BEFORE THE CALIFORNIA ENERGY COMMISSION

In the matter of:
EPIC Second Investment Plan

Docket No. 12-EPIC-01

COMMENTS OF
THE ENERGY COALITION
ON
ELECTRIC PROGRAM INVESTMENT CHARGE
SECOND INVESTMENT PLAN

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I. Introduction

The Energy Coalition appreciates this opportunity to provide comments on the California Energy Commission's ("CEC") *Electric Program Investment Charge ("EPIC") Second Investment Plan.* The comments and recommendations provided below are based on the direct professional experience designing, developing and managing San Francisco's energy efficiency retrofit program for public buildings and more recently, The Energy Network's public agency retrofit program. The San Francisco program was held up as a successful model for public agencies in the CEC Draft 758 Action Plan.

The SFPUC retrofit program's use of third party objective engineering expertise in combination with Indefinite Quantity Contracts adapted for whole building energy efficiency (EE) retrofits provides significant benefits in the execution of EE retrofits in general and advanced EE technologies in particular. These benefits are described below and include for example, speedy delivery, flexibility, cost control, and volume discounts. The program approach used by San Francisco has been adapted and expanded for implementation on a regional scale in Southern California as a part of The Energy Network, a CPUC authorized program, known formally as SoCalREN, that is administered by Los Angeles County. On behalf of Los Angeles County and The Energy Network, The Energy Coalition is responsible for the design and implementation of an innovative program that provides public agencies throughout the Southern California Edison and Southern California Gas Company territories with easy access to on-call turnkey retrofit services delivered through a pre-qualified pool of consultants and competitively bid energy retrofit-Indefinite Quantity Contracts.

Regional collaborations provide additional benefits in the deployment of advanced technologies through cooperative purchasing. Regional energy programs such as The Energy Network can:

- Overcome the inefficiencies of duplicative procurement processes by multiple local agencies engaged in similar projects;
- Provide efficient delivery of products and services;
- Obtain the best value for advanced technologies through competition;
- Reduce overall market inefficiencies and leverage economies of scale;
- Efficiently connect EE service providers with multiple customers through fair and equitable competitive contracting opportunities;
- Maintain public confidence through ethical and transparent procurement practices;
- Provide an efficient marketing channel for utility incentives and other offerings;
- Promote transparency and consistency of engineering assumptions and methods; and
- Provide an efficient channel to educate and train energy engineers, architects, contractors, building operators and technicians on advanced technologies, their proper applications, and/or use of diagnostic or feedback tools. In this way regional programs can serve as a "do tank" and learning community to help advance the deployment of advanced technologies.

Finally, a regional energy program model can bring together energy service providers, IOU representatives and agency staff within a coordinated structure that enables the entire industry's collective expertise to be tapped on an ongoing basis to foster greater collaboration and co-creative innovation in ways that may not emerge strictly through competition. Many of the innovations that contributed to the success of the San Francisco JOC based EE program, and the advancements being made currently through The Energy Network are the result of this kind of collective creativity.

In addition to providing easy access to on-call turnkey project delivery services through regionally procured contracts, the Energy Network program is designed to work in collaboration with and leverage

all IOU offerings and fill in any gaps with customized services to deliver more comprehensive projects including the use of advanced technologies. These projects can achieve deeper energy savings through whole building, street lighting, and water/wastewater retrofits which in some instances can be bundled together into one large financing package that to takes advantage of utility incentives, on bill financing and the program's Energy Project Lease Financing services.

The program launched in mid-September and 29 agencies have enrolled to date with more than 100 individual projects initiated. The combined SCE/SCG territories include over 715 eligible public agencies across 12 counties. The 2013-14 goal is to achieve 29,675,000 kWh and 400,409 therms in annual energy savings, and utilization of advanced technologies in consort with an overall comprehensive approach is integral to the program design. The program combines project management provided by The Energy Coalition, with engineering expertise delivered through 19 premium energy consulting firms and 14 competitively bid lighting and mechanical contractors across 12 counties that were awarded contracts through a competitive bid conducted throughout 12 counties by the National Joint Power Alliance. The end result is improved quality, less cost, and an accelerated time to energy savings.

II. Response to Workshop Questions

1. **What are some different ways you have advanced clean energy technologies into the procurement process?**

In San Francisco's program, price books and Indefinite Quantity Contracts (otherwise known as Job Order Contracts or JOCs) were adapted specifically to implement whole building lighting and HVAC (EE) retrofits, while contracting directly with energy efficiency (EE)-specialist lighting and mechanical trade contractors.[1] The program has completed over $17 million in EE retrofits in 100+ municipal buildings since 2009. Many examples of advanced technologies have been completed in a wide range of public facilities that demonstrate the program model's broad applicability across various building types. Projects tend toward deep retrofits comprised of a comprehensive package of measures that combine short-payback and long-payback measure on a facility or multi-facility basis to maximize energy savings which helps overcome the first cost barrier associated with some advanced technologies.

