AGREEMENT FOR DEVELOPMENT REIMBURSEMENT SERVICES FOR THE FIREMAIN LINKED AUXILIARY SUPPLY/HYDRAULIC ENERGY STORAGE (FLASHES) HARTLEY 10 MW PROJECT

1. **SERVICES.** Subject to the terms and conditions set forth in this Agreement, Contractor shall provide to County the services described in the Scope of Services attached hereto and incorporated herein as Exhibit A at the time and place and in the manner specified therein. In the event of a conflict in or inconsistency between the terms of this Agreement and Exhibit A – Scope of Services, Exhibit B – Fiscal Provisions, Exhibit C – Compliance Provisions, and Exhibit D – Trane RFQ Response, the Agreement shall prevail.

2. **TERM.** This Agreement shall commence on _____ and continue in full force and effect until terminated as hereinafter provided.

3. **COMPENSATION.** Contractor has been selected by County to provide the services described hereunder in Exhibit "A" (Scope of Services), attached hereto. Compensation to Contractor shall not exceed **One Million One Hundred Thirty-Two Thousand Three Hundred Eighty Dollars ($1,132,380)**.

   The County shall compensate Contractor for services rendered, in accordance with the provisions set forth in Exhibit "B" (Fiscal Provisions), attached hereto, provided that Contractor is not in default under any provisions of this agreement. Compensation to Contractor is contingent upon appropriation of federal, state and county funds.

   The County shall be compensated for certain services and staff time associated with the project financed through the Microgrid Incentive Program (MIP) Grant Agreement. The County shall be compensated for the CAISO application fee, County CEQA staff time augmentation, and County staff expense. Compensation to the County shall not exceed **One Hundred One Thousand Seven Hundred Thirty-Four Dollars ($101,734)** as outlined in Exhibit "A."

4. **TERMINATION.** This Agreement may be terminated by mutual consent of the parties or by County or Contractor upon 30 days written notice to Contractor.

   In the event of non-appropriation of funds for the services provided under this Agreement, County may terminate this Agreement, without termination charge or other liability.

   Upon termination, Contractor shall be paid a prorated amount for the services provided up to the date of termination.

5. **MODIFICATION.** This Agreement may only be modified by a written amendment hereto, executed by both parties; however, matters concerning scope of services which do not affect the compensation may be modified by mutual written consent of Contractor and County executed by the County Administrative Officer.

6. **NOTICES.** All notices between the parties shall be in writing addressed as follows:

County of Lake
Administration
255 N Forbes St.
Lakeport, CA 95453

Attn: Susan Parker, CAO

Trane U.S. Inc.
800 E Beaty St
Davidson, NC 28036

Attn: Sr. Commercial Counsel

7. **EXHIBITS.** The Agreement Exhibits, as listed below, are incorporated herein by reference:

Exhibit A – Scope of Services Exhibit B – Fiscal Provisions
Exhibit C – Compliance Provisions Exhibit D – Trane RFQ Response

8. **TERMS AND CONDITIONS.** Contractor warrants that it will comply with all terms and conditions of this Agreement and Exhibits, and all other applicable federal, state and local laws, regulations and policies.

9. **INTEGRATION.** This Agreement, including attachments, constitutes the entire agreement between the parties regarding its subject matter and supersedes all prior Agreements, related proposals, oral and written, and all negotiations, conversations or discussions heretofore and between the parties.

IN WITNESS WHEREOF, signatures by both parties represent the mutual agreement made in this document and that they have been duly authorized to enter into this Agreement on behalf of the Party for whom they sign, and authorize Contractor to begin the work described herein, upon the Notice to Proceed, effective as of the date below.

Executed at Lakeport, California on _____.

COUNTY OF LAKE

_____
CHAIR, Board of Supervisors

ATTEST:
SUSAN PARKER
Clerk to the Board of Supervisors

By: _____

CONTRACTOR

By: Trevor Nelson
Trevor Nelson, Regional Energy Services Leader, Trane

APPROVED AS TO FORM:
LLOYD GUINTIVANO
County Counsel

By: _____

EXHIBIT "A" – SCOPE OF SERVICES

PROJECT UNDERSTANDING.

Contractor shall furnish predevelopment and validation services for the Firemain Linked Auxiliary Supply/Hydraulic Energy Storage (FLASHES) Hartley 10-megawatt multi-use renewable energy, pumped storage hydro, microgrid, and firefighting asset. During periods of low demand or surplus generation, electricity pumps water to an upper reservoir; during periods of demand, stored water is released through turbines to generate electricity. The scope covers one site: the 10 MW Hartley located at 5955 Lakeshore Blvd, Lakeport, CA 95453. This work is funded through the PG&E Microgrid Incentive Program (MIP) authorized by the California Public Utilities Commission. Contractor will work with subconsultants to conduct preliminary engineering and feasibility work and shall produce all deliverables required by the PG&E MIP Grant Agreement between County and PG&E, to the extent such deliverables fall within the scope of this Agreement.

1. CONTRACTOR RESPONSIBILITIES.

The Contractor shall perform the following nine (9) categories of services commencing June 2026, in compliance with all applicable regulations. 10 MW Hartley is located at 5955 Lakeshore Blvd, Lakeport, CA 95453. Except to the extent otherwise expressly agreed in writing signed by an authorized representative of Contractor, all dates provided by Contractor or its representatives for commencement, progress or completion are estimates only. Contractor shall use commercially reasonable efforts to meet such estimated dates.

Maximum compensation by site is indicated for each category:

1.1 Real Estate – Land Options **10 MW: $16,000**

2026. Contractor shall secure executed options to establish site control for the Hartley site, including all due diligence, negotiation, title research, and execution of option instruments required to advance the Project.

1.2 Civil & Mechanical Engineering Feasibility **10 MW: $87,406**

2026. Contractor shall complete the following: (a) boundary survey; (b) geotechnical investigation sufficient to support CEQA and preliminary engineering; (c) preliminary site plan; (d) preliminary road and sitework plan; (e) foundation preliminary specification guide; (f) civil cost estimate; (g) pipeline materials selection criteria; (h) preliminary tank selection criteria; (i) preliminary pump selection; (j) preliminary hydraulic single line; and (k) mechanical cost estimate.

1.3 Electrical Engineering Feasibility **10 MW: $25,294**

2026 – 2027. Contractor shall complete: (a) preliminary turbine/generator selection; (b)

preliminary motor/drive selection; (c) preliminary PV layout, racking, and module selection; (d) switchyard cost estimate; (e) tie line cost estimate; (f) substation cost estimate; and (g) local power generation permit application.

1.4 Hydrologic Study **10 MW: $382,300**

2026. Contractor shall complete: (a) hydrology work plan development; (b) test well drilled and operational for pump testing; and (c) pump test and final report characterizing subsurface water availability.

1.5 FERC – Notice of Intent Process **10 MW: $6,600**

2026 - 2027. Contractor shall prepare and file a completed Notice of Intent (NOI) application with the Federal Energy Regulatory Commission to initiate the preliminary process for the pumped storage hydroelectric components of the Project.

1.6 Environmental Consulting / Draft EIR **10 MW: $92,720**

2026 – 2027. Contractor shall complete: (a) expanded Biological Resource Surveys; (b) a Draft Environmental Impact Report or Negative Declaration; and (c) community outreach meetings required to support the environmental review process and CEQA compliance.

1.7 Interconnection Application Assistance **10 MW: $305,360**

2026 - 2028. Contractor shall complete: (a) interconnection work plan; (b) electrical engineering drawings required for CAISO interconnection processes; (c) CAISO Full Capacity Deliverability Study (FCDS) application submittal; and (d) ongoing responses to questions during the interconnection review process through completion.

1.8 California Independent System Operator ("CAISO") Application **10 MW: $60,800**

As required per CAISO schedule. Contractor shall develop the CAISO application for the County to directly submit. The County shall pay the CAISO Application fee directly to CAISO.

1.9 Project Administration **10 MW: $216,700**

Contractor shall: (a) manage all subcontractors involved in the above scope categories; (b) participate in required meetings with PG&E, estimated at one meeting per month; (c) provide monthly billing documentation of development activities sufficient to support County progress billing to PG&E; and (d) provide monthly progress reports and budget tracking throughout the contract term.

Contractor Compensation

Scope Category	10 MW Hartley
1.1 Real Estate – Land Options	$16,000
1.2 Civil & Mechanical Engineering Feasibility	$87,406
1.3 Electrical Engineering Feasibility	$25,294
1.4 Hydrologic Study	$382,300
1.5 FERC – Notice of Intent Process	$6,600
1.6 Environmental Consulting / Draft EIR	$92,720
1.7 Interconnection Application Assistance	$305,360
1.9 Project Administration	$216,700
TOTAL CONTRACTOR COMPENSATION	**$1,132,380**

County Compensation

Scope Category	10 MW Hartley
CAISO Application Fee	$60,800
County CEQA Staff Augmentation	$23,821
County Staff Expense	$17,113
TOTAL COUNTY COMPENSATION	**$101,734**

2 RECORDS RETENTION.

Contractor shall prepare, maintain, and/or make available to County upon request all records and documentation pertaining to this Agreement, including financial, statistical, property, recipient, and service records and supporting documentation, for a period of five (5) years from the date of final payment. If ongoing litigation or an outstanding audit exists at the end of the retention period, Contractor shall retain records until resolution. After the retention period expires, confidential records shall be shredded and disposed of appropriately.

3 COUNTY RESPONSIBILITIES.

The County shall fulfill the following responsibilities:

3.1 Provide timely responses to Contractor's information needs, including access to data, approvals, and County-held documents required to complete scope tasks without delay.

3.2 Execute the PG&E MIP Grant Agreement and provide Contractor with a Notice to Proceed prior to commencement of work under this Agreement.

3.3 Provide an official written determination, upon receipt of preliminary environmental information from Contractor, as to whether the environmental review shall proceed as a Mitigated Negative Declaration or an Environmental Impact Report.

3.4 Complete the environmental review process initiated under this Agreement, including all public agency actions required after Contractor's deliverables are submitted.

3.5 Coordinate with local, regional, and state stakeholders as needed to support permitting, community engagement, and grant compliance.

3.6 Attend work sessions, as reasonably required, with the Contractor's project team to fine-tune project parameters and ensure alignment with County requirements.

3.7 Designate a primary point of contact to coordinate communication between County and Contractor, facilitate Board of Supervisors updates, and provide timely feedback on deliverables to keep the project on schedule.

EXHIBIT "B" – FISCAL PROVISIONS

1. **CONTRACTOR'S FINANCIAL RECORDS.** Contractor shall keep financial records for funds received hereunder, separate from any other funds administered by Contractor, and maintained in accordance with Generally Accepted Accounting Principles and Procedures and the Office of Management and Budget's Cost Principles.

2. **INVOICES.**

2.1 Contractor's invoices shall be submitted on a monthly basis. Invoices shall be itemized and formatted to the satisfaction of the County.

2.2 County shall make payment within 30 calendar days of receiving both of the following:

A. An undisputed invoice from the Contractor for the compensation stipulated herein for supplies delivered and accepted or services rendered and accepted, less potential deductions, if any, as herein provided
B. A written approval from PG&E of the County's Microgrid Incentive Program invoices within 20 business days.

Payment on partial deliverables may be made whenever amounts due so warrant or when requested by the Contractor and approved by the Assistant Purchasing Agent.

Notwithstanding anything in Section 2 above, County shall make payment within 90 calendar days from receipt by County of an undisputed invoice from Contractor.

2.3 County shall submit invoices to PG&E for Microgrid Incentive Program payments within two business days once it receives an undisputed invoice from Contractor that passes a 10% progress threshold. This is based on the Microgrid Incentive Program Grant Agreement between PG&E and the County in Appendix III, Alternative A.

3. **AUDIT REQUIREMENTS AND AUDIT EXCEPTIONS**

3.1 Contractor warrants that it shall comply with all audit requirements established by County and will provide a copy of Contractor's Annual Independent Audit Report, if applicable.

3.2 County may conduct periodic audits of Contractor's financial records, notifying Contractor no less than 48 hours prior to scheduled audit. Said notice shall include a detailed listing of the records required for review. Contractor shall allow County, or other appropriate entities designated by County, access to all financial records pertinent to this Agreement.

3.3 Contractor shall reimburse County for audit exceptions that are specifically related to payment overages or material cost savings of the County within 30 days of written demand or shall make other repayment arrangements subject to the approval of County.

4. **BUDGET.** The total Budget for the Scope of Services shall not exceed $1,234,114 comprising Contractor compensation of $1,132,380 and County compensation of $101,734 as detailed in Exhibit "A" – Scope of Services.

Contractor compensation is allocated as follows: $1,132,380 for the 10 MW Hartley site, covering scope categories 1.1 through 1.9 for the period June 2026 through June 2028.

County compensation is allocated as follows: $101,734 for the 10 MW Hartley site, covering CAISO application fees, County CEQA Staff Augmentation, and County Staff Expense. Contractor invoices shall be submitted on a monthly basis in accordance with the Schedule attached as Exhibit "A." Funds may be transferred between budget line items for Contractor compensation with the written consent of the County Administrative Officer, provided the total Contractor compensation does not exceed $1,132,380.

County compensation items shall be administered separately and shall not be combined with or transferred to Contractor compensation line items.

EXHIBIT "C" – COMPLIANCE PROVISIONS

1. **INFORMATION INTEGRITY AND SECURITY.** Contractor shall immediately notify County of any known or suspected breach of personal, sensitive and confidential information related to Contractor's work under this Agreement.

