

# Beyond the Audit: Making Efficiency Easy and Enticing by Addressing Project Procurement

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**Abstract:** Many states have implemented an Energy Efficiency Resource Standard (EERS) or target to curtail greenhouse gas (GHG) emissions. California alone has set a target of doubling energy efficiency savings in existing buildings by 2030. As more states rely on energy efficiency to reduce GHG emissions, programs designed to support the planning and implementation of energy efficiency projects will become more important. Identifying energy efficiency projects has traditionally been the focus of these programs, however delivering savings remains a key challenge. Strategies to address procurement are often overlooked as program resources focus more on technical resources, such as audits and monetary incentives. Then once identified, specialized energy efficiency projects are often folded in with standard maintenance or capital improvement projects, putting them at risk of compromising the expected performance. This paper focuses on procurement as a key component of program implementation and success and outlines key issues and challenges specifically faced by the public sector. Furthermore, the paper shares a procurement strategy implemented through the Southern California Regional Energy Network (SoCalREN) Public Agency Program that addresses these problems in order to assure intended project performance. The strategy includes engaging procurement stakeholders early in the project process, exploring the different types of procurement pathways and following an implementation checklist to enhance project success. With this systematic approach to procurement, there will be fewer barriers and energy efficiency will be easy and enticing, which will further enable states to achieve their GHG emission reduction targets.

**Key words:** Public procurement, energy efficiency project delivery; energy projects; procurement method options.

## 1. Introduction

Twenty-six states in the U.S. have already committed to reducing greenhouse gas (GHG) emissions by setting up an Energy Efficiency Resource Standard (EERS) or energy efficiency targets [1]. A primary example of this type of initiative is California's Clean Energy and Pollution Reduction Act [2]. Approved in 2015, it calls on the California Energy Commission (CEC) and affected utilities to work together to double statewide energy efficiency savings by 2030. This requires aggressive saving targets through the energy efficiency programs among the various market sectors as defined by the California Public Utilities Commission (CPUC): residential, commercial, agricultural, industrial and the newly carved-out public sector [3]. Program Administrators

(PAs) such as investor owned utilities (IOUs), municipal utilities, regional energy networks (RENs) and now community choice aggregators (CCAs) are ultimately responsible for the success of these programs. However, program implementers play a key role in designing the program services and ensuring that programs deliver results and this paper provides best practices for increasing and accelerating those results in the public sector. The Energy Coalition (TEC) has worked with 100+ public agencies, including cities, counties, school districts, water and wastewater districts on energy efficiency projects as the implementer of the Southern California Regional Energy Network (SoCalREN) Public Agency Program. The work with such a large range of agency types has delivered over 50 million kWh in first year energy savings by offering comprehensive start to finish services to over 250 projects since 2013. The insights in overcoming procurement challenges are presented in

this paper.

Procurement is a significant barrier public agencies face when implementing energy efficiency projects. In TEC's experience, the public sector steers away from innovation and prefers old and proven methods when it comes to procurement which is not always ideal for energy efficiency work. In fact, others highlight that a proactive approach to procurement in the public sector may not be common practice due to lack of awareness, lack of technical support and management, limited upfront funding, high risk aversion, restrictive policies and long and complicated institutional processes [4]. These reasons exemplify why the public sector needs a better solution for procurement when it comes to energy efficiency projects.

Procurement can be defined as the steps between the decision to commit funding and move forward with a project and the execution of a contract to an implementing contractor. Through experience and a relentless focus on outcome-based strategies, Vance [5] found that new approaches to procurement can accelerate project implementation and create improved results compared to the status quo. After evaluating over 250 public agency projects, TEC has found that there is no "cookie cutter" approach to procurement and has thus recommended best practices for

procurement. Fig. 1 shows the type and frequency of procurement options used on public agency projects through the SoCalREN Public Agency Program. Regardless of procurement pathway used, agencies will benefit from best practices outlined in this paper to assure projects are completed as designed in order to maximize savings.

