U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

An Ally in Your Corner: Benefits of Using Owner's Representatives

Energy savings performance contracting (ESPC) is a proven strategy for state and local governments to achieve significant energy and cost savings—10 states deemed "Energy Stewardship Champions"[1] have cumulatively saved an estimated 62 trillion Btus of energy and $7.4 billion dollars from ESPC projects as of 2019.[2] While ESPC programs can have a big impact, they are also complex and can be challenging for a new customer. To minimize risks and help ensure project success, many state ESPC program administrators recommend or require the use of third-party technical consultants, or "owner's representatives," for ESPC implemented in Municipal and State Governments, Universities and Colleges, Schools, and Hospitals (MUSH) market facilities. In fact, 90% of ESPC programs in Energy Stewardship Champion states provide technical project oversight to program participants—a best practice contributing to the success of these state programs.[3]

Purpose of This Document and Intended Audience

This short guide provides prospective ESPC customers with key considerations for retaining an owner's representative ("owner's rep"), specifically regarding recommended areas of competency and qualifications. It also provides a summary of resources to help with finding or soliciting owner's rep services. This information may also be valuable for ESPC program administrators considering how to promote the use of owner's reps for projects in their state.

Business Case for Retaining an Owner's Rep: A State Capitol Project Saved $250,000 on Equipment

- Project description: A state capitol complex in the Northeast with upgrades to lighting, HVAC controls, and central plant upgrades and controls.
- Project Value: $5.9 million
- Guaranteed Annual Savings: $525,000
- Performance Period: 13 years
- M&V Methods: IPMVP Options A and B[4]
- Owner's Representative Benefit Included: $250,000 savings to the state

The ESCO proposed removing an 8-year-old controls system and replacing it with their building automation system, which would cost $300,000 to be installed. The owner's rep used its in-house controls expertise to determine that the existing system could be effectively retro-commissioned at a cost of $50,000, so the state saw a $250,000 reduction of the total ESPC project costs. The retro-commissioned system saved nearly the same amount of energy as the proposed new system and the owner was happy with the results of the energy conservation measure.

Benefits of an Owner's Representative[4]

While ESPC is a proven mechanism for achieving energy and cost savings, challenges can arise when there is a lack of clear communication between the customer and their energy services company (ESCO). Customer risks in ESPC include: the risk of legal dispute, typically due to poor communication; lack of clear roles and responsibilities, which can impact ESCO accountability; inaccurate assumptions about future energy costs, which can falsely inflate customer-projected savings; inaccurate baseline calculations and other engineering errors; poor measurement and verification (M&V), which can result in the inability to detect and assign responsibility for savings shortfalls; and poor commissioning, which can result in operational and comfort issues as well as savings shortfalls. Experienced owner's reps are aware of these risks and can protect customers' interests, with impressive results in terms of functionality, dispute avoidance, and cost savings. For example, owner's reps can be integral to ensuring M&V is planned and conducted properly, increasing the value of the project. Annual M&V costs typically represent about 2%–3% of the project annual savings, but in projects where it is effectively done, it helps owners avoid or mitigate savings shortfalls and can also verify when savings have exceeded the guarantee. For example, in a set of 178 federal projects reviewed, M&V costs were roughly 2% of the total guaranteed costs savings, but helped to validate approximately 107% of the guaranteed cost savings (i.e., the guaranteed cost savings were exceeded by approximately 7%).[5]

[1] From 2016 through 2018, the Energy Services Coalition conducted a review of 34 ESPC programs nationwide and presented awards to the top 10 outstanding programs deemed Energy Stewardship Champions. For more information, visit: https://energyservicescoalition.org/Data/Sites/1/documents/resources/needs-assessment-analysis-of-relationship-between-key-attributes-and-state-success-2018.pdf.

[2] The Energy Services Coalition estimated this total based on information reported by states. More detail is available here: https://www.energyservicescoalition.org/espc/table. 62 trillion Btus refers to the total estimated savings from the Energy Steward Champions.

[3] Energy Services Coalition, https://energyservicescoalition.org/Data/Sites/1/documents/resources/needs-assessment-analysis-of-relationship-between-key-attributes-and-state-success-2018.pdf.

[4] IPMVP stands for International Performance Measurement and Verification Protocols. For more information, visit: https://evo-world.org/en/products-services-mainmenu-en/protocols/ipmvp. Also see: https://www.energy.gov/sites/prod/files/2016/01/f28/mv_guide_4_0.pdf.

[5] The Business Case for Conducting M&V in State and Local Government ESPC Projects: https://www.energy.gov/eere/slsc/downloads/business-case-conducting-measurement-and-verification-state-and-local-government.