2. **NON-DISCRIMINATION.** Contractor shall not unlawfully discriminate against any qualified worker or recipient of services because of race, religious creed, color, sex, sexual orientation, national origin, ancestry, physical disability, mental disability, medical condition, marital status or age.

3. **DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS**

3.1 The Contractor certifies to the best of its knowledge and belief, that it and its subcontractors:

A. Are not presently debarred, suspended, proposed for disbarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

B. Have not, within a three-year period preceding this Agreement, been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public transaction; violation of federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

C. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity with commission of any of the offenses enumerated in the preceding paragraph; and

D. Have not, within a three-year period preceding this Agreement, had one or more public transactions terminated for cause or default.

3.2 Contractor shall report immediately to County, in writing, any incidents of alleged fraud and/or abuse by either Contractor or Contractor's subcontractor. Contractor shall maintain any records, documents, or other evidence of fraud and abuse until otherwise notified by County.

4. **INDEMNIFICATION AND LIMITATION OF LIABILITY.**

To the fullest extent permitted by law, Contractor and County shall indemnify, defend and hold harmless each other from any and all claims, actions, costs, expenses, damages and liabilities, including reasonable attorneys' fees, resulting from death or bodily injury or damage to real or tangible personal property, to the extent caused by the negligence or misconduct of their respective employees or other authorized agents in connection with their activities within the scope of this Agreement. Neither party shall indemnify the other against claims, damages, expenses or liabilities to the extent attributable to the acts or omissions of

the other party. If the parties are both at fault, the obligation to indemnify shall be proportional to their relative fault. The duty to indemnify will continue in full force and effect, notwithstanding the expiration or early termination hereof, with respect to any claims based on facts or conditions that occurred prior to expiration or termination.

LIMITATION OF LIABILITY. NOTWITHSTANDING ANYTHING TO THE CONTRARY, IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER PARTY FOR ANY SPECIAL, LIQUIDATED INCIDENTAL, INDIRECT CONSEQUENTIAL, OR PUNITIVE OR EXEMPLARY DAMAGES (INCLUDING WITHOUT LIMITATION BUSINESS INTERRUPTION, LOST DATA, LOST REVENUE, LOST PROFITS, LOST DOLLAR SAVINGS, OR LOST ENERGY USE SAVINGS, INCLUDING CONTAMINANTS LIABILITIES, EVEN IF A PARTY HAS BEEN ADVISED OF SUCH POSSIBLE DAMAGES OR IF SAME WERE REASONABLY FORESEEABLE AND REGARDLESS OF WHETHER THE CAUSE OF ACTION IS FRAMED IN CONTRACT, NEGLIGENCE, ANY OTHER TORT, WARRANTY, STRICT LIABILITY, OR PRODUCT LIABILITY). In no event will Contractor's liability in connection with the provision of products or services or otherwise under this Agreement exceed One Million One Hundred Thirty-Two Thousand Three Hundred Eighty Dollars ($1,132,380) paid to Company by County under this Agreement.

5. **STANDARD OF CARE.** Contractor represents that it is specially trained, licensed, experienced and competent to perform all the services, responsibilities and duties specified herein and that such services, responsibilities and duties shall be performed, whether by Contractor or designated subcontractors, in a manner according to generally accepted practices.

6. **INTEREST OF CONTRACTOR.** Contractor assures that neither it nor its employees have any interest, and that it shall not acquire any interest in the future, direct or indirect, which would conflict in any manner or degree with the performance of services hereunder. Contractor's duties and services under this Agreement shall not include preparing or assisting the County with any portion of the County's preparation of a request for proposals, request for qualifications, or any other solicitation regarding a subsequent or additional contract with the County that is outside the scope of services outlined in Exhibit A. Contractor's participation in the planning, discussions, or drawing of project plans or specifications shall be limited to conceptual, preliminary, or initial plans or specifications. Contractor shall cooperate with the County to ensure that all bidders for a subsequent contract on any subsequent phase of this project have access to the same information, including all conceptual, preliminary, or initial plans or specifications prepared by contractor pursuant to this agreement.

7. **DUE PERFORMANCE – DEFAULT, BREACH, TERMINATION.**

7.1 Default Each party agrees to fully perform all aspects of this agreement. If a default to this Agreement occurs, then the party in default shall be given written notice of said default by the other party. If the party in default does not fully correct (cure) the default within 45

days of the date of that notice (i.e. the time to cure) then such party shall be in default. The time period for corrective action of the party in default may be extended in writing executed by both parties, which must include the reason(s) for the extension and the date the extension expires.

Notice given under this provision shall specify the alleged default and the applicable Agreement provision and shall demand that the party in default perform the provisions of this Agreement within the applicable time period. No such notice shall be deemed a termination of this Agreement, unless the party giving notice so elects in that notice, or so elects in a subsequent written notice after the time to cure has expired.

7.2 BREACH. Each of the following events or conditions shall constitute a breach by County and shall give Contractor the right to terminate this Agreement or suspend performance under Section 7.1 of the Agreement by delivery of written notice: (1) Any failure by County to pay amounts when due; or (2) any general assignment by County for the benefit of its creditors, or if County becomes bankrupt or insolvent or takes the benefit of any statute for bankrupt or insolvent debtors, or makes or proposes to make any proposal or arrangement with creditors, or if any steps are taken for the winding up or other termination of County or the liquidation of its assets, or if a trustee, receiver, or similar person is appointed over any of the assets or interests of County; or (3) Any failure by County to perform or comply with any material provision of this Agreement.

7.3 TERMINATION DUE TO NON-VIABILITY. If Contractor, while conducting the work under this Agreement discovers information, facts, or circumstances that threaten the viability or feasibility of the Project for the County, Contractor will promptly communicate such information to County. Should County determine there is a threat to Project viability, County may elect to work with Contractor to determine which tasks to suspend or terminate the Project. "Project viability" shall include, but not be limited to, any of the following:

i. Any adverse findings for this Project issued under CEQA or NEPA, such as geotechnical engineering, noise studies, aesthetics, or hydrology;

ii. Any Changes agreed upon by both parties to the Scope of Work under Exhibit A that result in insufficient funding coverage for the Project.

Should the Project be deemed no longer viable by the County, and if County is no longer proceeding with the Project and/or is terminating the project, Contractor shall immediately cease work upon notice of the same and Contractor shall bill for the work completed and County shall be liable to Contractor for all Work furnished to date;

If County decides to terminate the Project due to non-viability, this does not constitute a breach or default on the part of Contractor that would be subject to recovery of any damages or remedies by the County.

8. **FORCE MAJEURE.** Each party's duty to perform under this Agreement is contingent upon the non-occurrence of an Event of Force Majeure. If Contractor shall be unable to carry out any material obligation under this Agreement due to an Event of Force Majeure, this Agreement shall at Contractor's election (i) remain in effect but Contractor's obligations shall be suspended until

the uncontrollable event terminates or (ii) be terminated upon 30 days' notice to County, in which event County shall pay Contractor for all parts of the Work furnished to the date of termination. An "Event of Force Majeure" shall mean any cause or event beyond the control of Contractor. Without limiting the foregoing, "Event of Force Majeure" includes: acts of God; acts of terrorism, war or the public enemy; flood; earthquake; tornado; storm; fire; civil disobedience; pandemic insurrections; riots; labor disputes; labor or material shortages; sabotage; OR restraint by court order.

9. ASBESTOS AND HAZARDOUS MATERIALS

County warrants and represents that, (except as express provided in the Scope of Services under Exhibit A), there are no Hazardous Materials on the premises in areas within which Contractor will be performing any part of the Services or County has disclosed to Contractor the existence and location of any Hazardous Materials in all areas within which Contractor will be performing any part of the Services. Contractor's responsibility, if any, for any Hazardous Materials, shall be limited to and as expressly set forth in the Scope of Services under Exhibit A and County shall, at all times, be and remain the owner and generator of any and all Hazardous Materials on the County's premises and responsible for compliance with all laws and regulations applicable to such Hazardous Materials.

10. INSURANCE.

10.1 Contractor shall procure and maintain Workers' Compensation Insurance for all of its employees.

10.2 Contractor shall procure and maintain Comprehensive Public Liability Insurance, both bodily injury and property damage, in an amount of not less than one million dollars ($1,000,000) combined single limit coverage per occurrence, including but not limited to endorsements for the following coverage: personal injury, premises-operations, products and completed operations, blanket contractual, and independent contractor's liability.

10.3 Contractor shall procure and maintain Comprehensive Automobile Liability Insurance, both bodily injury and property damage, on owned, hired, leased and non-owned vehicles used in connection with Contractor's business in an amount of not less than one million dollars ($1,000,000) combined single limit coverage per occurrence.

10.4 Contractor shall procure and maintain Professional Liability Insurance for the protection against claims arising out of the performance of services under this Agreement caused by errors, omissions or other acts for which Contractor is liable. Said insurance shall be written with limits of not less than one million dollars ($1,000,000).

10.5 Contractor shall not commence work under this Agreement until it has obtained all the insurance required hereinabove and submitted to County certificates of insurance naming the County of Lake as additional insured.

10.6 In case of any subcontract, Contractor shall require each subcontractor to provide all of the same coverage as detailed hereinabove. Subcontractors shall provide certificates of insurance naming the County of Lake as additional insured and shall submit new certificates of insurance. Contractor shall not allow any subcontractor to commence work until the required insurances have been obtained.

10.7 For any claims related to the work performed under this Agreement, the Contractor's insurance coverage shall be primary insurance as to the County, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by County, its officers, officials, employees, agents or volunteers shall be in excess of the Contractor's insurance and shall not contribute with it.

10.8 The Commercial General Liability and Automobile Liability Insurance must each contain, or be endorsed to contain, the following provision:

The County, its officers, officials, employees, agents, and volunteers are to be covered as additional insureds and shall be added in the form of an endorsement to Contractor's insurance on Form CG 20 10 11 85 or equivalent alternative. Contractor shall not commence work under this Agreement until Contractor has had delivered to County the Additional Insured Endorsements required herein.

Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under subdivision (b) of California Civil Code Section 2782.

Insurance coverage required of Contractor under this Agreement shall be placed with insurers with a current A.M. Best rating of no less than A: VII.

Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve the Contractor for liability in excess of such coverage, nor shall it preclude County from taking other action as is available to it under any other provision of this Agreement or applicable law. Failure of County to enforce in a timely manner any of the provisions of this section shall not act as a waiver to enforcement of any of these provisions at a later date.

Any failure of Contractor to maintain the insurance required by this section, or to comply with any of the requirements of this section, shall constitute a material breach of the entire Agreement.

11. **ASSIGNMENT.** Contractor shall not assign any interest in this Agreement and shall not transfer any interest in the same without the prior written consent of County except that claims for money due or to become due Contractor from County under this Agreement may be assigned by Contractor to a bank, trust company, or other financial institution without such approval. Written notice of any such transfer shall be furnished promptly to County. Any attempt at assignment of rights under this Agreement except for those specifically consented to by both parties or as stated above shall be void.

12. **PAYROLL TAXES AND DEDUCTIONS.** Contractor shall promptly forward payroll taxes, insurances, and contributions to designated governmental agencies.

13. **INDEPENDENT CONTRACTOR.** It is specifically understood and agreed that, in the making and performance of this Agreement, Contractor is an independent contractor and is not an employee, agent or servant of County. Contractor is not entitled to any employee benefits. County agrees that Contractor shall have the right to control the

manner and means of accomplishing the result contracted for herein.

Contractor is solely responsible for the payment of all federal, state and local taxes, charges, fees, or contributions required with respect to Contractor and Contractor's officers, employees, and agents who are engaged in the performance of this Agreement (including without limitation, unemployment insurance, social security and payroll tax withholding.)

14. **OWNERSHIP OF DOCUMENTS.** All non-proprietary reports, drawings, renderings, or other documents or materials prepared by Contractor hereunder are the property of County. County acknowledges that the FLASHES Hartley 10 MW system is proprietary to Contractor and protected by patent and other intellectual property rights. This Agreement does not confer to County any right, license, interest, or title, by estoppel or otherwise, whether expressly or impliedly, under any patent, trademark, copyright, trade secret, or any other proprietary right(s) designated by the Contractor, including but not limited to patents covering the FLASHES Hartley 10 MW system.

15. **SEVERABILITY.** If any provision of this Agreement is held to be unenforceable, the remainder of this Agreement shall be severable and not affected thereby.

16. **ADHERENCE TO APPLICABLE DISABILITY LAW.** Contractor shall be responsible for knowing and adhering to the requirements of Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, (42 U.S.C. Sections 12101, et seq.). California Government Code Sections 12920 et seq., and all related state and local laws.

17. **HIPAA COMPLIANCE.** Contractor will adhere to Titles 9 and 22 and all other applicable Federal and State statutes and regulations, including the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and will make his best efforts to preserve data integrity and the confidentiality of protected health information.

18. **SAFETY RESPONSIBILITIES.** Contractor will adhere to all applicable CalOSHA requirements in performing work pursuant to this Agreement. Contractor agrees that in the performance of work under this Agreement, Contractor will provide for the safety needs of its employees and will be responsible for maintaining the standards necessary to minimize health and safety hazards.

19. **JURISDICTION AND VENUE.** This Agreement shall be construed in accordance with the laws of the State of California and the parties hereto agree that venue of any action or proceeding regarding this Agreement or performance thereof shall be in Lake County, California. Contractor waives any right of removal it might have under California Code of Civil Procedure Section 394.

20. **NO THIRD-PARTY BENEFICIARIES.** Nothing contained in this Agreement shall be construed to create, and the parties do not intend to create any rights in or for the benefit of third parties.