## 2. Procurement as a Barrier to Energy Efficiency Retrofit Projects

Providing energy audits, even at no cost, does not guarantee realized savings. Along with utility incentives and on-bill financing, program implementers must address procurement to enable and accelerate project implementation. Fig. 2 illustrates the typical energy efficiency retrofit project process that public agencies follow through the SoCalREN Public Agency Program. The figure highlights the key steps through the procurement phase of a project.

Below are five key issues of procurement as a barrier that have been reported by public agencies during the procurement process.

### 2.1 Maintain Status Quo

Energy project managers have several options when it comes to procurement, but the alternatives are not

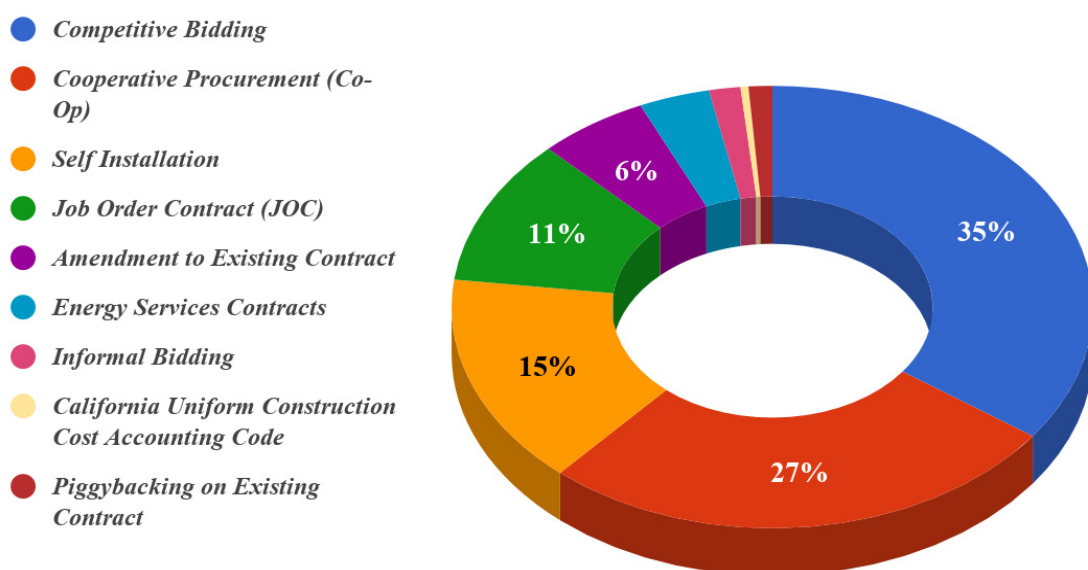


Fig. 1 Frequency of procurement pathways used in the SoCalREN Public Agency Program.

