

# CORPORATE OVERVIEW



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# About Us

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The information provided in this statement of qualifications demonstrates the experience and capabilities of Energy & Resource Solutions (ERS) in delivering a wide range of energy related consulting services.

## CORPORATE QUALIFICATIONS

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ERS is an energy and engineering consulting firm that was founded in 1995 to provide technical consulting services aimed at maximizing energy efficiency and clean energy solutions. ERS employs over 90 professionals – engineers, certified energy managers (CEMs), LEED-accredited professionals, policy experts, and energy consultants – who are all dedicated to delivering high-quality, actionable results.

Based in North Andover, Massachusetts, with offices located across the country, ERS serves clients nationally and internationally, providing services in energy efficiency program design, customer engagement and outreach activities, implementation, evaluation, both pre- and post-installation measurement and verification, custom feasibility studies, distributed and renewable generation assessment, and sustainable building development.

Our staff members have been involved in some of the largest and most innovative programs, energy projects, and research studies addressing resource conservation in the United States. Our clients include electric and natural gas utilities, regulatory authorities, federal and state government offices, and Fortune 500 companies, and we have been responsible for comprehensive resource engineering projects in hundreds of facilities nationwide.

As a trusted advisor to large end users and the most prominent efficiency programs in the industry, we bring strong technical discipline, wide-ranging experience, and a spirit of innovation to all that we do. Our solutions help improve efficiency, maximize economic competitiveness, and minimize environmental impacts.



## OUR MISSION

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We aim to find the optimal balance of resource efficiency, economic prosperity, and productive business operations. We believe pursuit of this goal starts with helping our clients reach their own objectives by providing them with our analytical expertise and our ability to think creatively and accomplish tasks in an optimal way. Simply said, we are seekers, thinkers, doers, and teachers.

# ENERGY EFFICIENCY PROGRAM DEVELOPMENT AND IMPLEMENTATION

ERS plays a leading role in many projects associated with the design and delivery of some of the largest demand-side management programs in the US. We have considerable expertise in program planning, development, administration, implementation, quality control, and monitoring, and we deliver a full suite of implementation and load management program support services. We provide specialized services to clients as well, including commissioning services, marketing research, graphical information system (GIS) mapping to optimize program outreach, on-site verification of savings, technical training, and program promotion. ERS has delivered solutions across a range of program types, from traditional resource acquisition programs to multi-technology demand management programs.

## REPRESENTATIVE PROJECTS

ERS has more than 20 ongoing and recently completed implementation projects, and we continue to expand our service offerings. The following projects provide a snapshot and demonstrate the diversity of our service offerings.



### **SILICON VALLEY POWER** ENERGY EFFICIENCY PROGRAM

ERS manages and implements commercial and industrial energy efficiency programs for the City of Santa Clara's electric utility, Silicon Valley Power (SVP). Our efforts involve a wide range of services, including program outreach, project development, customer assistance, trade ally network management, rebate processing, and program tracking and reporting. Through our innovative pay for performance program design, we have helped SVP become an industry leader and home to the most efficient data centers in the country.



### **CMUA** TECHNICAL REFERENCE MANUAL

ERS is a trusted advisor for CMUA, NCPA, and SCPA utility members, as demonstrated in our development of a savings estimation technical reference manual. The manual is used for regulatory compliance reporting and helps demonstrate how publicly owned utilities (POUs) collaborate to consistently and transparently calculate program energy savings. ERS provides ongoing support and technical expertise and is currently working with the joint agencies to develop program best practices that will further demonstrate the California POU commitment to achieving state energy policy goals for efficiency and carbon emission reductions.