21. **PUBLIC RECORDS ACT.** Contractor is aware that this Agreement and any documents provided to the County may be subject to the California Public Records Act and may be disclosed to members of the public upon request. It is the responsibility of the Contractor to clearly identify information in those documents that s/he considers to be confidential under the California Public Records Act. To the extent that the County agrees with that designation, such information will be held in confidence whenever possible. All other information will be considered public.

EXHIBIT "D" – TRANE RFQ RESPONSE

TRANE

LET'S GO BEYOND™

Lake County
Request for Qualifications for
Energy Conservation Performance Contract

Submitted February 27, 2020 by Trane U.S. Inc.

Ingersoll Rand

Trane U.S. Inc.
4145 Delmar Avenue
Rocklin, CA 95677
(888) 849-2911

February 27, 2020

Lars Ewing
RFQ Coordinator
Lake County Public Services Department
333 Second Street
Lakeport, CA 95453

RE: RFQ for Energy Conservation Performance Contract

Dear Mr. Ewing and Selection Committee:

Trane U.S. Inc. is pleased to submit the enclosed qualifications to Lake County for an Energy Conservation Performance Contract. This proposal will demonstrate that Trane has the technical qualifications, highly experienced local team, and strong backing of a global $16.5 billion corporation to fully support your project.

By virtually any measure, the state of the energy market is changing faster in California right now than at any time in recent memory. From Time of Use period change, to Public Safety Power Shut-offs, to PG&E's bankruptcy and the rise of Community Choice Aggregators, changes are both widespread and deep. For a customer considering an energy project, broad and deep partner experience is paramount. Our ESCO group brings not only their own considerable expertise, but that of the whole Trane team, including finance, technology, regulatory affairs, wholesale energy market participation and grant writing, just to name a few. Harnessing this broad experience gives Lake County the best chance for a great project today – and tomorrow.

Trane has been helping customers keep their facilities comfortable and cost-effective since 1913. For the past 25 years, we have been offering performance contracting services that align with this solicitation. Trane offers the full range of energy services, including traditional energy and water conservation measures, renewable technologies, energy procurement and utility management services, power generation, and remote monitoring of your critical building systems. We'll provide whatever level of support you need.

Thank you for your consideration in reviewing our response to this RFQ. We look forward to discussing your needs in detail and being selected as your energy partner for this new initiative.

Sincerely,

Reggie Ingram
Regional Executive, Comprehensive Solutions
(916) 751-0853
Reggie.Ingram@trane.com

Table of Contents

A. Qualifications and Experience

Trane is uniquely qualified to partner with Lake County as an Energy Services Contractor (ESCO) because of the integrated and multifaceted capabilities of our team. The basic concept of an ESCO project for a public sector client is to harness cash flow from energy-related financial impacts to pay for needed capital upgrades independent of the budget. However, with the California energy marketplace undergoing enormous and rapid change, the traditional ESCO model faces increased uncertainty.

California energy market changes directly impact the ability of any energy project to cash-flow positive today and to remain profitable into the future, but it also opens significant new opportunities as well. Just as technology measures that were profitable for many years may suddenly be less so in the future, other options that have not made sense in the past may be the right answer going forward. It is only by partnering with an ESCO that understands all aspects of this evolving market and available technologies that a customer like Lake County can examine its many available options, and provide decision-makers the understanding they need to make an informed, optimized and risk mitigated choice.

Trane's hard-won, cross-functional knowledge is neither an accident nor easily replicated. Trane has been an innovator in multiple different energy technologies for decades. Our staff directly participates in regulatory proceedings today that will govern the energy markets of the future. Trane Energy Supply Services is a registered actor in wholesale energy markets like the California Independent System Operator, giving us direct knowledge of the requirements needed to participate.

All of these areas of knowledge are then combined with traditional ESCO contracting capabilities to convert theory to cash flow opportunities, and to convert opportunities to completed projects. This combination of deep market, technology and contracting knowledge is what differentiates Trane as an ESCO, and is described in much greater detail in Section D.1: Unique Qualities and Capabilities of this response.

While it is important to note that choosing Trane as an ESCO allows access to tremendous depth and breadth of market and equipment knowledge, it is just as important to note that the process of developing an ESCO project with Trane is collaborative. Our projects are built from the ground up – by working closely with the customer's team – not forced from the top down. The solutions we develop through teaming with our customers are specific to their needs, not a one-size-fits-all solution imposed from above.

The essential point when considering the broad experience of our team is not that we know in advance that a sophisticated grid-integrated asset is the best choice for Lake County before the analysis even begins; it is to say that the interests of Lake County are best served by partnering with an ESCO that has the ability to analyze all available options, and a unified spectrum of energy capabilities is what we bring to our ESCO customers.

As an ESCO contractor, Trane brings the reliability that comes from having completed hundreds of millions of dollars of ESCO projects in just the last few years, decades of ESCO experience,

and the balance sheet of a major, international, energy-focused firm. In our ESCO projects, we typically provide all required analysis, engineering, finance, procurement, construction and start-up services needed to deliver self-funded turn-key energy projects, all while maintaining a single point of contact and guaranteeing performance.

In addition to showing we know how to successfully complete projects to public sector standards in general, our California team has the specialized expertise, local experience, licensing and personnel needed to complete any type of work likely to be appropriate for Lake Count from basic efficiency and polar PV projects, to energy storage, to Advanced Energy Projects. For example, there are hundreds of firms that could complete the relatively simple paperwork needed to request interconnection for a carport solar PV project, but there are far fewer firms that would know how to participate in the much more involved process around connecting a major In Front of Meter renewable generating asset with Automated Generation Control to the grid, should that asset be a good choice for Lake County.

California Public Sector Energy Services Projects

Project	Type	Date booked	Value	Notes
Yolo County	County	January 2020	$10,065,791	SGIP Incentive Application
City of Livingston	City	June 2019	$2,900,000	Solar and infrastructure renewal
Rialto USD Phase 1	School District	September 2014	$1,440,000	Prop 39 grants
Rialto USD Phase 2	School District	April 2015	$880,000	Prop 39 grants
Rialto USD Phase 3	School District	April 2016	$2,100,000	Prop 39 grants On-Bill Financing (OBF)
Rialto USD Phase 4	School District	May 2017	$14,560,000	Prop 39 grants Tax-exempt municipal lease
Western Placer USD	School District	April 2018	$1,370,000	Prop 39 grant
Sunnyside UESD	School District	March 2018	$115,375	Prop 39 grant
Pleasant Valley JUESD	School District	August 2018	$87,969	Prop 39 grant
Springville UESD	School District	June 2019	$247,395	Prop 39 grant
Hart-Ransom USD	School District	April 2019	$464,741	Prop 39 grant

Bakersfield City SD Phase 1	School District	January 2019	$1,098,625	Prop 39 grant
Bakersfield City SD Phase 2	School District	January 2020	$2,223,994	Tax-exempt municipal lease
Central School District	School District	June 2017	$4,751,629	Prop 39 grant
Santa Rosa	City	September 2016	$5,800,000	Microgrid, Includes CEC Grant
Salida USD	School District	October 2012	$3,170,000	Guaranteed savings, QZAB, utility incentives

1. Trane's Performance Contracting Experience

Provide information that describes your company's experience with providing the services described in this request for qualifications.

For more than a century, Trane has been synonymous with technology that maximizes the comfort and energy efficiency of commercial buildings.

Founded in **1913**, the company quickly expanded from a heating systems manufacturer to an air conditioning pioneer. Trane entered the building automation system market in **1978** and was the first to offer integrated controls for all of its products.

We significantly broadened our HVAC and controls system expertise in **1995** by offering a comprehensive range of energy services. Since then, Trane has implemented thousands of facility upgrade initiatives for clients throughout North America. Actual savings from our performance contracting projects exceed the guaranteed amount more than 99% of the time – and these extra savings flow directly to our customers.

Our engineers, project managers and other professionals are well-versed in all traditional energy and water conservation measures, as well as renewable solutions that can help minimize the impact of unstable fossil fuel prices. In addition to reducing costs, we improve the reliability or expand the capability of your existing infrastructure and building systems.

We can also help optimize energy supply contracts and power generation assets for large organizations. And, we support our customers for life through expert maintenance services and HVAC parts support.

NAESCO Accreditation

Trane earned accreditation as an Energy Services Company (ESCO) in 2004 from the National Association of Energy Services Companies (NAESCO) and has retained accreditation every year since then. NAESCO has determined that Trane provides its customers with demonstrated competency and accepted industry practices proven to deliver successful projects. This is a testament to our core competencies in all energy-related technical and business disciplines.


NAESCO ACCREDITED ENERGY SERVICE COMPANY

Certificate of Accreditation

This is to certify that

Trane

has participated in the Accreditation Program and Review and has been recognized by the National Association of Energy Service Companies to be an Accredited ESCO.

Natasha Shah
Chair

Terry E. Singer
Executive Director

June 2018
Certification of Accreditation covers a period of 36 months from date of issuance.

Accredited since 2004

US DOE Qualified

Trane is a qualified U.S. Department of Energy ESCO. We have managed energy services performance contracting (ESPC) programs for several federal government agencies, including the Department of Energy, Department of State, Navy, Army, Air Force, and the General Services Administration. Trane's Federal ESPC portfolio includes $641 million in DOE ESPC projects. We are delivering more than $47 million in annual guaranteed savings – $882 million in guaranteed savings over the life of all 22 contracts.

U.S. DEPARTMENT OF ENERGY

Under the scope of these projects, **we have saved the federal government more than 1.9 trillion BTU/year in energy**, with an average reduction of 30.4% from the baseline. Our projects have received multiple awards, including the Federal Energy Management Program Award of the Year and the Presidential Award for Leadership in Federal Energy Management.

Other Industry Participation

Trane is well represented in the majority of professional organizations within the heating, ventilation and air conditioning (HVAC) industry. ASHRAE, BOMA, IFMA and ASME are among the prominent organizations in which Trane maintains a leadership position in promoting and developing quality standards. We are also active participants in the U.S. Green Building Council and the U.S. Environmental Protection Agency's Energy Star program.

Multi-Phase Performance Contracting Projects

Trane has been implementing performance contracting projects similar to this opportunity since 1995. The vast majority of these contracts have been with public agencies. **Many customers have engaged Trane in multiple ESPC projects** because they were satisfied that we lived up to our promises. These include:

- Wesleyan University (CT): 10 phases
- Yorktown Community Schools (IN): 6 phases
- Shelby County Schools (AL): 6 phases
- Dighton-Rehoboth Regional School District (MA): 5 phases
- Knox County Schools (TN): 5 phases
- Shawnee Mission Unified School District 512 (MO): 5 phases
- **Rialto Unified School District (CA): 4 phases**
- City of Lynn (MA): 4 phases
- Racine Unified School District (WI): 4 phases
- Johnson City Central School District (NY): 4 phases
- Lafayette School Corporation (IN): 4 phases
- Lee's Summit School District (MO): 4 phases

Award-Winning Performance Contracting Projects

Several of Trane's performance contracting projects have won awards from external sources. Here are just a few:

- **University of Florida Reitz Union, Gainesville, FL:** The Urban Green Council bestowed this project with an EBie Award for the greatest percentage reduction in building energy use.
- **Virginia Department of Motor Vehicles, Richmond, VA:** Our project was recognized by Governor Terry McAuliffe for its commitment to energy efficiency and sustainability, and was presented with the Energy Efficiency Leader Award.
- **Keyport Naval Undersea Warfare Center, Keyport, WA:** Navy Energy Project of the Year.
- **Naval Air Station Oceana / Dam Neck Annex, Virginia Beach, VA:** Federal Energy Management Program Presidential Award for Leadership in Federal Energy Management.

- **Virginia Department of Forensic Science, Richmond, VA**: The Department was recognized at the VCU Energy & Sustainability Conference as a leader in Energy and Sustainability for State Agencies, based on our performance contracting project.
- **Fort Drum, NY:** This project received a U.S. Department of Energy ESPC Task Order awarded specifically for accomplishing energy savings.
- **Jewish Eldercare Center, Montreal, QC:** This project won a first-place ASHRAE Region II Technology Award in the Existing Health Care Facilities category.

In 2019, our performance contracting projects resulted in 278,935 tons of CO_2 equivalent avoided emissions. These are for all projects with at least one year of M&V results.

The table below includes a representative sample of our Local Government performance contracting projects since 2015:

Project Name	Facility Type	State Province	Contract Value	Year Booked
City of Livingston	City	CA	$2,897,000	2019
City of Fenton	City	MO	$2,503,483	2019
City of Olive Hill	City	KY	$9,297,873	2019
City of McKenzie	City	TN	$1,941,854	2019
City of Bardwell	City	KY	$1,030,000	2018
The Classic Center	County	GA	$1,456,889	2018
Jasper County Corrections	County	IN	$494,441	2018
City of Greenville	City	KY	$7,365,924	2018
City of Sunset Hills	City	MO	$982,744	2018
Wentzville Law Enforcement Center	City	MO	$734,036	2018
Bowie County	County	TX	$1,487,875	2018
Detroit Lakes Community Center	City	MN	$1,810,678	2018
City of Rockwood	City	TN	$313,420	2017
City of Danville	City	KY	$8,032,000	2017
Pierce County Medical Examiners Building	County	WA	$2,134,807	2017
Macon County	County	GA	$720,258	2017
City of Paris	City	TN	$2,397,387	2017
Town of Oro Valley	City	AZ	$419,677	2016
Sullivan County Commissioners Office	County	PA	$698,215	2016
City of Fulton	City	KY	$5,821,733	2016
City of Birmingham	City	AL	$61,333,168	2016
Lakehaven Utility District - Lakota WWTP Phase 2	City	WA	$3,134,530	2016
Town of Falmouth Phase 2	City	MA	$2,300,000	2016

Washington County Government	County	FL	$1,093,239	2016
City of Hickman	City	KY	$2,464,433	2016
City of Monroe WWTP Phase 2	City	WA	$3,709,393	2016
Kitsap County WWTP	County	WA	$2,642,699	2015
Sumter County	County	SC	$5,077,525	2015
Knox County Government Phase 2	County	TN	$10,514,141	2015
City of Sultan	City	WA	$2,061,885	2015
Dickinson County	County	MI	$880,135	2015
City of Lynnwood	City	WA	$11,345,543	2015
City of Lynn Phase 4	City	MA	$3,513,750	2015
City of Sultan WWTP	City	WA	$296,965	2015

Renewable Energy and Power Solutions

Trane's Renewable Energy and Power Solutions team is highly skilled at designing and implementing renewable energy technologies that can protect your organization against fluctuating fossil fuel prices. These include solar photovoltaic, solar thermal, cogeneration systems, geothermal heat pumps, biomass, biogas and wind power technologies.