Owner's Representative Roles and Responsibilities

An experienced owner's rep can provide vital expertise in each phase of an ESPC project. Key roles include: supporting the customer in selecting its ESCO; facilitating an understanding of the ESCO pricing and guarantee;[6] acting as a critical communication liaison between customer stakeholders and the ESCO; delineating risks and responsibilities of both parties; and reviewing and advising on ESCO engineering studies, financial proformas, M&V plans, and more.

Third-party technical expertise can range from a small engineering firm or a university engineering department contracted to review the investment-grade audit (IGA), to a full-service owner's rep firm that consults through all phases of ESPC. The role of the owner's rep is to advocate for the facility owner in the various aspects of ESPC procurement and project development, while also providing a reality check to make sure that the customer's requests are not unrealistic. This can ensure the ESCO will not abandon the opportunity or overpromise and be unable to meet contractual obligations.

Owner's rep services should be tailored to the needs of the project, to fill roles that the facility owner or state ESPC program may not have the expertise to cover.[7] Even where state or local agency staff have ESPC experience and technical capacity, owner's reps are frequently brought in to supplement staff expertise in key areas. ESPC customers wishing to learn more about working with owner's reps may find it useful to review materials from state ESPC programs that are tailored to assist facility owners with conducting requests for proposals (RFPs) for owner's rep service, or that provide prequalified lists of owner's reps. In the federal sector, the Federal Energy Management Program (FEMP) requires that agencies retain qualified third-party ESPC consultants equivalent to owner's reps, which they refer to as project facilitators (PFs), in addition to consulting with several regional ESPC specialists, who oversee federal projects. FEMP provides a list of prequalified PFs, which includes companies that serve both the federal and state/local sectors. In its guidance to agencies, FEMP explicitly notes that the unique nature of ESPC is unlike other types of projects, such that even seasoned energy professionals must be groomed to obtain specific expertise with ESPC before getting their PF designation. In addition, FEMP has launched the Performance Contracting National Resource Center (PCNRC),[8] and is developing an owner's rep certificate program, with the intention of providing a fundamental framework of knowledge, skills, and resources needed to be an owner's rep. See Table 3 for information on prequalified owner's reps, soliciting an owner's rep, ESPC best practices for third-party expertise, and the forthcoming PCNRC owner's rep certificate program. Finally, owner's rep costs vary based on the type and level of support for a given project or program.[9]

Table 1 summarizes the key areas of competency offered by full-service owner's reps for the various stages of ESPC. The table provides examples of owner's rep services for each area of competency.

Business Case for Retaining an Owner's Rep: A University Saved $350,000 With One Day of Negotiation

- Project description: A university in the Southeast with lighting upgrades, water conservation, retro-commissioning, comprehensive direct digital controls (DDC) upgrades to multiple buildings, HVAC upgrades, and a central plant upgrade.
- Project Value: $5.5 million
- Guaranteed Annual Savings: $441,000
- Performance Period: 17 years
- M&V Methods: IPMVP Options A and B
- Owner's Representative Benefit Included: $350,000 savings to the university

The owner's rep reviewed the ESCO's engineering studies and final proposal documents in great detail and discovered the ESCO overlooked a number of issues that would have significantly increased charges to the customer, and identified several places in the project proposal where the customer could save significant funds. The owner's rep negotiated with the ESCO for one day, yielding a $350,000 reduction in project costs for the university.

[6] For more information on ESPC guarantees, access Understanding Your ESPC Savings Guarantee: https://www.energy.gov/eere/slsc/downloads/understanding-your-espc-savings-guarantee.

[7] In many states, state ESPC program staff are available to provide some or all of the services described here. For examples of how state ESPC programs fund and deliver technical assistance to customers, see NASEO's report, "State Funding of Technical Assistance for Guaranteed Energy Savings Performance Contracts: Case Studies of Best Practices," March 2020: https://www.naseo.org/data/sites/1/documents/publications/GESPC%20Case%20Studies.pdf.

[8] For more information, visit https://www.energy.gov/eere/femp/performance-contracting-national-resource-center.

[9] For example, although not an independent owner's representative, the State of Kansas Facility Conservation Improvement Program https://kcc.ks.gov/images/PDFs/kansas-energy-office/fcip/FCIP_2pageBrochure_2016.pdf provides the type of support an owner's rep provides and has a tiered cost approach (i.e., fees are based on overall project cost and range from 4% on the smallest projects to just over 0.5% on the largest projects). Owner's rep fees may be charged in various ways, including a similar tiered approach, or a flat rate for set services, or on an hourly basis.