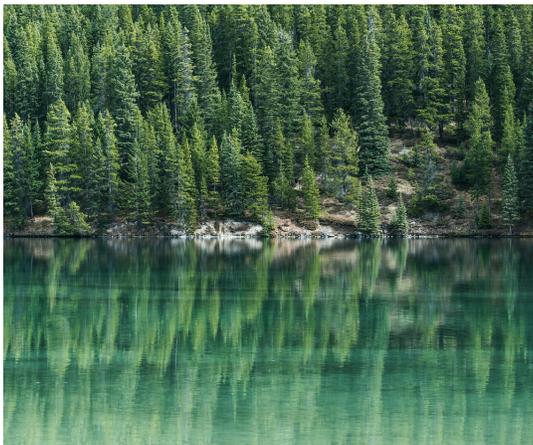
## **MASSACHUSETTS DEPARTMENT OF ENERGY RESOURCES** ENERGY CODE TRAINING

ERS collaborated with its partners to develop and deliver a training program for building code officials and design professionals that addresses the commercial sector provisions of the state building energy and stretch codes. The course includes basic building science and energy use in buildings, as well as detailed instructions on the use and interpretation of code requirements for electrical, lighting, mechanical, and HVAC systems.

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## **CITY OF REDDING ELECTRIC UTILITY** INTEGRATED RESOURCE PLANNING

ERS is assisting the Redding Electric Utility (REU) with integrating its energy efficiency and demand side management programs into its overall energy portfolio. This integrated approach is consistent with state legislative and regulatory policy, which includes the development of a best-fit, least-cost energy supply resource plan that integrates preferred resources such as energy efficiency, renewables, energy storage, demand response, and distributed energy resources. ERS analyzed REU's energy efficiency programs and provided recommendations for optimizing its program portfolio. We also provided 10-year forecasts of cumulative energy savings for energy resource planning.



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## **EFFICIENCY MAINE** ENERGY EFFICIENCY PROGRAM IMPLEMENTATION

ERS implemented the state of Maine's energy efficiency programs by working with the Efficiency Maine Trust and a team of subcontractors to design and develop technical assistance and efficiency incentives programs. ERS continues to support Efficiency Maine and serves as the Technical Advisor for all projects.

# TECHNICAL ASSISTANCE AND ENGINEERING SERVICES

ERS offers a broad range of engineering expertise to help utilities, energy agencies, and facility operators to implement cost-effective energy solutions. We excel at providing technical expertise and quality assurance, along with enabling utility program administrators to be trusted advisors for their most valued customers. We have completed numerous energy efficiency projects addressing a multitude of systems and technologies, including building lighting, HVAC, process controls, and distributed energy resources. ERS has developed database analysis tools for estimating the impacts of energy saving projects. Our data analytic solutions include the latest visualization tools, such as Tableau and Python.

## REPRESENTATIVE PROJECTS

The following project briefs demonstrate our broad range of technical expertise and service offerings.



### CON EDISON BROOKLYN QUEENS DEMAND MANAGEMENT (BQDM)

ERS is providing technical assistance and field measurement services to quantify 52 MW of potential peak demand savings. Con Edison of New York is deploying a mix of distributed energy resources, including energy efficiency, to reduce forecasted overloads of two of its substations. ERS measured and verified energy efficiency program impacts at the substation and aggregated energy use data to develop hourly energy savings profiles to inform the utility's energy forecast. ERS conducted field studies at over 700 facilities and analyzed over 4,000 data loggers to develop the hourly savings estimates.

## **NYSERDA** **BATTERY STORAGE STUDY**

For the New York Energy Research and Development Authority (NYSERDA), ERS implemented a battery storage potential assessment as part of New York's Reforming the Energy Vision (REV) to transform electricity markets. ERS examined the current state of battery storage technologies that are feasible in behind-the-meter installations and investigated the associated business and revenue models. ERS identified near-term programmatic opportunities, mid-term regulatory opportunities, and long-term market transformation impacts.

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## **NYSERDA** **CHP OUTREACH**

ERS provides outreach and technical assistance to promote and transform the combined heat and power (CHP) marketplace in New York. ERS developed comprehensive lead generation by leveraging business and building data sets and publicly available benchmarking data to generate data analytic models for targeting customers with the best opportunity to take advantage of on-site CHP systems.



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## **MASSACHUSETTS INSTITUTE OF TECHNOLOGY** **STRATEGIC ENERGY MANAGEMENT**

ERS helped the Massachusetts Institute of Technology (MIT) assess their building stock and establish energy savings targets in order to enter into an agreement with Eversource, formerly NSTAR, to receive incentives for energy efficiency measure implementation. ERS analyzed a variety of building consumption data and then worked with MIT and Eversource to collaboratively establish potential efficiency improvements. A quantified reduction in electrical energy consumption was determined and used to inform a customized incentive structure.