A growing number of building owners are also increasing their electric load flexibility, energy independence or resiliency by implementing distributed energy resources (DER) and energy storage solutions. Our professionals can help you evaluate the benefits of a microgrid, or using thermal or electro-chemical batteries to store energy for use when electric rates are at peak.

Trane will thoroughly explore all possibilities for incorporating renewable energy and power solutions into this project. We have helped many clients throughout North America reduce operating costs and increase their energy independence, including these:

- **Solar PV** – City of Livingston (CA), City of Ridgecrest (CA), Madera Community Hospital (CA), Doña Ana County (AZ), State of New Mexico (NM), Commonwealth of Virginia (VA), West Chicago Park District (IL), Dighton-Rehoboth Regional School District (MA), Texas State Technical College (TX), Diocese of Honolulu (HI), Weedsport Central School District (NY), North Shore Utility District (WA).
- **Solar Hot Water Heating** – Knox County Government (TN), Florida Atlantic University (FL), University of Central Missouri (MO), Piñon Unified School District (AZ), Naval Undersea Warfare Center Keyport (WA), Henry County Jail (VA), Durham Public Schools (NC).

- **Geothermal Heat Pumps** – Fort Drum Army Base (NY), University of Central Missouri (MO), Naval Air Station Oceana (VA), Sierra Army Depot (CA), Charleston Air Force Base (SC), Parkway School District (MO), Danville Independent Schools (KY), Chase County Public Schools (NE).
- **Cogeneration** – Marine Corps Air Station Beaufort (SC), Budd Inlet Wastewater Treatment Plant (WA), Clayton County Landfill (GA), Southbridge Innovation Center (MA), Fort Knox (KY), Brantford General Hospital (Canada).
- **Biomass Heating Plants** – University of Maine-Farmington (ME), University of Maine-Machias (ME), Dighton-Rehoboth Regional School District (MA).
- **Biogas** – Clayton County (GA), Budd Inlet Wastewater Treatment Plant (WA).
- **Trane Thermal Battery™ Cooling Systems** – BD Biosciences (CA), Duquesne University (PA), Encore Urban Development Central Energy Plant (FL), Pinellas County Central Energy Plant (FL), State of Michigan Secondary Complex (MI), Thomas E. Creek VA Medical Center (TX).

When looking to integrate renewable energy and distributed energy resources (DERs) into your strategic plan, there are many factors to take into consideration: use scenarios, current utility rates, local legislation, incentive programs, and fuel choices driven by geography. Trane can help advance your sustainability goals with an energy solution that lowers your environmental footprint and maximizes financial benefits that may be available through local, state and federal programs such as the Investment Tax Credit (ITC) and accelerated depreciation.

Alternative Fuel Service Vehicles

Trane is highly experienced in evaluating the impact of switching from diesel or petroleum to cleaner fuels, including electric vehicles and charging stations. Fleet fuel management is routinely investigated as part of our performance contracting audit process. Here are two examples of how we've implemented alternative fuels for service vehicles.

As part of a performance contract with the Virginia Department of Mines, Minerals and Energy, Trane investigated the feasibility of converting their existing fleet of trucks from gasoline to propane. At the time, propane was less than half the cost per gallon of gasoline. As a first step to a phased approach, DMME converted eight vehicles from gasoline to propane, which has saved more than $5,000 in annual fuel costs for these vehicles.

Trane designed and installed the US Army's first operational compressed natural gas (CNG) station, at Fort Benning in Columbus, GA. This station serves 55 CNG vehicles and four buses. The project was completed in two phases and received a Secretary of the Army Energy and Water Management Award for Innovative/New Technology in 2016.

California Solar Power Projects

City of Livingston: A 480,569 kWh solar PV system at four facilities: a park, sports complex, police station and public works department. The system will include both cantilevered steel structures and roof-mounted (racked) panels. Solar power is expected to save the City of Livingston $67,000 a year in electricity costs.

City of Ridgecrest: A 496 kW solar PV array located at Helmers Park, near the Ridgecrest Civic Center and City Hall. The 230-panel system produces more than 90% of the Civic Center's electrical consumption, amounting to annual savings of nearly $200,000. Trane helped the City capture more than $1.4 million in rebate dollars from the California Solar Initiative.

Woodlake Unified School District: A 324 kW solar PV array, consisting of 954 modules, is located at the district's Maintenance, Operations and Transportation (MOT) Facility. It produces approximately 80% of the energy consumption by the MOT, the Event Center, Woodlake High School and Castle Rock Elementary School, saving $67,000 in annual utility expenses. Trane also helped the district establish a Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) system and successfully apply for a $1,000,000 Energy Conservation Assistance Act (ECAA) Loan to offset the construction costs.

Salida Independent School District: A 275,139 kWh solar PV system was installed as part of a performance contracting project. Solar energy is serving Salida Middle School and the Salida Warehouse through ground-mounted panels. The project received a Qualified Zone Academy Bond in the amount of $420,000.

US Department of Forestry: A performance contracting project at five US Forest Service Region 5 sites in California featured portable solar PV generation systems that can be transported on a standard utility trailer. This allowed for quick installation at very remote sites, as well as the ability to be moved to other locations in the event of forest fires or disasters that can threaten the power generation assets. The project has reduced fossil fuel energy consumption by nearly 85% and was partially funded by a $840,000 US Department of Energy grant.

Madera Community Hospital: 1 MW solar PV array located on an empty plot of land adjacent to the hospital. The system features 4,872 ground-mounted modules with an annual production of 2,183,220 kWh. The project qualified for a California Solar Initiative rebate.

National Solar Power Experience

Following are summaries of selected solar power projects in other states:

Knox County, TN: As part of a Phase 1 performance contracting project, Trane installed one of the nation's largest solar thermal hot water systems. It is providing the Knox County Detention Center with 80% of its daily hot water needs. The system is saving taxpayers $60,000 annually – and the facility's carbon emissions have been reduced by 174 tons a year

State of New Mexico: This project consists of a combination of carport and roof-mounted solar PV systems at 19 locations throughout the city of Santa Fe. The total solar capacity of 3.175 MW produces 26% of the electricity consumed by those facilities.

Dighton-Rehoboth Regional School District, Dighton, MA: This Phase 3 performance contracting project featured a 1.2 MW solar PV system mounted on 12 carports at all five district school campuses. Solar power now generates approximately 75% of the district's entire electricity needs, saving $164,000 in annual energy costs. In addition to the cost savings, the solar arrays also provide lighting to the schools' parking lots, which enhances security. The project will receive approximately $253,880 annually in Massachusetts solar energy credits for next 10 years and $95,547 from year 11-20. Here is a link to a video case study: https://youtu.be/LjlgS_T2QLs.

Solar PV arrays cover parking spaces at all schools within Dighton-Rehoboth Regional School District, saving $164,000 in electricity costs

Commonwealth of Virginia: Trane installed solar panels at three state buildings in and around the capital of Richmond: (1) The Virginia Distribution Center, with 1,035 panels producing 231 kW of electricity. (2) The 14th Street Parking Deck, with 756 panels producing 181 kW of electricity. (3) The James Madison Building, with 47 panels producing 11 kW of electricity. These solar installations are saving the state approximately $45,000 a year.

Diocese of Hawaii, Honolulu, HI: A 1.15 MW solar PV system has been installed on rooftops and carports at nine sites, comprising 45 buildings. Solar energy is meeting 80% of the electrical consumption at these facilities. Under the resultant Power Purchase Agreement that provided the funding, systems were designed to withstand 120 mph winds and were insured against theft, wind, and earthquake damage.

West Chicago Park District, Chicago, IL: This 862 kW ground-mount system will provide approximately 80% of the annual electricity needs for a community center and a fitness center. The estimated annual production is 1.15 MW. It is being financed through a 20-year Power Purchase Agreement.

Doña Ana County, AZ: This project includes the installation of over 370 rooftop flat ballasted solar panels, with a peak production output capacity of over 145 kW and an annual production of over 250,000 kWh. The system serves 5% of the electricity consumed by the Doña Ana County Detention Center.

Current California Projects

Our California-based team has been responsible for more than $500 million in performance contracting work since 2009. We have a wide range of clients, including Municipalities, Higher Education, Hospitals and School Districts. We average more than $50 million in new performance contracting business each year, with custom solutions based on client needs

Trane is currently working with multiple cities and counties in California, including Yolo County, City of Livingston, City of San Bernardino and City of Santa Rosa, to name a few.

Energy Performance Contracting Approach

Because energy performance contracting projects have a high degree of complexity, we have developed a streamlined process that encourages customer collaboration at every stage – thereby avoiding surprises down the road. **Together, we will make decisions regarding all improvement measures**, how they will be financed, which products and systems will be implemented, and how the results will be measured and reported for the duration of the contract.

The table that follows illustrates Trane's step-by-step approach to developing, implementing and supporting a performance contracting program.

Performance Contracting Services

Initiation

Before the start of any project, we work with a broad range of customer stakeholders to determine the customer's wants, needs and issues. Meetings with Facilities staff brings out latent organizational knowledge on equipment status, performance issues, and anticipated capital replacement budgets / timelines. Interaction with Finance personnel identifies issues that they are trying to address – from avoiding upcoming capital expenses, to improving cash flow, to issues that could influence how a project is financed.

Finally, it is sometimes desired to have a working session with senior leaders to discuss what the overall project goals are that we should keep in mind as we develop the project. Examples of goals that we have been directed toward include capital expenditure avoidance, maximizing positive cash flow to the organization, improving resilience, reducing greenhouse gas emissions, or improving local power quality just to name a few.

Defining both the ultimate goals and the current status in advance allows a focused analysis process to start with the foundation that is needed to guarantee an optimized result.

Preliminary Audit

The Preliminary Audit will give our engineers a good indication of the potential for facility improvements and the savings they are likely to generate. These will be subjected to greater scrutiny in the Investment Grade Audit phase.

Preliminary Report

The Preliminary Report summarizes the results of the Preliminary Audit and sets the goals for the next phase. Results include measures that are being considered for the final project, anticipated first and operational costs, anticipated savings or revenue, and estimated non-financial metrics such as resilience or GHG impacts.

An important note is that all expenditures up through the Preliminary Report are at Trane's risk, and the customer has no contractual obligation. A positive directive is needed from the customer to move forward with the subsequent Investment Grade Audit, and from this point forward the customer does take on some cost responsibility under certain circumstances.

Investment Grade Audit

Once the list of potential improvements identified in the Preliminary Report are authorized to move forward, a more detailed audit – called an Investment Grade Audit (IGA) – will determine which measures best fit the project's financial payback criteria, and which ones should be postponed for future consideration.

Selection of Energy Conservation Measures (ECMs)

Our engineers have a wealth of experience designing and developing energy and water conservation measures, renewable energy and other technologies, IT infrastructure, fleet management and many others. Together, we will select the ECMs that meet your financial and operational criteria.

Project Financing

Trane works with strong lenders who understand performance contracting and can obtain the lowest interest rates and most advantageous loan terms. We can help customers secure grants, rebates and other forms of alternative funding for major energy projects.

Installation of ECMs

You will approve all new equipment, systems and subcontractors long before we mobilize our construction team. We are very experienced in making sure that our installation activities have minimal impact on day-to-day operations.

Training Your Staff

As soon as the final improvement measures are selected, we begin working with your operations management team to structure a training program that will allow your staff to effectively operate the new equipment. We also offer skills enhancement training in other areas, if desired.

Commissioning of Systems and Equipment

Together, we will develop a commissioning plan that will ensure all new systems and equipment are performing as designed. Trane can utilize an in-house or a third-party commissioning agent.

Turnover to Owner

Once the commissioning process is completed to your satisfaction, Trane receives a signed certification of completion. Our team will then deliver Operations and Maintenance manuals for the new systems and equipment.

Measuring the Project's Results

After making a large investment in a wide range of facility improvements, you will want assurance that they are delivering the expected savings. Our measurement and verification (M&V) process is transparent and agreed upon during the project development phase.

Reporting the Actual Savings

Our engineers take periodic measurements of the equipment performance and issue quarterly reports, comparing the actual savings to the guaranteed amount. These figures are reconciled annually. Any excess savings are yours to keep. If actual savings fall short of the guarantee for that year, we will write a check for the difference or provide equivalent services or products (at your discretion).

Maintenance of Equipment

Regular maintenance must be provided on new equipment as long as the performance guarantee is in place. This service can be provided by your staff, by Trane or by a third-party firm. Trane offers one of the HVAC industry's largest and most experienced force of service technicians, who know how to optimize the performance of facility equipment from most manufacturers.

