

South Bay Cities Council of Governments

November 12th, 2013

To: Steering Committee
From: Jacki Bacharach, SBCCOG Executive Director
Subject: Enterprise Energy Management Information System (EEMIS) – long term planning

BACKGROUND

In March 2011, the SBCCOG began work on the Strategic Plan Support contract with Southern California Edison. This contract includes two components 1) a training program and 2) funds to launch and operate utility manager software for use by the South Bay Cities. The contract specifies utilization of the Enterprise Energy management Information System (EEMIS) which is provided through LA County. The contract also requires a value and benefits analysis of the EEMIS system with a comparison of a minimum of two other utility manager platforms. SBCCOG staff identified the two comparative systems as Portfolio Manager tools hosted by the EPA's Energy Star Website and EnergyCAP, a privately owned platform.

COMPARISON OF TOOLS FOR ENERGY MANAGEMENT

In considering the minimum of two other utility management platforms that SBCCOG is contractually obligated to evaluate, it is important to know how each of the platforms functions.

Enterprise Energy Management Information System (EEMIS)

The EEMIS utility manager software platform provides a web base monitoring and data archiving tool for any type of utility account. It was originally launched by LA County in 2003 and continues to be operated by them. Starting in 2010 LA County began work to provide this tool to 57 Southern California cities. The strength of this system is its ability to compile active facility management information for a large portfolio of buildings using network connections to provide live meter data. Unfortunately, the SBCCOG contract with SCE limits the installation of equipment enabling live meter data monitoring to approximately 20 of the largest city buildings in the South Bay. However, when the Utility Monitoring contract is over, it is anticipated that only three or four installations will be complete. Expected installations include two sub-metered building campuses and one or two live meter connections. Concerns about

network security (getting the data into the EEMIS system) as well as limited staff time have been deterrents to additional installations.

All other city operated utility accounts will be tracked via monthly bill data. The EEMIS software is able to archive and report monthly bill data. This bill data is provided electronically to LA County by Southern California Edison. The utility bill reporting capabilities of EEMIS include:

- Baselines and benchmarks
- Consumption or cost trends
- Utility bill archival
- Bill validation/variance analysis

This tool is being offered to Southern California cities on a cost share basis using the number of accounts for each city to determine the licensing fee charged by LA County. In aggregate, annual licensing fees for South Bay Cities would be approximately \$52,000 which is covered under the SBCCOG contract. There is no cost to participating cities through the term of the SBCCOG contract. While it is not guaranteed, it appears likely that the EEMIS system will continue to be offered through local government partnerships at no cost to cities after 2015 when the current contract ends, but in the event that it is not part of the local government partnership, cities may continue using the system by paying the annual licensing fee on their own.

Start-up of the EEMIS system has been slower than anticipated due to lack of data which was to be provided by Southern California Edison and required re-designs by LA County. It became operational in March 2013. Since then the data has continually improved and is now available for all South Bay Cities electric utility accounts. 60% of all accounts are being populated by current bill data. Still only **35%** of the expected historic data is available.

The EEMIS system has been used by the SBCCOG to facilitate energy efficiency project identification in Redondo Beach, and to perform street lighting bill audits for Torrance and other South Bay Cities. This system has the potential to have large impact by providing a monitoring platform to mitigate rising utility costs through strategically identified energy efficiency and demand response opportunities.

The EEMIS system has been a huge step forward in Energy Management best practices. It does however have its limitations such as an outdated web platform and the lack of project monitoring, weather normalization, rate analysis, and cost avoidance tools. LA County is committed to updating the system in the future to keep up with the marketplace after all 57 cities participating in EEMIS have fully functional data sets.

Energy Star Portfolio Manager

The EnergyStar Portfolio Manager is an EPA hosted web tool free for public use. All federal buildings are required to use Portfolio Manager for benchmarking purposes. The Portfolio Manager is the most commonly used platform for utility monitoring. It provides some good monitoring tools, but is lacking in other areas. The Energy Star Portfolio Manager is able to obtain an automated bill data feed from both SCE and SCG. The reporting capabilities of Portfolio Manager include:

- Baselines and benchmarks
- Consumption or cost trends
- Goal tracking

EnergyCAP Comparison

The EnergyCAP platform excels in analytic tasks not offered in EEMIS or Portfolio Manager such as project validation (measurement and verification) and weather normalization. Unfortunately EnergyCAP does not offer automated data feeds from SCE or SCG like both of the other tools do. Despite the lack of automated data, the EnergyCAP platform is regarded as the gold standard for utility bill monitoring and reporting because its friendly user interface quickly provides graphic and tabular reports. Its reputation and use by firms such as Johnson Controls is also due to its capacity for weather normalized reporting, project tracking, and cost avoidance reporting. EnergyCAP was the first software of its kind when it was established 30 years ago and recently received an award from the Association of Energy Engineers for continually advancing the energy efficiency industry. The reporting capabilities of EnergyCAP include:

- Baselines and benchmarks
- Consumption or cost trends
- Bill validation/variance analysis
- Rate analysis
- Measurement and verification for energy efficiency projects
- Cost avoidance resulting from energy efficiency projects (using weather normalization techniques)

The EnergyCAP software is used by the City of San Bernardino, Albany, El Cerrito, Piedmont and other California cities along with Minneapolis, the state of Maryland, and numerous university campuses. This software is also used by the Energy Service Company Johnson Controls to perform project tracking (measurement and verification) to assure energy savings and their profits.