Table 1. Owner's Representative Competencies

ESPC Phase	Examples of Services Provided by Owner's Reps						
Areas of Competency	**Deep Knowledge of ESPC Processes**	**Project Management**	**Financial Management**	**Contracts, Negotiation**	**Energy Engineering and Building Modeling**	**Knowledge of Government Processes and Programs[10]**	**Risk**
General—Getting Started and Throughout Project	Build project team.	Establish roles, responsibilities, milestones, and communication protocols for owner, ESCO, and other stakeholders.	Understand customer's financial and budgeting processes to help keep project in compliance.	Help owner understand language, potential risks, and ramifications of proposals, contracts, and other documents.	Provide owner with checklists of building information to collect and prepare for RFP.	Help owner develop stakeholder engagement plan; determine who at owner's organization should attend which review meetings.	Educate owner on risks and potential issues throughout project; advocate for the facility owner's needs; help set expectations for the owner.
Scope Project, Develop RFP	Understand and document owner needs, help owner define objectives; draft scope of work for RFP; advise owner regarding what to focus on in choosing an ESCO; advise on ESCO selection.	Manage or advise on RFP process, kickoff meeting and ESCO facility tours; participate in reviews.	Review savings projections in RFP responses; assess feasibility of achieving savings and costs.	Assist owner with RFP language, which will have a bearing on the IGA and energy services contract language.	Review facility and baseline information[11] needed for RFP.	Help owner with communication and stakeholder engagement within/across agency or state departments.	Ensure project abides by statutory and programmatic guidance.
IGA, M&V Plan	Guide preparation of IGA scope of work; participate in periodic IGA meetings; perform detailed analyses of IGA content.	Lead communication and tracking to help ESCO and owner stay on agreed-upon schedule; evaluate proposals, commissioning, and M&V plans.	Review and advise on reasonability of draft financial prospectus on project capitalization, including construction, interest, and principal payments.	Assist owner with negotiating price, scope, and schedule of IGA.	Review engineering assumptions; verify baselines; independently run ESCO energy models; review M&V plans for clear, measurable methodologies.	Assure required reviews and approvals are completed by the necessary parties.	Track issues and potential risks; ensure the ability to detect and assign responsibility for shortfalls is included in M&V plan; flag inaccurate baseline calculations and other engineering errors.
Project Proposal and Contract	Assure responsibilities and costs of owner O&M are explicitly and accurately specified in proposal and contract.	Lead communication and project development tracking to help avoid disputes and costly delays.	Review final financial prospectus.	Assist with negotiation of final contract.	Review project design, installation plans, O&M, and training plans for compliance with the IGA; inspect/troubleshoot M&V monitoring plan.	Assist customer's "project champion(s)" with stakeholder approvals.	Assure party responsibilities and risks are clearly delineated; foresee and mitigate potential legal disputes.
Construction, Verification, Project Acceptance	Assure ESCO prepares/presents appropriate series of custom training for owner/facility staff on installed technologies.	Oversee or review ESCO construction management; track work progress; report potential issues; facilitate communication between ESCO and owner.	Support invoice and cost documentation review.	Assist owner with any negotiations required for project acceptance.	Review post-installation commissioning and M&V reports; assist owner with various aspects of project acceptance and clarity with warranty start/stop dates and responsibilities.	Assure any required reviews and approvals are completed by the necessary parties.	Assist owner in holding ESCOs accountable for stated responsibilities; ensure effective commissioning.

[10] Experienced owner's reps should have knowledge of general government processes and regulations to help the owner effectively engage relevant stakeholders and minimize project barriers. In addition, they should be familiar with the relevant state-specific ESPC and procurement statutes and available energy efficiency and renewable energy project regulations and incentive programs.

[11] Facility and baseline information can include: original construction dates, additions, square footage, number and location of utility meters, rate tariffs, schematics, equipment lists, deferred maintenance lists, known concerns and hazards, recent engineering or energy studies, occupancy schedules, indoor temperature and humidity requirements, lighting requirements, issues with data collection (e.g., bad loggers); issues with building blueprints or plans where information is not available and must be assumed; any technical errors in modeling assumptions or calculations (e.g., does the window R-value match the physical description).

Owner's Representative Qualifications

A number of state energy offices provide guidance or requirements surrounding qualifying owner's reps for ESPC. Table 2 summarizes areas of qualification for owner's rep firms found in actual RFPs for the job and related ESPC guidance documents. The table also includes qualification information for FEMP PFs (see above). In general, the most important qualification is significant experience with key aspects of ESPC. Qualifications also include certifications, demonstrated knowledge of financial and legal principles, government processes, and the specific building owner's applicable policies (such as relevant state laws and regulations).