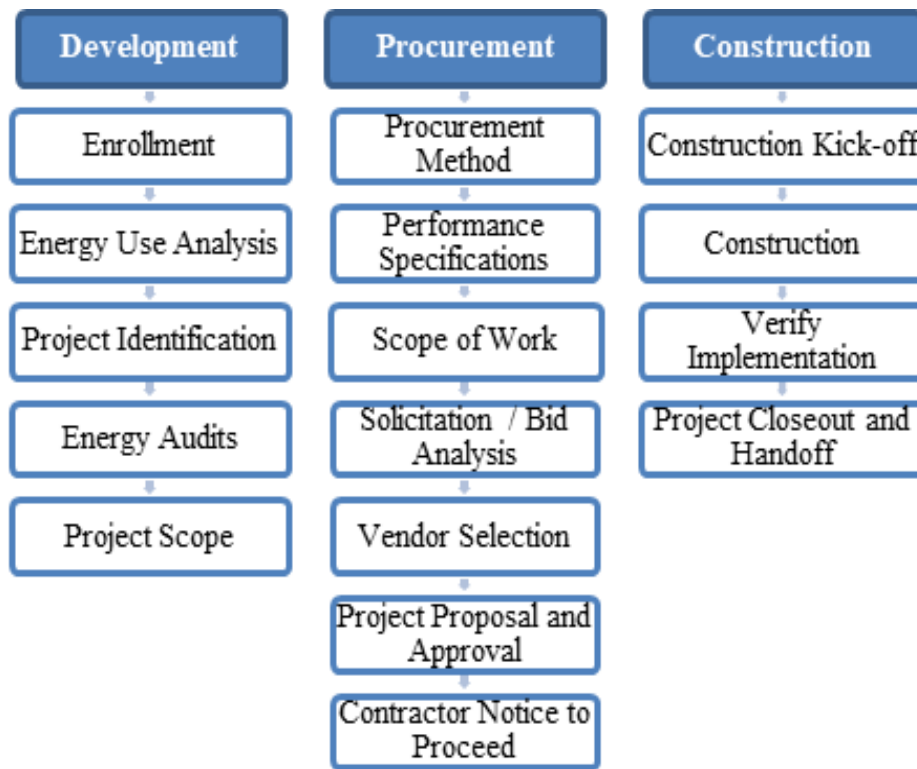


Fig. 2 Typical process for public agency energy efficiency retrofit projects.

always presented. Public agencies, as well as private businesses, develop habits and institutionalize how procurement is done. Expressions such as “we’ve always done it this way” or “we are not able to do...” govern the actions of staff that in most cases are simply following in the footsteps of their predecessors. Furthermore, it is likely that energy efficiency projects are funneled into the same process as every other project with no opportunity to examine how they could be done differently.

2.2 Evaluating Options

With an inertia to keep doing what has been done before and a lack of awareness on procurement options, there is little opportunity to properly evaluate the options and choose the procurement path that best fits the project time-frame, project team and project type. Legal terms and language used to meet competitive requirements, for example, may not be as easily understood by the energy project manager thereby making option evaluation a difficult task. Moreover,

government contract codes further complicate option evaluation.

2.3 Lengthy Process

State codes and local ordinances usually require a competitive bidding process that can be very time consuming. This is a lengthy process which represents a barrier that may be difficult for a project to overcome especially when competing with funding allocation for emergency repairs or other politically motivated projects. Unfortunately, this is a reason why an energy efficiency project can be postponed and put on perpetual maintenance.

2.4 Availability of Staff

Many organizations run with a lean team or limited staffs who oversee the core aspect of a business. For public agencies, this is true for the services they provide. Energy efficiency may not be a priority, and oftentimes is not a core function of someone’s job description. Therefore, staff dedication and staff time

are a hurdle this sector often has to face.

### *2.5 Knowledge and Expertise*

Many public agencies assign energy efficiency to an individual or team that is generalists rather than technical experts and may not always know how energy efficiency can impact the procurement process. They may have completed energy efficiency audits, but are not sure how to move forward to assure a successful project. In most cases, there is no specific training for energy efficiency project procurement. This can result in overlooking the performance aspect of the energy efficiency project which can cause an agency to miss out on local utility incentives and may translate into increased costs due to change order revisions as well as negatively impact on the persistence of the project energy savings. Furthermore, contractors are typically not energy efficiency experts which can leave a gap in project management. This puts the responsibility back on the agency and can stall the project due to a lack of technical expertise.

The impact of these issues can be seen at multiple levels including the agency, utility programs and state. First, energy efficiency projects can stall or if they move forward, underperform and under deliver with respect to the energy savings, cost savings and other projected benefits. Second, there can be missed opportunities to quantify the incentive savings and results needed to show cost effectiveness and program success to the CPUC and stakeholders vested in funding and program development. Finally, these compromised savings and unrealized program impacts can have an adverse effect on local and state energy efficiency goals. The strategy presented acts as an alternative to the energy service company (ESCO) model approach. While an ESCO might be a great fit for a specific project type, this approach is built on the agency taking an active and engaged role regardless of procurement method selected.