Additional Support

Our local offices are fully staffed to provide ongoing support for additional HVAC, building automation and control systems, as well as parts and other services that you identify. We are also able to provide a wide range of energy and operational consulting services.

Advanced Energy Project Elements

In many ways an Advanced Energy Project (AEP) works like a traditional measure within an overall ESCO project, but there are important differences. It is similar in that an AEP follows a familiar

development path: Preliminary Audit, Preliminary Report, Investment Grade Audit, etc. However, there are several differences that need to be mentioned.

Counterparty Reliance: AEPs are often dependent upon having a Load Serving Entity as an off-taker that will pay for the grid impacts the project could deliver. Unlike a project that simply saves money on an electric bill, an AEP must have a counterparty that says yes. This process usually takes additional time compared to the life-cycle of a traditional ESCO project.

Dependence on Outside Actors: AEPs are often dependent upon decisions by outside entities for critical elements. For example, for a bio-methane peaking/storage plant, a permit would be needed from an air district prior to construction, permission for interconnection would be needed from PG&E, etc. These approvals are outside of the normal Trane-client approval mechanism. Like the issues around counterparty reliance, dependence on outside actors is another way that AEPs can take longer to develop than projects composed entirely of traditional ESCO measures.

Ultimately, though, the analysis and development any Advanced Energy Project is similar to our traditional ESCO work in the most important way possible: partnership. Like everything else in our process, we are focused on working together with our partners to achieve energy-related goals. Whether that is a simple project that can be completed in 30 days or an AEP that takes 30 months, our commitment is to be there every step of the way.

2. Technological Services and Solutions

Describe the technological services/solutions provided by your company. Describe some of the technologies the County might expect would be implemented under the project.

As mentioned elsewhere in this document, Trane draws on a vast array of energy-related capabilities when developing ESCO projects. The result of this integrated, broad spectrum analysis effort is the ability to use our unmatched energy market and technology domain knowledge for our clients. To partner with Trane means you will be able to uncover and thoroughly examine technical opportunities most other providers do not even know exist. The Trane way of building an ESCO project is one that involves teaming with the client, starting with a solid foundation of traditional ESCO measures, adding advanced energy measures as appropriate, and proposing an individualized unified project package that includes finance, warranty and continuing support.

Foundational Energy Efficiency: The foundation of an ESCO project always starts with an analysis of existing energy-consuming equipment. This involves looking at basic energy

systems such as HVAC, lighting, controls, motors and pumps, just to name a few. In each of these areas, we help our customers analyze many of the financial metrics associated with the current state of their existing energy equipment, including the energy and repair bill savings associated with each measure, the current age of the equipment and expected useful life for equipment of that type, the anticipated cost of replacement, and even the greenhouse gas implications of replacement. Together, these savings and cost data points are combined into a financial analysis for presentation to senior management.

Several points noted elsewhere in this response are included here, as well:

> **Equipment Manufacturer Neutrality**: Although we are proud of the equipment we manufacture, our development process is dedicated to choosing the equipment that is right for each customer and each facility. For example, at Western Placer Unified School District, we replaced over 100 HVAC units with equipment manufactured by Bard instead of equipment manufactured by Trane for a simple reason – the openings in classroom walls were set up for Bard units instead of Trane units.
>
> **Delivery Flexibility:** Each project is developed individually with a customer, and each project takes into account local capabilities. This can result in substantially different delivery methods for the same measure. For example, in several projects over the last few years we have recommended the installation of LED retrofit kits for indoor lighting due to the savings they can deliver both operationally and on utility bills, but even for the same measure the delivery can be different.
>
> In some cases, the measure was not included in the Trane contract because the customer chose to procure and install the equipment themselves, but relying on Trane to complete and file the incentive paperwork as part of our overall energy project scope. In other cases, the customer wanted to leverage Trane's bulk purchasing power to procure the equipment and further to include it in their finance package, but relied on their own labor for installation. In yet other cases, customers wanted a turn-key solution from Trane, including procurement, installation, finance and warranty. Each of these approaches is supported by the general Trane concept of crafting an ESCO project that is optimized for the situation and capabilities of that specific customer.

Advanced Energy/Traditional Energy Hybrid Project Measures: The sophisticated analysis capabilities that Trane brings to Advanced Energy Projects are still used to influence traditional energy projects. For example, replacing a chiller for a public sector client is a traditional ESCO project, but we are also looking at it from an advanced energy standpoint at the same time. Thermal Energy Storage could be added to make the project a dispatchable load, which could in turn be sold to a local Load Serving Entity under a Capacity contract. In that case, there would be both utility bill savings and new utility revenue generated by the project. The combination of utility bill savings and new utility revenue can often be substantial enough to improve simple payback of the hybrid project compared to the simple payback of a chiller replacement project alone.

Not all traditional energy projects and technologies are readily adapted to be part of a traditional/advanced hybrid strategy, but a large and increasing number of them are. The point is not deciding in advance whether any specific project at a specific site is best served by a hybrid approach; instead it is recognizing that Lake County is best served by partnering with an ESCO that has the capability to recognize these opportunities during the analysis phase, and reliably deliver them during construction.

Advanced Energy Technologies

At the other end of the spectrum are opportunities classified as Advanced Energy. In Advanced Energy Projects, normal energy systems are modified so that they become dual-use assets, performing both a basic function and also delivering a definable grid impact. All Advanced Energy Projects also involve finding ways to monetize the benefits these projects deliver to the grid, whether that is through a bilateral contract with a Load Serving Entity through direct participation in a market like California Independent System Operator (CAISO), or through one of the many possible variations on this approach.

Often an Advanced Energy project involves the addition of energy storage, but energy storage does not necessarily mean batteries. A water tank on top of a hill is a form of energy storage. Advanced Energy Projects also often involve installation of renewable energy in conjunction with energy storage.

One characteristic that all Advanced Energy Projects share is complexity. For a traditional energy efficiency project, all that needs to be understood are fairly simple concepts like improvements in power (KW), energy (kWh), and the electric rate. This is all the more remarkable since Advanced Energy Projects often use extremely well understood and mature technologies, with the application and monetization elements being novel. However, even though Advanced Energy Projects will often use existing technology, because Advanced Energy Projects are dealing with the wholesale side of the equation, a new set of utility side questions emerge.

Here are just a few examples of the issues which must be answered when considering an Advanced Energy project.

- Who are the Load Serving Entities that could procure the grid impacts of a proposed project, and what is their current net/short position?
- What is the current and forecast Locational Marginal Price (LMP) for the products that could be developed?
- What is the loading status of the local transmission grid?
- Is there the ability for these Advanced Energy Projects to also deliver resilience benefits to critical infrastructure?

Trane is one of the very few ESCOs that has experience in examining and answering each of these questions, and the only known Energy Services Contractor with experience incorporating these elements into a traditional ESCO project.

Because the range of potential needs and opportunities is so vast, it is impossible to list every combination and believe that the "right answer" can be known before starting the analysis process. However, a few examples of Advanced Energy Projects currently under development for other California local governments will give a taste of how existing infrastructure, mature technologies, and new business models combine in Advanced Energy Projects.

We are working with several local governments in high-fire threat areas on hybrid projects that involve **solar PV and water tanks on hills**, with the capacity and energy contracted out to a Load Serving Entity. The anticipated annual payments from the LSE are anticipated to be equal to or greater than the anticipated debt service. In case of Public Safety Power Shut-off events, these facilities will have a limited continuous islanding/microgrid capability. The water tank piping will also be plumbed to the fire main system, providing the ability to supply huge amounts of water at high pressure in case of an actual fire.

Trane is working with several local governments on projects that use **bio-methane from sources such as landfills or anaerobic digesters** to provide a peaking resource sold on a long-term basis to an LSE off-taker. Use of biogas as a base load resource has been accomplished for years, but use as a critical peaking/ramping resource is novel, and this approach may also be enhanced with proprietary Trane technology to increase the value even further. The end result of this approach is a project that delivers significantly more value to participating local governments than the traditional method of producing base load power.

The case of one of our California local government clients is instructive. The customer has a landfill gas-to-energy project at the end of its useful life and needs to replace the engines. If they were to go with a standard replacement, they would be lucky to break even over a 20-year period, as energy sales are unlikely to cover equipment replacement debt service for the first 10 years. If the local government instead converts the facility to an Advanced Energy project, it is estimated that **revenue will exceed debt service by tens of millions of dollars** over that same period. Even better, by providing critical ramping and power quality services to the grid, this project will provide far more benefit to the Northern California power grid as an Advanced Energy project than it would as a like-for-like replacement.

Finally, a word on solar PV seems to be in order. As mentioned in far greater detail in the section on Risk Mitigation, standalone PV projects suffer from significant issues regarding economics because of changes in electric rate structures. However, the challenges faced in making economic sense of standalone solar PV projects does not mean that it is a discredited technology. Solar photovoltaic is a mature clean technology, it demonstrates reliable performance even when the grid as a whole is shut down, and can be an important element of a comprehensive energy solution.

This is even more true when resilience and continuity of operations is a key or even the principal goal of the energy projects at a given site. Instead, what the data shows is that while solar PV as a standalone technology choice faces challenges, it is an integral part of an economically viable and risk mitigated solution, particularly when integrated with energy storage and other elements of an Advanced Energy project.

Wide Range of Energy Conservation Measures

The table below shows the most common energy conservation measures that Trane explores when developing performance contracting projects. These are among the technologies that Lake County may expect to be included in our project:

Cooling Systems

- Chiller Replacements
- Gas-Fired Centrifugal Chillers
- Cooling Towers
- Tower-Free Cooling
- Thermal Energy Storage
- Reclaim A.C. Heat Rejection
- Commercial Refrigeration
- Pumping Modifications
- Data Center Cooling
- Distributed Cooling
- Chiller-tower optimization
- Pressure-independent control valves

HVAC Systems

- Air Handler Replacements
- Variable Frequency Drives
- Variable Air Valve Systems
- High-Efficiency Motors
- Demand Control Ventilation
- Heat Recovery Systems
- Exhaust Fans
- Fan Coils
- Kitchen and Lab Hoods
- De-stratification Fans
- Convert Constant Flow to Variable Flow
- Variable Refrigerant Flow Systems

Heating Systems

- Boiler Replacements
- High-Efficiency Modular Boilers
- Condensing Boilers
- Geothermal Heat Pumps
- Water Source Heat Pumps
- Burner Stack Heat Reclaim
- Steam Trap Retrofits
- Steam Pressure Control
- Electric-to-Gas Conversion (fuel switching)
- Pumping Modifications
- Distributed Heating
- Pressure-independent Control Valves
- Fuel Switching

Controls Systems

- Building Automation Systems
- Pneumatic-to-Digital Conversion
- Multi-System Integration
- Demand Based Ventilation
- Demand Limiting
- Recommissioning and retro-commissioning
- Plug Loads
- Walk-in Cooler / Freezer Controls
- Air Compressors
- Trane Intelligent Services (building performance, energy assessment, remote monitoring, etc.)

Lighting Systems

- Interior LED Retrofits
- Exterior LED Retrofits
- Occupancy Sensors
- Lighting Controls
- Daylight Harvesting
- Street Light Retrofits
- Exit Signs
- High Bay Retrofits

Renewable Technologies

- Solar Photovoltaic (PV)
- Solar Thermal
- Cogeneration
- Landfill Gas
- Biomass
- Wind Turbines

Water Savings

- Low-Flow Toilets, Urinals and Faucets
- Sink Aerators / Flow Restrictors
- Flush Valve Fixture Commissioning
- Water and Sewage Treatment
- Dishwasher Retrofits / Replacements
- Side-stream Filtration for Cooling Towers
- Ozone Treatment for Laundry
- Rain Sensors for Irrigation Systems
- High-efficiency Domestic Water Heater
- Irrigation Wells

Other Solutions

- Central Plant Construction
- Central Plant Renovation
- Green Roofs
- Thin Film Solar Roofing
- Emergency Generators
- Fleet Management (conversion to compressed natural gas)
- Energy Supply Services (demand response, energy procurement, etc.)
- Power Factor Correction
- Pipe and Tank Insulation
- Building Envelope (windows, roofs, weather-stripping, window film, etc.)
- Energy Awareness and Behavior Modification

Detailed Process Approaches

The following technological services and solutions will be critical to the success of your project and are detailed in this section:

- Building Auditing Approach
- Project Development Process
- Vendor-Neutral Manufacturer

Building Audit Approach

Preliminary Audit

Auditing a building for energy and operational efficiencies is a highly collaborative process. Our thorough method for collecting information is augmented by your team's insights regarding the building's history and critical needs. Together, we'll develop a solution that achieves your operational priorities and financial criteria.

Many counties face obstacles such as aging infrastructure, making the most of limited funding, shortage of manpower to maintain buildings, indoor air quality concerns, and increasing technology demands. We will start the audit process by taking time to understand your specific goals for this project and the challenges they may present. Our team will evaluate all of these factors and any others that surface in our interviews.

> Trane and Lake County will jointly develop a solution that fully achieves the goals set forth for this program.

A Preliminary Audit allows our team to determine potential cost savings related to energy, water and wastewater use, as well as the operations and maintenance of your building systems. We study energy use, comfort requirements, operating efficiency and environmental impact. The information gathered during this initial phase should provide enough data for both of our teams to make an informed decision regarding which energy conservation measures (ECMs) should be researched further in a more detailed audit.

The auditing process involves **frequent team meetings and communications** to accurately define and confirm the project's scope and direction. Our team members will seek verification and agreement in these key areas:

- General direction and goals of the project
- Scope of ECMs and savings strategies
- Baseline utility and operating cost profiles
- The funding and financial approach

Based on the audit findings, we will provide documentation for your team to review and offer suggestions that will be more fully explored in the Investment Grade Audit phase.