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## **CITY OF PALO ALTO UTILITIES** **TECHNICAL ADVISORY SERVICES**

ERS has provided technical advisory services to the City of Palo Alto Utilities (CPAU) since 2011. CPAU offers a broad portfolio of customer energy efficiency and demand response programs designed to assist all customer groups to achieve savings in electricity and natural gas in a cost-effective manner. ERS provides technical expertise to CPAU staff by conducting measure development, validation of custom energy savings projects, project measurement and verification (M&V), custom energy savings estimate review and approval, rebate application review, energy audits, assessment of emerging technologies, and energy policy advice.

# ENERGY EFFICIENCY PROGRAM EVALUATION

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ERS is a quantitatively motivated firm that provides defensible program evaluation studies through measurement-driven evaluations. Because we are also implementers of efficiency programs, we are able to provide practical recommendations on how to improve future program performance and cost-effectiveness.

Evaluation is one of ERS's core capabilities and represents almost half of our practice. Our quantitative approach provides measurement-driven evaluations that determine energy and demand impacts. We also offer practical recommendations on how to improve future program cost-effectiveness. Our current work includes impact evaluation, best practices reporting, and facilitation of a stakeholder working group to help refine efficiency accounting practices to meet policy requirements. Our evaluation work affords us a detailed understanding of programs, results, and regulatory requirements from around the country. ERS is fully engaged in the new world of EM&V 2.0, including interval metering and big data analysis.

## REPRESENTATIVE PROJECTS

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We are working on or have recently completed more than 30 evaluation projects. Our expertise and experience span all customer types and energy sources. The following projects are representative of the breadth and depth of evaluation services that we provide.



### NORTHERN CALIFORNIA POWER AGENCY EVALUATION SERVICES

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ERS is a preferred evaluation consultant for the Northern California Power Agency (NCPA) and its utility members. The evaluation efforts have included both residential and commercial programs and covered a wide range of program offerings, from LED mailers to data centers. As part of the evaluation, ERS has conducted telephone surveys, online surveys, and on-site data collection. For each effort, ERS produced an evaluation report consistent with regulatory guidelines that provides both gross and net savings, realization rates, and recommendations for program improvements.

**CPUC****INDUSTRIAL, AGRICULTURAL, AND LARGE COMMERCIAL EVALUATION**

ERS has conducted process and impact evaluations for the California Public Utilities Commission (CPUC) since 2008. During the last program cycle, ERS was a lead subcontractor for evaluating the largest and most complex custom projects in the investor-owned utility (IOU) portfolio. ERS conducted over 200 site evaluations – from San Diego military bases to the rice fields in Yolo County – and we assessed projects at data centers, oil fields, refineries, universities, food processors, and manufacturing plants.



**I'VE WORKED WITH A LOT OF CONSULTANTS, AND ERS STOOD OUT BECAUSE OF THEIR CONSISTENTLY HIGH QUALITY WORK. I STARTED MOVING A LOT THEIR WAY BECAUSE I KNEW THE WORK WOULD BE DONE RIGHT.**

**CON EDISON****PROCESS EVALUATION**

As the prime contractor, ERS leads a multimillion, portfolio-wide process evaluation spanning 10 utility energy efficiency programs for Con Edison. The evaluation provided strategic input and guidance on how to reshape the portfolio to better align them with the objectives of New York State's REV initiative.

**NEW JERSEY CLEAN ENERGY PROGRAM****PROCESS EVALUATION AND BENCHMARKING**

ERS conducted a process evaluation of New Jersey Clean Energy Program (NJCEP) efficiency programs on behalf of the New Jersey Board of Public Utilities and Rutgers University. This process evaluation is follow-on work from a benchmarking study conducted by ERS. The process evaluation involved interviews with program staff and stakeholders, large-scale surveys of both residential and commercial/industrial participants and nonparticipants, a market penetration analysis, and additional comparative research and analysis to answer specific questions about the portfolio.