## **3. Addressing Issues Early with a Procurement Strategy**

While solving these problems may seem daunting, they are not insurmountable. This paper outlines a strategy to procurement that is rooted on three guiding principles. First, the team should develop a stakeholder engagement and communication plan to not only clarify explicit roles and responsibilities but also to emphasize everyone's essential and valuable contribution to the project; this forms the project team. Second, the team should evaluate procurement options and choose the appropriate pathway for project delivery. Third and key to the execution of procurement, is a checklist. The team must follow these guidelines to ensure project results are maximized, regardless of which procurement pathway is selected.

The goal of this strategy is to develop an approach that is customized and efficient for each agency, helping them maximize energy efficiency and cost effectiveness for every project. It is not a one-solution-fits-all approach, but rather a structure that supports the agencies needs to be flexible and adaptable to each specific project and circumstance.

### *3.1 Integrate Stakeholder Engagement and Communication*

The proactiveness to bring together key stakeholders creates a project team and represents an opportunity to inform, gain trust and develop partners that can support greater and long-term energy goals, such as continuous energy management. When made part of the team, stakeholders see the benefits to themselves and their departments which further commit them to the success of the project. This is a critical success factor to improving procurement and unleashing the energy saving potential for every customer. The rigid perception of procurement might stem from the fact that the energy project manager, contracts or procurement

officer, the legal team and department leaders and administrators have not collaborated on the same energy strategy. These internal stakeholders must engage and communicate in unison to the external project team.

Externally, standard utility programs offer limited support, and contractors and engineers might not be at the table at the planning stages. Utility representatives and energy programs are as keys to project success as a contractor. The speed and scale with which we need to accelerate project implementation require the collaboration of all these players. Procurement, as the bridge between projects identified and construction, must bring everyone together to facilitate open dialogue and align goals for any given project. This can be achieved by communicating the expected engagement from project partners prior to the energy audit and hiring engineering firms for the duration of the project. For example, the SoCalREN requires Commitment Forms to secure buy-in and uses a Gate system that provides progressive and timely check-ins to secure project completion.

As an objective third party, program implementers can play a key role. In this role, a third party can bring best practices from other agencies, provide unbiased information on the procurement options, and facilitate both internal and external stakeholder engagement and communication. They can also provide sample and recommended template documentation to ease the administration of the procurement process and help connect tactical steps with a strategic vision of a comprehensive procurement strategy. Project teams new to energy efficiency may not have the expertise or experience to push the boundaries of procurement and to implement these strategies, and it is up to the third party to provide that support when needed. It is also important to help the project team understand what success looks like on a project by project basis. Successful stakeholder communication assures the team has confidence in maximizing the benefits of a project.

### *3.2 Evaluate and Select Procurement Pathway*

Once the energy project manager has become familiar with the available procurement options, it is up to the project team as key stakeholder to evaluate and appropriately select the best procurement pathway for each project. Considerations include the project size and complexity, the team's own resources in both availability and expertise, the agency's funding capacity and the urgency with which the project is to be implemented. There are at least ten common procurement paths that should be considered by the project team. Fig. 3 plots these possible options against an agency's availability of time and experience with procurement options when working on energy efficiency projects. Note that these are general categorizations and they may vary depending on projects specifics.

Larger and more complex projects require more time from staff, which is often a bottleneck for project development. Creating smaller projects and a phased approach to comprehensive energy efficiency upgrades is an alternative made clearer by being aware of procurement options. This acts as an alternative to the ESCO approach, who bundles up energy efficiency measures. However, public agencies may not have the necessary funding to agree to a portfolio approach to projects, and may need an alternative to reach energy efficiency goals. Also, the task of embedding energy efficiency specific requirements on the procurement process is either more or less complex based on the procurement path. Options like those at the top of Fig. 3 can offer flexibility that is always good but can actually be a hindrance of a well-executed project if not managed correctly. A detailed description of each of the procurement options is provided below to further assist the agency in making that decision. Pathways are organized by small and large projects.