Table 2. Qualifications for Owner's Representative Firms

Areas of Qualification	Key Qualifications
ESPC Experience	Experience is generally considered the most important qualification. One state agency request for qualifications (RFQ) specifies a minimum of 5 years of experience, another three, in providing professional consulting for ESPC, including but not limited to ESCO RFP/selection; IGA preparation and review; baseline data review; M&V plans and reports; contract negotiation; post-installation report review; and M&V report review. FEMP specifies that a qualified PF must have spent at least 10% of prior year's work time on ESPC projects or shadowing a qualified PF for one entire ESPC project through construction.
Certification	Some states request one or more of the following qualifications for owner's representative firms: 1. At least one professional engineer (PE) on the project team licensed in the same state as the project or one certified energy manager (CEM) on staff 2. At least one architect or engineer on the project team who is (i) licensed in the state and (ii) experienced in design, implementation, and installation of energy efficiency measures 3. At least one certified measurement and verification professional (CMVP) on the project team. FEMP PF requirements include: PE or CEM, or related experience and continuing education (e.g., FEMP ESPC workshop, M&V training).
Government Regulations and Processes	Familiarity with specific statutes, codes, rules, practices, and processes governing the particular customer organization and its ESPC procurement processes; demonstrated knowledge of governmental review and decision-making processes for the customer type (e.g., state agency, municipality, K-12 school) and specific customer organization.
Agency-Specific Tools	Knowledge of and experience with tools and resources used or required by the customer. FEMP requires in-depth familiarity with its technical and financial analysis tools used in project reviews (e.g., eProject Builder and the Energy Escalation Rate Calculator, project tracking and escalation rate-setting software, respectively).
Contracts and Negotiation	Demonstrated competency reading and writing contracts; familiarity with legal language; strong people and negotiating skills; respectful, professional relationships with the ESCO community.
Construction Management	Demonstrated knowledge of the construction process, along with construction and project management. Knowledge of energy efficiency project design; ability to review/understand drawings; ability to understand required level of, and approach to, maintenance for the project design.
Project and Financial Management	Demonstrated minimum level of fiscal and programmatic management and controls competency; demonstrated understanding of state-required regulations regarding project procurement, cash management and fiscal/programmatic reporting, in order to support owner doing so properly. Financial and technical capability verified through information such as Dun and Bradstreet number.
Building and Energy Engineering	Building and energy systems engineering analysis experience including energy auditing, lighting, HVAC, controls assessment, commissioning, retro-commissioning, M&V, and utility rate analysis; technical knowledge about specific equipment being installed; computer modeling expertise.

Resources

Table 3 provides a list of available resources pertaining to retaining owner's reps.

Table 3. Resources Pertaining to Owner's Representatives

Resource	Details	Location/URL
North Carolina ESPC Better Practices	North Carolina's ESPC program requires third-party review of M&V documents and recommends third-party involvement with the IGA.	https://bit.ly/2LmhK7m
Example RFQ for Third-Party ESPC Consulting Services	RFQ for Third-Party Consulting Services for Energy Saving Performance Contract, Yadkin County Government and Public Schools (North Carolina).	https://www.yadkincountync.gov/DocumentCenter/View/2374/RFQ-for-Third-Party-Consulting-Services-For-Energy-Savings-Performance-Contract?bidId=
FEMP List of Qualified Project Facilitators	Some of the listed project facilitators work in the state and local sectors as well.	https://www.energy.gov/eere/femp/federal-project-facilitators
FEMP Project Facilitators Guidance	Includes information about how federal PFs are qualified and trained.	https://www.energy.gov/eere/femp/project-facilitators-federal-espc-uesc-and-espc-enable-projects
DOE Example RFP and Contract for Project Facilitators	DOE resource on developing a state-level ESPC program that includes an appendix (B3) on "RFP and Contract for Project Facilitators." Appendix provides a sample RFP and contract to solicit a project facilitator adapted from an RFP issued in 2012 by the State of Louisiana's Department of Administration.	https://www.energy.gov/sites/default/files/2016/04/f30/Appendix%20B%20-%20ESPC%20Program%20Overview_27Apr16_FINAL.pdf
DOE Project Facilitator Training	On-demand training, "Project Facilitator Fundamentals," offered by DOE Whole Building Design Guide; provides Continuing Education Units.	https://www.wbdg.org/continuing-education/femp-courses/fempodw018
PCNRC	Congressionally directed initiative to provide expertise to state and local governments to facilitate the expansion of ESPC nationwide. PCNRC will provide technical assistance and financial expertise resources, including a training certificate series to instruct prospective owner's reps on the knowledge and skills needed to properly execute their role on ESPC projects. This is a collaborative effort between FEMP and DOE's Weatherization and Intergovernmental Programs Office (WIP).	https://www.energy.gov/eere/femp/performance-contracting-national-resource-center
U.S. DOE Guidelines for Developing, Staffing, and Overseeing a State ESPC Program	DOE resource on developing a state-level ESPC program that includes an appendix on "Overseeing a Project," featuring a list of potential tasks and sample RFPs and contracts for third-party technical assistance support, among other resources.	https://www.energy.gov/sites/default/files/2016/04/f30/Appendix%20E%20-%20Overseeing%20a%20Project_27Apr16_FINAL.pdf

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