Investment Grade Audit

The next step is to drill deeper and either validate or modify the recommendations presented in the Preliminary Audit report. This is the Investment Grade Audit (IGA), which features an engineering analysis of each building. *An IGA is sometimes referred to as a detailed energy audit.*

All mechanical, electrical and plumbing systems – as well as the building envelope – will be examined in more detail. We will identify the current condition of each facility, the urgency of any necessary improvements, potential for structural envelope changes, financial viability of each improvement measure and potential operational efficiencies that can be captured.

The final IGA report will incorporate feedback from your management team and facility staff so that the project will fully achieve your operational and financial goals.

During the IGA, Trane relies on our customers to provide the following:

- Assist in gathering necessary information as detailed in the table below, including, but not limited to, copies of current utility bills
- Access to contracts in place with utilities for evaluating whether to pursue more favorable terms
- Access to all facilities and escorts, if necessary
- Access to building automation and energy management systems
- Time for interviews with building occupants, maintenance personnel and janitorial personnel to better understand your facilities, how they operate, inherent issues with operation, hours of operation, etc.
- Availability of personnel for strategic meetings

The following information is collected during the Investment Grade Audit...

IGA Categories	Examples of Information Collected
General	• Obtain copies of building and controls drawings • Interview key building personnel • Review existing energy savings program
Building Envelope	• Collect building floor plans • Note window, roof types, conditions and age • Note general, readily observable building condition and/or problems
Lighting and Water Systems	• Detailed room-by-room lighting audit with light level measurements • Detailed room-by-room audit of all water-consuming devices

IGA Categories	Examples of Information Collected
HVAC Systems	• Inventory all equipment, including nameplate information • Investigate existing direct digital controls (DDC) system and available trend data • Document existing system setpoints • Measure power draw from equipment (fans, pumps, etc.) • Identify existing performance issues with equipment
General Building Equipment	• Inventory all equipment, including nameplate information • Document equipment schedules • Identify existing performance issues with equipment
Non-Building Equipment Loads	• Identify all major loads not associated with the building operation, such as computer equipment, kitchen equipment and heat recovery equipment
Utility Bill Analysis	• Acquire all customer utility billing for the past 36 months • Acquire utility rate schedules • Review utility billing for conformance with rate schedule • Identify opportunities to change rate schedule or utility provider • Provide comparison of energy usage to similar facilities in the same geographic area
Hazardous Materials Assessment	• Interview customer staff to identify any known hazmat conditions • Collect and review any previously completed assessments or studies conducted for customer • Complete assessment of facilities (define/identify areas of potential concern) • Create an agreed upon plan to handle situations

Upon acceptance of the IGA results, Trane will finalize the project design in partnership with Lake County. We will work closely with your team to prioritize needs and determine areas of concentration. At this point, the engineering and design criteria for all potential facility improvement measures are determined. All engineering and construction drawings, as well as software engineering, will be completed in accordance with standard industry practice.

Project Development Process

Building Modeling

As an HVAC systems manufacturer, we understand the challenges of designing the most efficient, lowest cost HVAC solution for each facility. That's why we developed Trane Air Conditioning Economics, or TRACE™ – a design-and-analysis software program that helps HVAC professionals optimize the design of a building's heating, ventilating and air-conditioning system based on energy utilization and life-cycle cost.

TRACE™ 700 has been a mainstay of the engineering design community for decades. TRACE™ 3D Plus is the newest design tool and produces a three-dimensional image of the building under consideration.

TRACE™ 700 and TRACE™ 3D Plus meet the requirements for simulation software set by ASHRAE Standard 90.1-2004-2010 and the LEED Green Building Rating System. They are among the U.S. Department of Energy's approved building modeling software packages.

Many of Trane's competitors use TRACE™ 700 to develop energy efficiency projects because it's recognized as one of the industry's leading building modeling tools.

Both versions are recognized by the U.S. Internal Revenue Service as a Tax Deduction Qualified Software, which calculates energy and power cost savings that meet federal tax incentive requirements for commercial buildings.

Depending on the project requirements, we use TRACE™3D Plus or TRACE™ 700 for building energy simulation analysis, and the resulting simulation models are the basis for our energy savings guarantee. These building modeling tools provide the power to analyze many different building aspects, systems, controls and equipment. Building simulation software determines building energy consumption using data such as:

- Building square footage, construction and orientation
- Climate
- Occupancy rates and schedules
- Lighting fixtures and schedules
- Equipment efficiencies and schedules
- Temperature setpoints
- Utility rate structures

ECM Interactions to Consider

When ECMs are analyzed to predict savings, care must be taken to account for the interaction between ECMs. Buildings are comprised of dynamic systems, and when a single change is made to one system, others may be affected.

An example ECM to illustrate this point is a lighting retrofit:

Installing more energy-efficient lighting systems reduces the electrical load, but results in less internal heat gain. While cooling costs will decrease, heating costs will rise. The cooling savings typically will outweigh the higher heating costs. The interactive effects of lighting retrofits are relatively well understood and the expected savings can be quantified with engineering formulas. Other ECMs may require computer simulations to accurately quantify savings.

Demand and Consumption Profiles

Once the building model has been created, the monthly and annual demands along with the consumption profiles for each facility and energy type are simulated. Using actual utility rate structures, the projected monthly and annual utility dollars are calculated and compared to the actual utility consumption data.

The simulation model provides a profile of energy use by building function and can be used to model proposed improvements. After the design specifications are completed, the building model incorporates both the recommended and desired facility improvements. Computer modeling allows a precise determination of the projected energy savings achieved by the combination of all proposed improvements.

Baseline Calculation Methodology

Savings are calculated by comparing actual energy usage after project completion with a baseline – defined as the amount of energy the facility would have used if the project had not been implemented. **The baseline is a 12-month period of pre-project utility consumption** typically determined from the building's utility bills.

Building simulation software determines building energy consumption using data such as: building square footage, building construction, building orientation, climate, occupancy rates and schedules, lighting fixtures and schedules, equipment efficiencies and schedules, temperature setpoints, and utility rate structures. A baseline will then be established by using the information calculated in the building modeling and utility bill analysis.

Our approach to creating a baseline involves the following steps:

- Choose a baseline year
- Determine relevant variables for each facility
- Collect data on energy and water consumption for each facility
- Use regression analysis to normalize the data (if applicable)
- Compute changes in energy and water intensity from the baseline
- Determine total and new energy and water savings

FACT

Trane will work closely with your team during baseline development to ensure that the baseline, which becomes part of the contract, is mutually agreed upon and thoroughly understood by all stakeholders.

Energy Savings Calculations

Dollar Savings Calculations: The savings projections generated through software modeling are then correlated to dollars by examining the appropriate utility rates, consumption and demand for a given facility and/or meter.

Utility Rate Structure: Applying the appropriate utility rate structure to the energy consumption calculated from TRACE™ 700 or TRACE™ 3D Plus gives the operating cost of the building. This operating cost is compared to the actual cost obtained from the utility bills. The resulting model is then used as the base model from which energy and cost savings are computed. This report sequentially adds (cascades) the recommended energy conservation measures (ECMs) to the base model to show ECM interaction.

Weather Conditions: The building's existing envelope, internal conditions and schedules, and energy-using systems as described above are input into the TRACE™ 700 or TRACE™ 3D Plus program. The input is interlaced with Typical Meteorological Year (TMY) weather data to calculate annual energy consumption and cost representative of existing conditions. Because weather conditions vary from year to year, the calculated annual energy consumption and cost will not (and should not) exactly match the actual energy consumption over the past year. However, the calculated results should be close in value to the actual consumption and cost.

Mutually Agreed Upon Savings: Another customary practice is to agree upon values for savings parameters, such as occupancy hours or operating conditions. For example, we will sample a lighting fixture's power draw *before* and *after* the ECMs are installed. Trane and Lake County will agree upon the facility's operating hours based on data from the site survey. All agreed upon values need to be verified. This is accomplished by comparing *actual conditions* observed during site inspections with the *operating profiles* generated in our computer models.

Operational Savings Calculations

Operational savings may be a significant contributor to the economic benefits of a performance contracting project. These savings are generally realized from replacing aging, high-maintenance equipment with newer, more reliable equipment, as well as from applying new technology to more efficiently manage plant operations.

There are three categories to consider when quantifying operational, or non-energy, savings:

1. Direct Cost Avoidance: Reduction or elimination of existing or planned service contracts, as well as material, supply and labor expenditures.
2. Indirect Cost Avoidance: Customer valuation, including such items as redeployed labor resources and reduction in overhead. These are sometimes referred to as "soft savings" and can be included at your direction.
3. Future Capital Cost Avoidance: Future replacement expenditures avoided as a result of new equipment installed.

Operational savings are determined and agreed upon by both parties, and will not be measured or verified during the guarantee period of the contract. As is standard in the energy services industry, operational savings are stated (or stipulated) in the performance contract document.

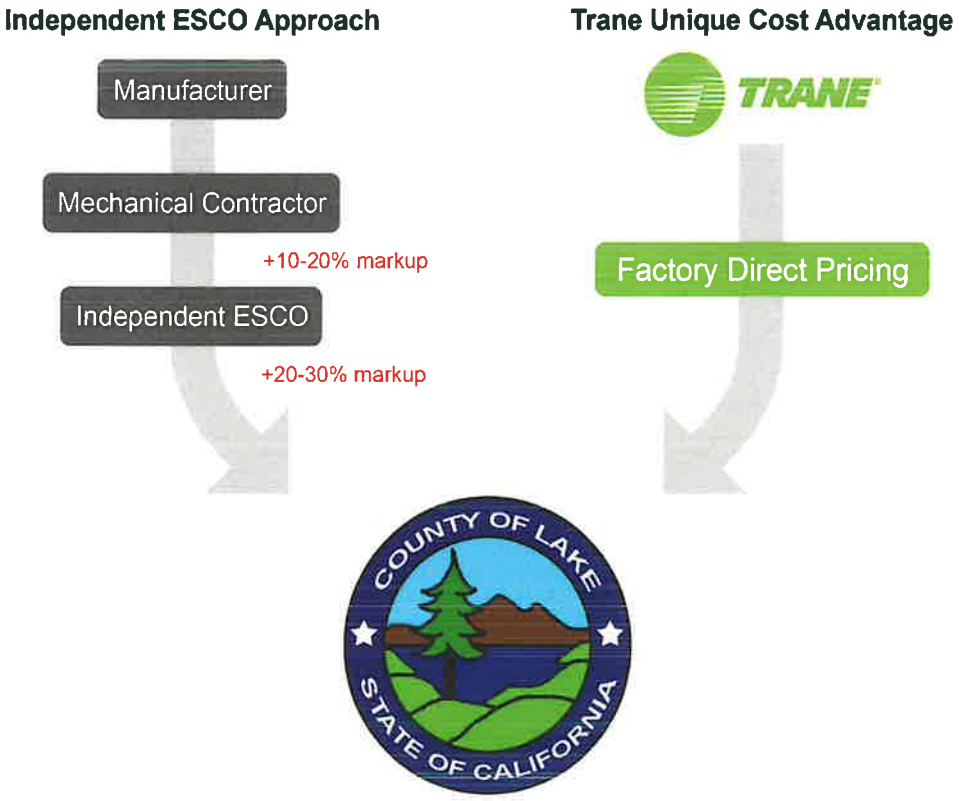
Vendor-Neutral Manufacturer

Many energy efficiency projects involve the upgrade of heating, ventilating and air conditioning (HVAC) systems, as well as new building automation systems for more precise control of energy consumption. Trane is a leading manufacturer of both comfort and controls systems. Therefore, we can deliver a significant price advantage over ESCOs that do not manufacture these essential systems. Their pricing includes equipment mark-ups that Trane is able to avoid.

Although we manufacture these systems, we never insist that they be installed as part of an energy services project. In fact, Trane has installed HVAC systems from these manufacturers, among others: **Carrier, Lochinvar, Raypak, Hydrotherm, Energy Logic, Marley/Evapco, Pool Pac** and **Multistack**. We have installed controls systems produced by **Johnson Controls, Siemens, Tridium Niagara, Automated Logic, Alerton** and many others.

Competitive systems will be thoroughly evaluated and the products that offer Lake County the greatest value will be selected. All products, equipment and subcontractors involved in this project will be approved by Lake County before any work commences.

The visual below illustrates the cost advantages of Trane's best value approach.



3. Project Financing Expertise

Describe your firm's expertise in applying for and securing financing and funding for projects. Include the methodologies that may be used to verify and guarantee the County's realized energy savings & information on the financial soundness and stability of ESCO.

Project finance is an integral part of any Energy Conservation Performance Contract process, and for Trane that is no exception. As with other areas of our ESCO work, however, our standard industry finance experience with traditional ESCO projects is augmented by unique capabilities, particularly where Advanced Energy project development capabilities are needed. Project finance capabilities include:

Incentive Application

The best fianance for any project is free money from other parties, so utility incentive funds are often an important part of ESCO projects. What sets Trane apart in this space is our rich experience as an actual program administartor. In 2006, Trane was selected as a program administrator in a competitive solicitation to act on behalf of the utility in getting incentive dollars out to ratepayers. Since then, Trane has gone on to administer incentive programs for many other utilities in California and beyond.

Experience as an actual contracted program administrator for PG&E and other utilities has provided our team with deep knowledge of the internal processes that govern how incentive projects work. From understanding the CPUC rules that incentive programs need to follow to knowing the goals that other program administrators are trying to reach, this inside knowledge of incentive programs helps our customers in numerous ways. Trane is able to identify incentive opportunities early in the project development process, neither bypassing available funds nor wasting time on applications that will be later rejected.