Below is a list of procurement pathways explored by public agencies.

#### *3.2.1 Small Projects*

With small projects, public agencies have a fast lane

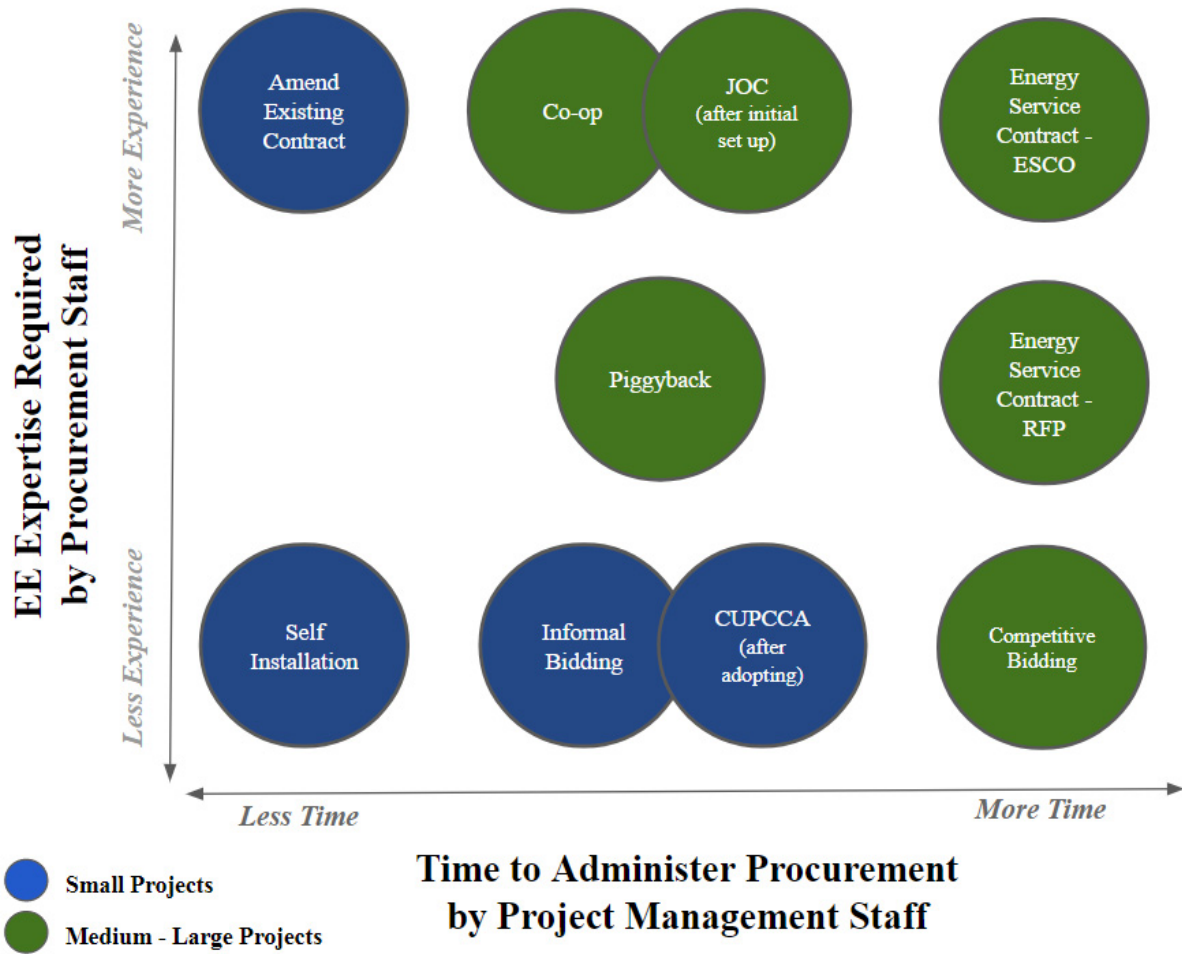


Fig. 3 Possible procurement pathways categorized by time to administer and the required energy efficiency experience from procurement staff.

to work with contractors and realize energy savings because they do not need to go through the public notice process. Pursuing small projects can go a long way towards supporting energy efficiency and sustainability initiatives.

