consumption totals by specified geographic areas (e.g., planning area, county, climate zone) • Load self-generation data • Develop Data Validation Routines • Perform trend and other statistical analyses on NAICS and non-NAICS QFER data; notify staff of irregularities • Import and auto-compare QFER data to official alternate data sources (e.g., EIA, FERC) • Compare data to benchmarks and/or adjust to official alternate data sources • Import and auto-compare utility NAICS audit reports to verify Title 20 NAICS accuracy requirements • Assist in filling missing historical data cells using rule-based protocols • Develop in-house data publication capabilities • Develop automated report-generating algorithms to accelerate staff response to data requests from in-house (e.g., IEPR forecast), public, academia, and government agencies 	<p>\$350,000 (2013/14)</p>	<p>24 months</p>