Process knowledge helps our clients through faster review time: experience in incentive program administration means that our team is far less likely to include errors that slow down other applications. Finally, years of experience in this space and attendance at program administrator conferences means that our team has long-term relationships with senior personnel at the current program administration firms, PG&E, and at the CPUC. In the unlikely event that a dispute arises, we have the capability to use those relationships to get a quick and unbiased review.

Self Generation Incentive Program

One incentive program of particular note to keep in mind is the Self Generation Incentive Program (SGIP). The SGIP program offers substantial incentives to local governments and has undergone two significant revisions in just the last six months. These changes involved the increase of incentive levels for certain applications, the advent of GHG reporting requirements, and the development of the Equity Resilience Budget. Further changes promulgated in December / January included extension of the program for five years, the shift of segregated funds to the Equity Resilience account, and the addition of more than $800 million from SB 700.

Designing energy systems with SGIP in mind should be a primary consideration for Lake County and your ESCO partner. The good news for Lake County is that, although the revised SGIP Handbook rules have yet to be published – and despite the fact that the revised program still is opening on April 1 – the situation for Lake County has actually improved since December. Previously, it appeared that Lake County's applications would need to be in by opening day in order to ensure funding. However, December / January changes extending the program by five years and increasing funding by hundreds of millions of dollars removed the pressure for Equity Resilience applications.

SGIP has changed dramatically and in highly important ways in recent months, and Trane continues to be deeply involved in the process. Being involved in the SGIP proceedings directly means that our staff has the specific details *today* that will eventually be published in the Handbook in the future. **This advanced knowledge of SGIP rules helps our customers be ready for programs before they open**, allowing them to grab their share before others even fully understand the program rules.

In fact, because Trane combines both intimate involvement in the recent SGIP changes (at the regulatory proceeding level) and also understands them at the project level (as an ESCO project originator/contractor), we are regularly tapped to help educate local government representatives on the latest changes – and what can be expected in the future. As just one example of the confidence placed in his knowledge in this area, **Michael Day from our team continues to give regular SGIP updates to the County Supervisors and Senior Staff served by RCRC**.

Grant Identification, Proposal Development and Application

Along with utility incentive funds, grants are another form of "free money" that are often incorporated into our ESCO projects, particularly for public sector clients. Grants are often competitively selected, but grant application is a regular part of our business. We have a remarkably high success rate at winning the solicitations we pursue.

Grants can come from an almost bewildering array of sources. There are literally dozens of potential grant sources available for application within the federal government, from US Department of Agriculture to the US Department of Energy to FEMA, to name a few. The State of California has a large number of grant programs that can also be utilized on energy projects, from the CEC Administered Electric Program Investment Charge (EPIC) fund to rural job opportunities. The State also occasionally funds pilot projects through the legislature. Finally, grants are also often available for important projects from the private/non-profit sector, particularly when teamed with research institutions like the University of California. In our ESCO projects, we are also always on the lookout for grant opportunities, and **a majority of the public sector projects we have completed within the last five years in California have included some form of grant funding.**

When grant funding is identified, we work with our customer to prepare the necessary application materials and submit them on their behalf. This work is included in our scope. Trane does not charge local governments for grant writing services. If the grant application is successful, the funds help pay for the project. If the application is not successful, the risk is on Trane.

Standard ESCO Energy Finance

As an ESCO since 1995, traditional project finance has been part of our business for a quarter century. With offices in New York and other major financial centers, and ongoing relationships with dozens of institutional investors, Trane has dedicated finance professionals whose sole purpose is to process ESCO-related debt vehicles. Trane has successfully financed over $1 billion dollars of ESCO projects in recent years, and **arranges hundreds of millions of dollars in project financing per year**. Beyond this national capability, our California team also regularly works with California-specific municipal finance professionals.

In keeping with the concept that every project is unique, Trane has utilized many different finance structures for ESCO projects in recent years. Some projects are best served by accessing tax equity finance structures, where tax credits and depreciation that are unusable to a local government are instead capitalized to reduce net project cost. In other cases, the right answer for a customer was an equipment lease or Power Purchase Agreement, while in others it was low or zero interest finance from a State or Federal finance program. In each case, the decision is made in consultation with the local government to select what is best for the customer.

One item of note here is that Trane's ESCO arm is under no mandate to only use Trane's own finance arm. **Unlike some energy firms that effectively only act as marketing arms for their in-house finance products,** the Trane ESCO team is under no pressure to produce deal flow through our in-house finance products. When the Trane finance product is in the best interest of

the customer, that is what we use; when a different finance vehicle is better suited to the needs of our customer, then we use that tool. As with so much else that we do, the focus of the Trane ESCO team is solely and exclusively on putting together a project that is best for the customer.

Advanced Energy Project Finance

Advanced Energy Projects are similar to traditional ESCO finance projects, but different in others. Advanced Energy Projects are usually both larger in scope and longer in development than traditional ESCO work, which can lead to different finance mechanisms for different parts of a project. Also, Advanced Energy Projects usually have an off-take agreement with a utility or other Load Serving Entity in place before the final project is financed. This can considerably ease the path to developing project financing. It is easier to borrow money when you already have a utility contract in hand that will make the debt service payments for you, and a second contract in hand where Trane stands behind the technical performance of the installation.

Advanced Energy Projects are also an area that is ripe for Public-Private Partnerships, particularly where the investor is a regular participant in financing energy infrastructure with an appetite for tax equity. These finance professionals are comfortable with loaning against long-term utility contracts, and can also monetize the tax benefits. They are familiar with the cadences of developing utility-scale projects, from permitting to interconnection, and have the experience needed to properly evaluate an opportunity that might seem exotic to others.

Measurement and Verification

A final element that is intimately tied up in any discussion of a guaranteed ESCO project is the methods used for Monitoring and Verification. In general, Trane adheres to the IPMVP, or the International Performance Measurement and Verification Protocol, but there are exceptions. For example, for projects funded with **Self Generation Incentive Program (SGIP) incentives**, a specific M&V protocol must be followed by a registered Performance Data Provider in order to collect the Performance Based Incentive portion of the SGIP incentives. These PDP reports on M&V must be provided for 10 years. The M&V requirements for SGIP are similar to, but different than, the IPMVP process.

Similarly, Advanced Energy Projects participating in regulated markets also have a specialized M&V process called settlement. Settlement rules are set by the CPUC, CAISO and other agencies, and are again similar to but slightly different than IPMVP rules.

While there are many options available on which method and protocols to use, two overarching concepts are clear. First, because the appropriate form of M&V to use is intimately tied to the technologies and business models selected for use in the final project, the selection of an M&V method in advance is effectively impossible. Second, it is equally clear that no matter what measures are selected, there will be an M&V methodology that will fit that selection.

The answers to questions around project finance capabilities and M&V methodologies are the same answers that apply to many other questions in developing ESCO projects. By examining the largest number of available options and recommending what is best for the customer, we both help the customer in the near term and help our own business in the long term.

Trane's Financial Stability

You will have a financially solid corporation to support this project throughout all stages – and well into the future as your needs evolve. Trane U.S. Inc. is a wholly owned subsidiary of Ingersoll Rand, a $16.6 billion global leader whose 45,000 employees create comfortable, sustainable and efficient environments. Ingersoll Rand is the 16th oldest company and the 12th oldest continuously listed company on the New York Stock Exchange (symbol: IR).

Our people and our family of brands – including Trane®, Ingersoll Rand®, Thermo King® and Club Car® – work together to enhance the quality and comfort of air in homes and buildings, transport and protect food and perishables, and increase industrial productivity and efficiency. Our 2019 financial results have just been released:

Full-Year 2019 Results (all comparisons against the full-year 2018 unless otherwise noted)

Financial Comparisons - Full-year Continuing Operations

$, millions except EPS	2019	2018	Y-O-Y Change
Bookings	$16,327	$16,650	(2)%
Net Revenues	$16,599	$15,668	6%
GAAP Operating Income	$2,018	$1,917	5%
GAAP Operating Margin	12.2%	12.2%	-
Adjusted Operating Income	$2,234	$2,011	11%
Adjusted Operating Margin	13.5%	12.8%	70 bps
GAAP Continuing EPS	$5.61	$5.43	3%
Adjusted Continuing EPS	$6.37	$5.61	14%

Balance Sheet, Cash Flow and Capital Allocation

$, millions	2019	2018	Y-O-Y Change
Cash From Continuing Operating Activities (Y-T-D)	$1,956	$1,475	$481
Free Cash Flow (Y-T-D)*	$1,839	$1,149	$690
Working Capital/Revenue*	3.8%	4.2%	40 bps decrease
Cash Balance 31 December	$1,304	$903	$401
Debt Balance 31 December	$5,573	$4,091	$1,482

Ingersoll Rand Named one of America's Most JUST Companies

Ingersoll Rand has earned a place on America's Most JUST Companies report, compiled by JUST Capital and Forbes. The report explores which companies are "the best at doing right by America." More than 81,000 Americans shared what they wanted from the biggest businesses in the United States:

- Fair pay
- Treat customers well and protect their privacy
- Produce quality products
- Minimize environmental impact
- Give back to the communities they operate in
- Commit to ethical and diverse leadership
- Create abundant job opportunities

JUST Capital and Forbes evaluated nearly 900 of America's largest publicly traded companies with those seven priorities in mind. They used the results to create the 2019 JUST 100 list of companies that are addressing public interest and generating better returns for themselves and society.

Separation of Ingersoll Rand and Trane

Effective March 2, 2020, Trane will no longer be owned by Ingersoll Rand. The split was announced in April 2019. Trane Technologies plc will be the new parent company for Trane and Thermo King, which manufactures transport temperature control systems for trucks, trailers, shipboard containers and railway cars, as well as HVAC systems for bus, shuttle and passenger rail applications. The new Trane Technologies name elevates our market-leading Trane brand and celebrates the power of technological innovation.

4. Trane-Lake County Partnership

Demonstrate experience and capacity to partner with the County through all phases of any contracted projects, to include possession of the necessary skills to meet the Technical Specifications listed in this RFQ.

Trane brings an unmatched set of cross-functional skills to the partnership needed to help Lake County develop an optimized energy project that serves the unique needs of your community. Both Trane and Lake County bring capabilities that are vital to the successful development of an optimized project outcome, and the absence of any of these capabilities would inevitably result in a less-than-desirable outcome.

This process begins with the Leadership and Staff of Lake County itself. Some of the data that Lake County as an organization can bring to the survey, analysis and measure selection process will make the project flow more efficiently, such as equipment lists, repair costs, and

existing concerns over comfort or functionality. Other elements that Lake County will bring to the process can only come from your organization. What is most important to Lake County:

- Increasing resilience of County facilities to the impact of PSPS events?
- Creating positive cash flow?
- Eliminating upcoming capital expenditures?
- Reducing County GHG emissions?
- Or something else entirely?

Focusing on optimizing any of these individual goals can often come at the expense of another. For example, a project that provides the maximum level of resilience at the largest number of sites may also do very well in terms of reducing GHG emissions, but would probably look different than a project that is focused on maximizing positive cash flow. How should those competing priorities be balanced?

It is only through establishing an understanding of the goals of the project at the outset that a truly optimized project can be developed. This is where Trane can help. For some customers, when they get to the point of developing an energy project, they already have in mind a clear and narrow set of goals. For those customers, Trane stands ready to use the power of the ESCO process to help them reach those goals in the best way possible.

Other customers are less certain at the beginning as to what options are available, so their goals are more general. In these situations Trane can help at the beginning of the process by facilitating discussions, pointing out what is available – and the pros and cons of each option. The output of these facilitated discussions is an informed crystallization of goals by Lake County itself that will serve as a guide to the Trane team when developing the project.

Another area where Lake County has invaluable knowledge is the facility staff's technical capabilities and bandwidth for self-installation of some energy measures. While some of the measures that Trane is likely to identify will almost certainly require the services of a specialized contractor, some of the measures may also be amenable to installation by County staff. Self-installation can be a powerful tool, combining the energy analysis, engineering, bulk purchase, and finance capabilities of the Trane team with the existing construction capabilities of the County to produce a very cost efficient option.

To gauge this Trane will need to work deeply with senior facilities and other staff to answer certain questions. What specific specialty skills (electrician, HVAC, carpenter, etc.) do your staff members have? How much of the work would the County want to take on directly? Measures

installed by Trane under an ESCO contract always come with a warranty, while those that are self-installed usually do not. How does the County weigh the value of warranty (or its absence)?

The range of possibilities that Trane has employed in this area is quite broad – from excluding measures that could be self-installed all together, to a teaming approach where Trane finances the equipment purchase and the customer installs, to the measure being completely left to outside contractors even though it could be installed by customer staff. Trane knows that the right answer on self-installation for any customer is always dependent on too many factors to be known beforehand. Therefore, it must to be discovered through the ESCO development process, not prescribed in advance.

Trane also brings essential capabilities to the partnership to find the best possible project for Lake County. **The area where Trane differentiates itself from the competition as a potential partner is in the breadth and depth of our energy market knowledge**, and specifically how our ESCO team harnesses those capabilities to find the best possible set of solutions for our customers. It is in the integration of subject matter knowledge through the ESCO process that possibilities are converted to projects.

Tapping into this vast base of energy knowledge, but making the process smooth and easy for the customer, is where the science of energy is transformed into the art of Performance Contracting. The process to look comprehensively at energy opportunities is iterative, but it does not need to be overwhelming – and this is where the art of the Trane ESCO team comes in. In choosing Trane as your energy contracting partner, Lake County will have a dedicated set of ESCO development professionals to work with.