**VERMONT DEPARTMENT OF PUBLIC SERVICE****FORWARD CAPACITY MARKET IMPACT EVALUATION**

ERS works with four subcontractors to assess the impact of Efficiency Vermont's and Burlington Electric Department's commercial and industrial energy efficiency programs. The evaluation scope includes verifying the energy impacts and calculating the forward capacity market's (FCM's) peak demand impacts. The FCM component of this evaluation includes metering, analysis, and reporting that is compliant with the ISO-NE measurement and verification guidelines.

# SUSTAINABLE DEVELOPMENT

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ERS is a recognized leader in high performance and green building development and a thought leader in the application of the latest technologies, and we apply a broad range of sustainable design and green building expertise to our projects.

Our engineers stay abreast of the latest technologies and system design trends, and they conduct energy code compliant training, author energy manuals, and develop cutting edge energy systems.

## REPRESENTATIVE PROJECTS

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The following projects represent the growing services we provide in support of community and business sustainability initiatives.



### **NYSERDA** DEEP SAVINGS AND NET ZERO ENERGY

ERS performed a market and opportunity assessment of deep savings projects and net zero energy buildings for NYSERDA. Our study examined these concepts in nonresidential applications for both new construction and existing buildings. The research focused on offices and retail and educational facilities, and we developed a conceptual framework that served as a foundation for subsequent research and analysis.

## **NORTHEAST ENERGY EFFICIENCY PARTNERSHIP (NEEP) HIGH PERFORMANCE BUILDING PROTOCOLS**

Working with the Northeast Energy Efficiency Partnership (NEEP) and the New England High Performance Schools Collaborative, ERS developed the design, construction, and maintenance protocol this used throughout the New England states as the criteria for high performance school construction programs. The protocol established the minimum common requirements that need to be met, but it is designed to be flexible around the needs of the individual state.

## **STEINWAY & SONS ENERGY STUDY AND SOLAR THERMAL SYSTEM**

ERS conducted a comprehensive energy study of Steinway Piano's manufacturing facility in Queens and its renowned showroom in Manhattan. As a follow-on to the study, ERS developed and managed the installation of a state-of-the-art dust collection system and solar-thermal system that dehumidified specific areas in the manufacturing process. The solar-thermal system is the first and largest of its kind in an industrial setting.

## **STATE OF MASSACHUSETTS GREEN COMMUNITIES ACT TECHNICAL ASSISTANCE**

ERS was the commercial and industrial sector energy consultant on a team supporting the Massachusetts municipalities as they considered and assessed options to become registered as a Massachusetts Green Community. Qualification involved adopting the new stretch code, enhancing energy efficiency for municipal buildings, establishing provisions for easier siting of renewable energy facilities, and accepting higher efficiency standards for municipal fleets.

## **MASSACHUSETTS CLEAN ENERGY CENTER SOLAR ENERGY AND ENERGY STORAGE SYSTEMS**

ERS is an approved firm for performing assessments of manufacturing sites in Massachusetts surrounding the technical and financial viability of installing solar electric energy systems coupled with energy storage systems. ERS conducts facility assessments, analyzes energy costs and end-use profiles, assesses the technical and financial viability of installing solar plus energy storage, and provides recommendations to customers and to the Massachusetts Clean Energy Center (MassCEC).



**I DO AS MUCH BUSINESS AS I CAN WITH ERS. THEY ARE BRIGHT, TECHNICALLY COMPETENT, FUN TO WORK WITH, CUSTOMER FOCUSED, CUSTOMER SENSITIVE, AND WILLING TO BE CREATIVE AND STRETCH THE ENVELOPE.**





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## CONTACT US

At ERS, energy efficiency is our passion. We are continually leveraging existing and emerging core competencies to empower the energy efficiency industry to build better programs.

ERS is headquartered in North Andover, Massachusetts, with additional offices in California, Connecticut, Maine, New York, Oregon, Texas, Vermont, and Canada.

Call or email us to find out if ERS is a good fit to support your needs.



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