The program brings together two necessary components to successfully identify and execute EE projects that incorporate advanced technologies:

1) Third part objective energy engineering expertise familiar with the proper application, evaluation and commissioning of advanced technologies; and
2) Quality contractors with demonstrated energy efficiency retrofit experience.

Local engineering teams and contractors are brought together in a collaborative approach to conceptualize and execute projects rapidly and cost-effectively. Use of energy dfficiency JOCs has made a dramatic difference in the quality, speed and value of EE projects executed by the SFPUC as well as the deployment of advanced technologies when compared to design-bid-build.

JOCs are ideally suited for energy efficiency retrofits and provide numerous advantages for the

[1] The City of San Francisco JOC based EE program is described in more detail within two papers published as part of the 2010 and 2012 American Council for Energy Efficient Economy Summer Study on Energy Efficiency in Buildings, and listed in the references section.

deployment of advanced technologies in particular. [2]

Key advantages from utilizing JOCs for EE retrofit programs and projects include:

1) *Ease of specifying and procuring advanced technologies:* Typical public sector design-bid-build procurement methods can make it difficult to specify and procure advanced technologies. With JOCs, numerous advanced technologies from various manufacturers - as well as related tasks such as commissioning - can be incorporated into the price books to be available to include in the contractors Scope of Work for specific projects as they are identified. As new technologies become available, the price books can be updated but if at any time a measure is found in the price book, it can always be added as a "non pre-priced" item and paid for "at cost" plus a pre-agreed mark-up.

2) *Speedy project delivery*: With the expedited procurement process that JOCs bring, construction can begin in weeks instead of months after an energy audit is completed. This compressed project schedule allows IOU incentives for advanced technologies to be processed more quickly avoiding the possibility of incentives being void by the time construction is completed. Speedy delivery also allows agencies to start realizing energy savings sooner.

3) Flexibility: Access to on call contractors through an expedited task order process makes it easy to perform mock ups and small pilots before applying technologies on a wider basis. One can even easily add new technologies to the scope during construction – the minute new they become available – without the risk of price gauging with change orders since it is fairly priced as a "non pre-priced" item

4) *Quality contractors and quality assurance*: Contractors must meet minimal qualifications and are guaranteed only a minimum amount of work creating the incentive to perform high quality work in order to continue receiving projects.

5) *Complete transparency*: Construction costs are broken down into a detailed list of tasks showing the pre -set unit prices and quantities.

6) *Cost savings and greater cost certainty*: Volume discounts are built into the pricing structure in the catalogs. The process also ensures that any change orders are fairly priced, thereby providing greater cost certainty and control. Cost savings also come from lower administrative and design costs.

7) *Greater collaboration and integrated design approach*: Contractors are on contract to engage early in audit-design stages to solicit their input on the application of advanced technologies and help collaborate on their successful execution.

Examples of advanced technologies in the San Francisco municipal retrofit program include:

- Davies Symphony Hall (completed in 2009)
    - Replaced stairwell and exit corridor lighting with new bilevel dimming luminaires with integrated occupancy sensors
    - Replace all portable incandescent office task and general lighting with compact fluorescent and/or LED lamps

[2] An IQC is a competitively bid, indefinite quantity contract with a catalog of detailed construction tasks at established unit prices. With IQC, Contractors bid a mark-up that is applied to a catalog of detailed construction tasks with pre-set unit prices and specifications, referred to as a price book or construction task catalog (CTC). The Contractors that meet minimum qualifications and bid the lowest mark-up are awarded the contracts. Multiple Contractors can be awarded master contracts through one simple, fast, competitively bid RFP process. Contractors are then available as needed to deliver flexible, comprehensive retrofit services. The CTC includes specifications for each task and is priced locally, including local material, labor and equipment rates. As projects are identified, task orders are issued against the master contract. Each task order consists of a scope of work, which the contractor translates into a detailed list of repair and construction tasks, all of which have specifications and established unit prices.

- Replaced box office T12's with LED tube lighting
- Replaced exterior and marquis lighting with cold cathode and LEDs
- Replace incandescent and fluorescent exit signs with LEDs
- Chillers with Turbocor compressors designed to optimize the performance through highly efficient oil-free centrifugal compressor and magnetic bearing technology and variable-speed drives.

- Advanced Control Strategies at various facilities including additional field panels, sensors, and programming required to achieve the extra efficiencies available from optimized controls; i.e., occupancy sensors that control VAV boxes and turn supply air to code required minimums.
- Wireless controls / Pneumatic to DDC Conversion Kits

The Los Angeles County administered Energy Network program builds on the success in San Francisco through the design and launch of a much larger and more comprehensive regional program that includes many additional enhancements that will allow greater support to public agencies and will greatly expand and accelerate the implementation of energy efficiency upgrade projects in their facilities including the use of advanced EE technologies. Examples of advanced technologies in projects underway through the Energy Network program include:

- Covina lighting project includes code compliant LEDs that incorporate bi-level switching, in use with an occupancy sensor at each fixture (the decorative retrofit kits are exempt from this requirement).
- Pomona lighting project includes advanced wireless lighting controls system, to ensure code compliance and to improve control of their lighting systems. The controls enable scheduling, daylight harvesting, and occupancy-based control.
- Pomona mechanical project includes replacing two chillers with Turbocor compressors and various advanced controls strategies.
- Seven Cities are proceeding with LED street lighting retrofit projects.