**Self-Installation.** There can be significant time saved when the agency uses its own staff to complete a project. This is perhaps the most cost-effective of the procurement options, but may not be suited for agencies with limited staff availability.

**Informal Bidding.** Public agencies request cost proposals from contractors directly (typically three) when the project scope is simple and the projected cost is under the agency’s predetermined cost threshold. This threshold is \$5,000 for most cities, but charter cities are able to change this threshold based on their

unique city needs. An informal bidding procurement option is among the least staff intensive options.

**California Uniform Public Construction Cost Accounting Act (CUPCCA).** Public agencies can implement projects under \$175,000 with informal bidding procedures if its governing body elects by resolution to become subject to CUPCCA, as specified in the CA Public Contracts Code Section 22000 et seq. The CUPCCA allows for an expedited award process and simplified paperwork and project administration.

**Amendment to Existing Contract.** When an existing maintenance or service contract is in place, and the relevant contractor is qualified to implement the proposed work, agencies may find that extending or amending the existing contract is an ideal option. One potential concern here is that the extended scope may

exceed the limits of what is acceptable beyond the original contract amount.

### 3.2.2 Medium to Large Size Projects

#### **Piggybacking on Existing Contract (Piggyback).**

In the public sector, an agency can streamline its competitive award process, if its policies and procedures allow, to use a qualified competitive contract from another public agency that includes a “piggyback clause.” In this case, a lead agency includes a condition, or clause, in the original bid documents to allow for others to piggyback and it is incorporated into the final contract. The follow-on agency “piggybacks” by using the same contractor, items and unit costs set out in the original contract. An agency comes up with the quantities to match its needs. Agencies that are piggybacking cannot add new items to the contract, but they can take advantage of using the original contract items. It can pick and choose what is relevant for their project.

**Cooperative Procurement (Co-Op).** In accordance with Government Code 6502 et seq., within the Joint Exercise of Power Act, any two or more public agencies can create a legal entity called a Joint Powers Authority (JPA) that allows all members to jointly exercise each other’s powers. This code is designed to help public agencies develop a joint approach to a common problem, such as cooperative purchasing. JPA have the ability to award indefinite quantity contracts via a formal competitive process on behalf of all its members. By joining the JPA, agencies gain access to those contracts and avoid the need for their own individual competitive process but more importantly, the agencies experience the benefits gained from the economies of the scale of these contracts.

**Competitive Bidding.** In accordance with Public Contract Code Section 20160 et seq., agencies are required to follow a segmented, transparent and sequential process to procure construction services. The process entails preparing detailed plans and specifications, developing a bid package; advertising the project opportunity, receiving and evaluating bids

and selecting the lowest, responsive and responsible bidder. A suitable option for complex projects where design and engineering is separated from project implementation, this design-bid-build approach requires more experience by the agency and can be staff-intensive as well as a lengthy process.

**Job Order Contract (JOC).** Agencies can select JOC as a means of completing energy projects. JOCs are commonly used as a means to do facility repair, alteration, and minor new construction projects. JOC is a proven procurement option that enables agencies to implement numerous projects via individual “job orders” based on a master indefinite quantity contract that has been competitively bid and awarded. JOC can either be line items defined by the agency where the contractor bids unit prices and the job orders define the quantities for individual projects or it can be a list of customized, pre-priced construction tasks/materials that describe the work where the contractor bids using a multiplier for all task/material prices set out in the contract. Then the agency issues a job order which defines the final scope and pricing and is based on the contractor’s multiplier. This procurement option is suitable for larger entities with high volume of work.