The EnergyCAP software is offered by a private vendor with an annual licensing cost to the SBCCOG of \$23,625. This is significantly lower cost than the EEMIS system largely because the EnergyCAP bid achieves economies of scale by contracting for the service through a single entity – the SBCCOG.

Reporting Capacity	EEMIS	Portfolio Manager	EnergyCAP
Monthly utility cost trends	Good	Poor	Excellent
Monthly utility consumption trends	Good	Poor	Excellent
Bill archival	Yes	No	No
Benchmarking	Good	Poor	Excellent
Project tracking	No	No	Yes
Cost avoidance	No	No	Yes
Graphic dashboard	None	Limited	Excellent

Table 1: Utility Monitoring Tool Comparison Matrix

There is another vendor for these services – UtilityTrac Plus which is also used widely but does not have the name recognition associated with EnergyCAP. This service was also evaluated and it was found that EnergyCAP provides more functionality at a lower price. UtilityTrac Plus would have a full deployment cost of \$46,412 and an annual licensing fee of \$25,187. The UtilityTrac software is a simplified yet more expensive version of the EnergyCAP software platform - provided to UtilityTrac by EnergyCAP through a licensing agreement.

Tool Combination Possibilities

Each of these tools is intended to be used as a stand-alone product, but there are potential benefits from using these tools together. The ability to use these tools together is common place but has been limited to pulling an Energy Star score from the EnergyStar Portfolio Manager. It is however possible to use the Portfolio Manager as a data bridge between the utility companies and EnergyCAP thus eliminating the need for hand entered data. Both EEMIS and Portfolio Manager are able to collect data from the utility companies that can be easily fed into the EnergyCAP platform. These tools should be able to be used synergistically to provide automated data to EnergyCAP with the assistance of a computer programmer.

This synergistic platform would allow the SBCCOG to address needs expressed by several South Bay Cities. Carson, El Segundo, Gardena, Hawthorne, Hermosa Beach, Manhattan Beach, and Torrance have all expressed interest in project tracking, project cost avoidance reports, and rate analysis. This would not be possible without utilizing EnergyCAP. SBCCOG staff is

recommending further evaluation of the EnergyCAP software through an EnergyCAP pilot project.

EnergyCAP Pilot

SBCCOG staff recommends moving forward with a small scale test of the EnergyCAP software to facilitate evaluation of an “organization-wide full deployment” meaning the utilization of EnergyCAP for all 2,400 Southern California Edison accounts paid by South Bay Cities. This pilot would test the EnergyCAP system on a sample set of 50 utility meters. The sample set will include meters where historic data is available and where recent energy efficiency projects have been completed. This will allow us to test the project tracking and cost avoidance functions. The pilot scope is described by the vendor below:

A. Project Objective

EnergyCAP, Inc. (ECI) will implement and support COTS (commercial off-the-shelf) EnergyCAP Enterprise energy efficiency software on a pilot basis for SBCCOG with the intent to move to an organization-wide full deployment upon acceptance of the pilot and availability of funding. EnergyCAP is designed to improve management of utility costs, effectively plan and budget, monitor and track energy efficiency projects, report on sustainability and environmental practices, and provide an attractive return on investment through effective management of SBCCOG’s energy resources.

B. Project Specifications

ECI will implement and support EnergyCAP Enterprise energy efficiency software on a pilot basis for SBCCOG. Project specifications, as currently known and including assigned responsibilities, are outlined in detail in the Project Schedule below. The Pilot Phase is limited to 50 SBCCOG-managed meters for any property and three months of operational evaluation upon completion of implementation.

PILOT BUDGET

The EnergyCAP 3 month pilot proposal has no software fees as this is intended as an evaluation period. Costs associated with the pilot include database, software setup, support, and training by the vendor totaling \$9,500. With additional support available at \$150/hour as needed. The SBCCOG staff recommends a budget not to exceed \$12,500.

In addition, the SBCCOG would need to hire a computer programmer to develop the interoperability between platforms allowing for automated data to flow into EnergyCAP. The programming cost is estimated at \$2,000.

If an “organization-wide full deployment” of EnergyCAP is recommended in the future it would come with an initial cost of \$42,125 which includes the annual \$21,125 licensing fee , \$2,500 data base fee, and estimated project launch management services at an hourly rate of \$150/hour. The total contract cost for a full deployment is estimated at \$42,125. This estimate will be refined during the pilot period. Annual licensing fees after the initial startup are estimated at \$23,750

RECOMMENDATION

Recommend that the Board approve the following items for the Utility Monitoring Initiative all of which are paid for out of the contract for EEMIS evaluation and implementation services with SCE:

1. Contract with EnergyCAP for the pilot testing platform for 50 utility accounts in an amount not to exceed \$12,500.
2. Engage a computer programmer to create a data automation process in an amount not to exceed \$2,000.

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