2. What do you look for and what information do you need to include clean energy technologies in need to include clean energy technologies in procurement for your facilities?

To begin, The Energy Network conducted an RFQ to identify qualified energy consulting firms familiar with energy efficiency retrofits and advanced technologies.

For Lighting Projects: Energy Solutions was the lead firm that updated the price books to include the most advanced technologies. There were three primary industry organizations that set baseline standards for performance of advanced technologies that were utilized in the development of the price books and are considered when identifying advanced technologies for specific projects.

1. The Consortium for Energy Efficiency (CEE) for T8 lamps and ballasts;
2. The Design Lights Consortium for certification of LED fixtures (generally higher output, exterior fixtures); and
3. Energy Star certification's of smaller LED lamps.

There are other groups and standards that are considered, but these are the most pertinent. All of these organizations provide performance standards for lighting products, and corresponding qualified products lists that track the latest equipment that meets the standards. These product lists are generally the basis for utility incentive program eligibility, which is why there was considerable effort in The Energy Network's program to include all measures receiving incentives form SCE. Another factor considered for developing the price book was the implementation of T24 2013. Engineers also make recommendations

simply based on experience with the products in the field and feedback from customers, and other industry knowledge from programs such as LEDA (PG&E's LED Accelerator Program), the ETAP Program (Energy Technology Assistance Program), and the California Lighting Technology Center for example.

For Mechanical Projects: EnerNOC was the lead for indentifying and incorporating advanced technologies into the price books. Again, there was considerable effort to include all measures receiving incentives from SCE. Additionally measures were identified based upon industry publications (ASHRAE journals, AEE Journals), industry tradeshows, and vendor publications or contacts associated projects where the owner/designer who can vouch for the performance or where there is field installed performance data rather than manufacturers data/lab data/spec sheet data.

Is there a critical need for funding for technical certification from independent parties, testing protocols, or "best in class" lists for emerging clean energy technologies? How would this facilitate market adoption?

There appears to be more support for advanced lighting technologies such as those listed above that make available field demonstrations, 3rd party verified product performance data, and standards that provide credible information to help drive adoption of emerging technologies. Perhaps the CEC could support more "technical certification from independent parties, testing protocols, or "best in class" lists for emerging clean energy technologies in the area of mechanical retrofit solutions. Plug load monitoring and controls may be another area that could benefit from more from technical certifications and demonstrations.

3. What are some innovative procurement strategies that can potentially reduce the purchase cost of clean can potentially reduce the purchase cost of clean energy technologies for the electricity sector?

As mentioned above, the use of Indefinite Quantity Contracts (or JOCs) help reduce the purchase cost for advanced technologies through volume discounts, pre-set pricing and a process that ensures that any change orders are fairly priced without the typical price gouging that can occur with design-bid-build.

Regional energy programs such as The Energy Network can also reduce the administrative costs associated procuring and installing advance technologies, and help obtain the best value for advanced technologies through competition and economies of scale.

4. What are potential activities that can help facilitate the inclusion of emerging energy technologies into the subdivision design and building procurement process, the home/building retrofit process and the home/building retrofit process, and the home/building renovation process? Which of these activities are suitable for the market facilitation program area of EPIC?

It is important to acknowledge that the barriers that impede more deployment of non-advanced technologies - or any type of energy efficiency project - must also be effectively addressed in order to scale up market adoption of advanced technologies. These include lack of available staff, access to third party expertise, difficulty procuring quality engineering services and construction services, and lack of funding and financing analysis services. These barriers in addition to the fragmented way in which the (EE) industry currently delivers services and incentives results in a significant "project delivery gap" for

the customer. This delivery gap is especially prevalent in the municipal, universities, schools, and hospitals "MUSH" market and in the small to medium commercial market - where most of the energy efficiency potential remains untapped. Partial solutions that don't effectively address the customer's needs and this project delivery gap will result in partial success that falls short the kind of response that is called for. We need to develop our collective capacity to organize and come together in ways to effectively address climate change in the time we have left and at a scale in accordance with what is at stake.

Advanced technologies have additional added entry barriers that must also be overcome including greater perceived risk, higher first costs, lack of education on proper application, installation and commissioning. Ultimately, mass deployment and market facilitation of advance technologies is about the entire industry so it requires addressing a number of things simultaneously that together help drive better decisions by building owners and provide the right services at the right time that result the best advanced technologies being identified and specified and proper installed and commissioned.

The Energy Network's program model provides a comprehensive program delivery structure that meets these challenges and can result in greater synergies and efficiencies.

V. Conclusion

We welcome the opportunity to support the CEC in advanced technology demonstration and market facilitation and help grow the energy efficiency industry in ways that benefit all stakeholders and the public good as a whole. We believe that The Energy Network's powerful regional project delivery capabilities provide a very compelling opportunity for successful partnership with the CEC to achieve the aggressive goals and targets of the EPIC program.

Respectfully submitted,

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