**Energy Service Contracts.** In accordance with California Government Code 4217.10 et seq., the formal competitive bidding process can be bypassed by demonstrating an energy efficiency project is budget neutral (over the life of the project) and providing the appropriate public notice before contracting with a provider. Two paths are typically used within this option. The first involves a scope that may extend across multiple projects, be more comprehensive and require no upfront capital. The second has a much narrower scope.

(1) Energy Services Companies (ESCO): An option for agencies is to directly hire a company of its choice that uses guaranteed cost savings from reduced energy and maintenance and operations costs to fund the project, and achieve a budget neutral condition. Financing is typically included to provide the benefit of



requiring no upfront capital to the agency. Additionally, there's a guarantee of savings option. In this option, it is important to have an iron-clad agreement in place that protects the agency's interest.

(2) Competitive Request for Proposals (RFP): Another option for the agency is to prepare a scope of work and request proposals from qualified firms based on that scope. Under Government Code 4217.12, the only caveat is that "the anticipated cost to the public agency be less than the anticipated marginal cost of thermal, electrical, or other energy that would have been consumed by the public agency in the absence of those purchases." In this case, the agency has more control over the scope and can evaluate various firms.

Energy efficiency utility programs can provide invaluable support to ensure the right procurement option is selected. Support includes educating and training agency staff on the available procurement options and application requirements. Agency staff that is new to procurement may not have the confidence to implement these strategies, and it is up to the program implementer to fill that gap. It is also important for agency staff to understand what success looks like on a project-by-project level. A successful procurement pathway is one where the staff has confidence and proficiency in the path that has been selected. It is also flexible and adaptable to account for variations in project scope. Moreover, an effective procurement strategy is one that questions the status quo on previous projects and seeks out a pathway that best suits the agency's goals.

### *3.3 Implement Procurement Checklist*

Once an agency has chosen a procurement path, a project's goals are best achieved by using a checklist of critical success criteria. A checklist will ensure the project is kept on track, mitigate risks, and increase the chance of success. This is necessary to success because while an agency can select the appropriate procurement path, it does not guarantee that path will be executed as envisioned. A procurement checklist not only acts as a

"to-do" list for the agency, but also provides the best opportunity for an effective program implementer to offer tools and resources to aid and further streamline the process for agencies.

#### 3.3.1 Top 5 Success Criteria to Effectively Secure Energy Savings

##### (1) Understand the Project's Energy Efficiency Measures

It is possible that the audit or initial project feasibility analysis sets certain expectations with stakeholders when they approved it. The project's cost savings and other benefits will be carefully evaluated and the faith of future funding and staffing support may be anchored to the success of the project. Whether agencies are in fact using an energy efficiency retrofit to advance greater sustainability agendas or maximizing resources by renovating equipment, the energy project manager must start by understanding the efficiency measures and the utility programs that will provide resources to make them happen.

- Review utility program requirements and deadlines;
- Understand savings modeling criteria and the assumptions predicting project performance.

##### (2) Have a Project Procurement Strategy

Ultimately, it is up to the agency to select a procurement path. The selection should be made for each individual project. Considerations include the project size and complexity, the team's availability and capabilities, availability of project funding, and schedule or time constraints the agency may have. Programs should act as an objective advisor and help to evaluate the pros and cons for each option. A successful procurement strategy must therefore be flexible and adaptable to account for the unique characteristics of each project.

- Evaluate the project's team, internal staffing capacity and capabilities based on previous projects;
- Work with the legal team to understand project and agency's specific procurement requirements;
- Review audit assumptions made in cost estimating



and installation needs;

- Identify all eligible procurement options and choose pathway.

(3) Develop a Detailed Scope with Performance Specifications

An energy efficiency project is designed to optimize the way equipment and systems operate, to perform the desired function without wasting energy and in a way that extends the life of the equipment. All of this while building occupants enjoy the space and without complicating the life of building operators. The checklist items below ensure that the scope of the project aligns with the audit and/or expected project performance.

- Include clear and detailed description of the energy efficiency measures;
- Include technical and performance specifications, as well as defined and vetted control settings and sequence of operations where applicable, for each measure;
- Include all utility program requirements;
- Include training and adequate commissioning for a successful project close-out and persistent savings.

(4) Participate in the Job Walk with Key Stakeholders and Look to Support the Agency/Contractor Relationship

Critical to the success of the project is the agency bringing stakeholders together to walk the site and see the existing conditions. A job walk is essential to avoid communication problems and ill-informed assumptions. The contractor and other stakeholders must see and commit to the vision by asking questions and sharing insights based on their experience. This will help establish a partnership between agency and contractor.

- With the support of program implementer, agency to address questions and concerns from contractor; change the scope if needed;
- Agency obtains contractor buy-in to utility program participation and requirements;
- Agency to explore best value options with the

contractor and installation best practices.

(5) Assist the Agency in Confirming the Contract Agreement Sets Up the Project for Success

Trust but verify. Don't wait for surprises during project implementation. Making changes post award of contract is costly and time consuming, it is therefore advisable to assist the agency in reviewing and confirming the final scope and contract language supports the project and provides what is needed to realize the expected outcome.

- Evaluate final proposed equipment specifications vs. utility requirements;
- Ensure the project installation schedule, including submittal review and equipment lead time, meets utility application deadlines;
- Include project closeout and utility program requirements (i.e. invoicing).

It is important to note that educating and training agency staff prior to starting procurement will only benefit the project. After a project team has completed procurement for a project, the team should incorporate lessons learned and work to improve how the team addresses procurement for future projects.

This concludes the procurement strategy and its three guiding principles: stakeholder engagement and communication, the evaluation of procurement options and the checklist to ensure smooth execution. Implementers can design programs to support agencies with these guidelines and ensure project results are maximized.

#### **4. Realizing Positive Benefits for the Project and Agency**

Developing a procurement approach for the public sector can provide positive impacts. Foremost, a successful procurement strategy can help "unleash" the potential energy savings that are identified through audits, but remain hidden behind the procurement barrier. This additional investment to provide procurement services translates into a higher assurance that initial project investments result in a completed

project. Maximizing projects completed increases energy savings, which not only provides great benefit to the public agency and the communities they serve, but also makes a positive impact towards State efficiency and greenhouse gas reduction goals.

The procurement strategy presented also builds the knowledge and expertise of energy project managers, giving them more confidence and resources when moving forward on future programs. A primary goal of energy programs should be to educate agencies to lead successful energy projects more independently. This will help programs reach their claimed savings goals faster and more cost-effectively. Energy efficiency projects have also helped contribute to workforce development through economic growth and job creation. For example, the SoCalREN Public Agency Program has led to an estimated \$56 million in construction value and created over 600 jobs. This can act as a way for public and private sector groups to highlight contributions they add to their community.

## 5. Conclusion

Procurement can be a difficult process that can inhibit energy efficiency projects in both the private and public sector. Fortunately, energy efficiency program administrators and implementers can provide valuable support for those working on energy efficiency projects. This paper shares best practices and outlines a procurement strategy for the public sector designed to address barriers and help projects make it to the finish line in a timely and efficient manner. The results of successful procurement help maximize energy efficiency projects to their full savings potential.

While the focus of this strategy has been on energy efficiency and the public sector in California, it can be translated for other project types, such as water efficiency and solar projects, and other customer segments, such as industrial and commercial outside of California as well.

There is no perfect procurement strategy that holds true for all project types. Rather, it takes a flexible and adaptable approach to allow for a project team to craft the best path for addressing procurement. There are always areas to improve and to strengthen the success of a procurement approach. With better procurement strategies in place there will be fewer barriers for private and public utility customers to pursue energy efficiency projects, which can greatly help efforts to reduce greenhouse gas emissions and protect our environment.

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