The ESCO team dedicated to Lake County will act as the interface between all of the different supporting parts of the Trane organization and those on the Lake County staff assigned to this partnership. The result is that the burden on Lake County staff is reduced, but access to broad industry knowledge is maintained. Project development options start as broad as possible in the market, but are always guided by members of the Trane team who have taken the time to learn the way that Lake County sees the world.

5. Project Team Resumes

Submit Resumes and any other information describing the capabilities and experience of the people who will be involved in this project.

Proposed Project Team

Trane's local management structure is shown in the organizational chart below. This is a very similar structure that we have employed to manage our previous Energy Conservation and Proposition 39 projects across California. Reggie Ingram will be responsible for Lake County's complete satisfaction with all aspects of this project. He will be supported by highly experienced experts in the various performance contracting phases. Joe will try to get a crisp

Trane Points of Contact

Rob Wax
Regional Comprehensive Solutions Leader

Reggie Ingram
Regional Account Executive

Corporate Subject Matter Experts

Renewable Energy and Power Solutions

Energy Supply Services

Account Management

- **Reggie Ingram** — *Regional Account Executive*
- **Michael Day** — *Advanced Grid Services*
- **Service and Equipment Sales**
- **Controls Sales Team**

Project Development

- **Dean Perry** — *Engineering Team Lead*
- **Greg Lisk** — *Project Developer*
- **Matt Boorany** — *Project Developer*
- **Wendy Cheung** — *Energy Engineer*
- **Hannah Seeger** — *Energy Engineer*

Implementation

- **Patrick Wilkinson** — *Comprehensive Solutions Construction Manager*
- **Scott Tyra** — *Project Manager*
- **Subcontractors** — *Trane Installation Partners*
- **Trane California Technicians**

Measurement & Verification

- **Hannah Seeger** — *Energy Engineer*
- **Intelligent Services Technicians**

Resumes are provided below for the following key project team members:

- Rob Wax, CEM, LEED-GA: Regional Comprehensive Solutions Leader
- Reggie Ingram: Regional Executive, Comprehensive Solutions
- Michael Day: Trane North America Utility/SmartGrid Team Lead
- Dean Perry, PE, CMVP: Project Development Leader
- Greg Lisk, PMP: Project Developer
- Matt Boorany, PMP: Project Developer
- Wendy Cheung, CEM: Energy Engineer
- Hannah Seeger: Energy Engineer
- Patrick Wilkinson, PE, PMP, CEM, CMVP: Regional Comprehensive Solutions Operations Leader
- Scott Tyra: Project Manager

Name and Title	Qualifications and Experience	Relevant Experience
 **Rob Wax, CEM, LEED-GA** Regional Comprehensive Solutions Leader	• 10 years of experience • 8 years with Trane • BS in Mechanical Engineering, Virginia Polytechnic Institute and State University • Certified Energy Manager • LEED Green Associate	• State of New Mexico General Services Department – Santa Fe, NM • One San Jacinto Plaza – El Paso, TX • Arizona State University - Tempe, AZ • City of Peoria - Peoria, AZ • Town of Oro Valley - Oro Valley, AZ • St. Rose Hospital - Henderson, NV • Banner University Medical Center - Phoenix, AZ • Hacienda Healthcare - Phoenix, AZ • Holy Cross Hospital - Taos, NM • Liberty Center, Liberty Property Trust - Tempe, AZ

Function

Rob oversees the Comprehensive Solutions and Energy Turnkey business for Trane's California-Hawaii-Southwest Region, which includes energy conservation performance contracts. He has a decade of experience helping clients achieve their energy and sustainability goals through creative and financially advantageous structures. Rob excels at turning energy or infrastructure improvements into projects that drive client business goals, creating a positive impact on cash flow and buildings that become assets for clients instead of liabilities.

Name and Title	Qualifications and Experience	Relevant Experience
 **Reggie Ingram** **(PRIMARY CONTACT)** Regional Executive, Comprehensive Solutions	• 35 years of experience • 3 years with Trane • B.S. Construction Management Business Marketing, University of Northern Iowa	• Yolo County • City of Livingston • Western Placer USD • Oregon Institute of Technology (OR) • Mt Hood Community College (OR) • University of Washington-Bothell (WA) • City of Battle Ground (WA)

Function

Reggie serves as a Regional Senior Account Executive focusing on Complex Energy Solutions and the ESCO market for municipalities and educational facilities in Northern California. He has participated in the development of projects that incorporate multiple financing structures and technologies, including solar, micro grids, central plant replacement, central plant optimization, lighting retrofits, high-efficiency HVAC systems, building automation, energy storage, water-saving applications, building analytics, facility management and much more.

Name and Title	Qualifications and Experience	Relevant Experience
 **Michael Day** Trane North America Utility/SmartGrid Team Lead	• 26 years of experience • 4 years with Trane • Graduate, Nuclear Engineering Program, Naval Nuclear Power School • Mechanical Engineering Student, California State University, Sacramento	• TowerJazz (Jazz Semiconductor Inc.), Newport Beach, CA: Central Plant Retrofit and Optimization ($3.1M0029 • Shasta County, CA: Revenue Enhancement ESCO ($8.9 million) • Town of Yountville, CA: Revenue Enhancement ESCO ($3.5 million) • Lead Program Developer, Santa Rosa Advanced Microgrid Project implementation plan ($5.8M) • Lead Program Developer, Trane offer to Sacramento Municipal Utility District (SMUD) on Virtual Power Plants • Developer, Regional Council of Rural Counties (RCRC) MIST Energy Efficiency Grant program ($30.6M)

Function

Michael leads the team that analyzes utility supply side opportunities in order to convert building electrical load into valuable grid products. He has specialized experience in complex projects, emerging energy technologies and utility/smart grid markets. Michael currently holds a patent on a modular heat recovery ventilator, with approximately 10 separate additional patents currently pending for energy storage and efficiency devices, as well as energy contracting and finance business methods.

Name and Title	Qualifications and Experience	Relevant Experience
 **Dean Perry, PE, CMVP** Project Development Leader	• 5 years of experience • 5 years with Trane • Bachelor of Applied Science degree in Mechanical Engineering, California Polytechnic University • Professional Engineer • Certified Measurement & Verification Professional	• Yolo County • City of Livingston • City of Anaheim • Rialto Unified School District • Los Alamitos Unified School District • Simi Valley Unified School District • Morongo Unified School District • Chino Valley Unified School District • Central School District

Function

In his previous role as a Field Engineer, Dean had to find creative, technical and repeatable solutions to problems occurring with new HVAC&R technology on dynamic timelines. This process has helped form a work ethic centered on fast, innovative solutions with solid engineering analysis. Currently, Dean has several roles as an Energy Engineer and Project Developer. These duties include energy modeling, engineering analysis, and reporting for Investor Owned Utility (IOU) incentive programs; and project development for Comprehensive Solutions and Large Turnkey projects.

Name, Title and Location	Qualifications and Experience	Relevant Experience
 **Greg Lisk, PMP** Project Developer **Office Location** 3253 E. Imperial Hwy Brea, CA 92821 USA	• 12 years (Project Development) • 3 years with Trane • Associates of Applied Science Degree – Computer-Aided Drafting • PMP (Project Management Professional) Certification	• Yolo County • Los Alamitos Unified School District • Simi Valley Unified School District • Morongo Unified School District • Chino Valley Unified School District • Brawley Unified School District

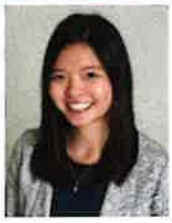
Function

Greg has developed and managed numerous complex energy-based projects in both the public and private sector that have resulted in a positive customer experience and increased energy savings. He has significant expertise working with executive-level and facility director-level decision-makers, providing energy and utility base strategies that create impactful building asset improvements. Greg has extensive experience developing and implementing projects that incorporate lighting, controls and other energy efficiency measures while maintaining industry standard practices, California Title 24 compliance, as well as any utility financing options available. Greg's detail-oriented focus on evaluating energy efficiency opportunities has led to a significant impact toward customer core sustainability goals, while providing value-engineered solutions.

Name and Title	Qualifications and Experience	Relevant Experience
 **Matthew Boorany, PMP** Project Developer	• 9 years of experience • 4 years with Trane • EllisDon Corporation: M&E Coordinator (2010-2015) • Bachelor of Applied Science degree in Mechanical Engineering, Queen's University, Kingston, ON • Project Management Professional	• Los Angeles Unified School District • Whittier Union High School District • Western Placer Unified School District • Simi Valley Unified School District • TowerJazz (Jazz Semiconductor Inc.)

Function

As a Project Developer for large performance-based contracting projects, Matthew's key activities include leading and collaborating with team members on client and opportunity qualification, preliminary and detailed audit scope analysis, construction feasibility and cost estimating. He also provides the team with energy and financial analysis results for performance contracts, complex turnkey and other contracting offerings.

Name and Title	Qualifications and Experience	Relevant Experience
 **Wendy Chung, CEM** Energy Engineer	• 2 years of experience • 2 years with Trane • Bachelor of Applied Science degree in Environmental Engineering, University of California, San Diego • Certified Energy Manager	• Yolo County • City of Livingston • City of Anaheim • Rialto Unified School District • Los Alamitos Unified School District • Simi Valley Unified School District • Chino Valley Unified School District • Central School District • Placer Union High School District • Woodlake Unified School District • Romoland School District

Function

Wendy strives to incorporate energy efficiency and sustainable technologies into our projects. She collaborates with project developers to assess building performance and to develop comprehensive facility improvement solutions for clients. Wendy employs TRACE™ 700 or TRACE™ 3D energy models to determine utility savings for various energy conservation measures. She then analyzes data output for trends and/or any deviations that need further investigating.

Name and Title	Qualifications and Experience	Relevant Experience
 **Hannah Seeger** Energy Engineer	• 4 years of experience • 2 years with Trane • Bachelor of Applied Science degree in Mechanical Engineering, Pennsylvania State University • Engineer In Training (EIT)	• City of Livingston • Bakersfield Unified School District • Whittier Unified School District • Western Placer Unified School District • Los Angeles Unified School District • Rialto Unified School District • Los Alamitos Unified School District • Chino Valley Unified School District • Woodlake Unified School District • Twain Harte Elementary School

Function

As an Energy Engineer, Hannah constructs the building performance simulations for the comprehensive energy conservation measures and utility analysis. Her energy analysis ranges from collecting and normalizing utility data to in-depth central plant optimization. For this project, Hannah will follow the engineering development from a preliminary scope to detailed analysis, then concluding with measurement and verification.

Name and Title	Qualifications and Experience	Relevant Experience
 **Patrick Wilkinson, PE, PMP, CEM, CMVP** Regional Comprehensive Solutions Operations Leader	• 13 years of experience • 10 years with Trane • Bachelor of Applied Science degree in Mechanical Engineering, Queen's University, Kingston, ON • Professional Engineer • Project Management Professional • Certified Energy Manager • Certified Measurement & Verification Professional	• Yolo County • Rialto Unified School District • Los Alamitos Unified School District • Simi Valley Unified School District • Morongo Unified School District • Chino Valley Unified School District • Central School District • Antelope Valley High School District • Whittier Union High School District

Function

Pat joined Trane's Los Angeles office in 2010, where he became the lead project developer for our California Comprehensive Solutions business. This involves central plant modernization projects, utility incentive programs, and engineering design. He oversees the development of energy programs and solutions, managing team resources and providing design expertise. Pat recently developed the Pacific Palms Hotel project, which featured complete building HVAC controls and optimization, lighting upgrade, chiller plant retrofit and addition of a thermal energy storage system.

Name and Title	Qualifications and Experience	Relevant Experience
 **Scott Tyra** Project Manager	• 29 years of experience • 3 years with Trane • Business Management and Electrical Engineering studies at Tyler Junior College	• Los Angeles Unified School District (CA) • Central School District (CA) • South Whittier School District (CA) • Viejas Casino Chiller Plant and Rooftop AHU Project (CA) • University of Washington-Bothell (WA) • Mount Hood Community College (OR) • Moro Valley School District (OR) • Stevenson/Carson School District (WA) • Houston Independent School District (TX) • Spring Branch Independent School District (TX) • Brevard Independent School District (FL) • Tallahassee Community College (FL)

Function

Scott has nearly three decades of diversified and progressive management experience, including program management, project management, contract management, construction management, project cost controls, project estimation, contracting, finance management, corporate financial plans, corporate business strategies, risk, auditing, and mentoring. He will be responsible for the day-to-day project operations, contractor oversight and customer liaison.

B. References

Provide a list of at least three (3) project references implemented by your company for local California public agencies in the last five (5) years. The below format & information shall be used when describing each project. Limit your responses to no more than one page per project.

1) Project title and location

2) Nature of firm's responsibility

3) Name, address, and telephone number of contact person

4) Current Status

5) Energy conservation opportunities implemented

6) Describe guarantee performance for portfolio of projects.

The following California references will demonstrate that Trane has the qualifications to deliver successful performance contracting services to Lake County:

- Yolo County
- City of Livingston
- Antelope Valley Joint Union High School District (Phase 2)
- Pacific Palms Resort
- Viejas Casino and Resort

Yolo County	
1) Project title and location	Energy Services Yolo County, California
2) Nature of firm's responsibility	Auditing, design, implementation and ongoing measurement of savings
3) Name, address, and telephone number of contact person	Kevin Yarris, Director of General Services 625 Court Street Woodland, CA 95695 (530) 574-4643 kevin.yarris@yolocounty.org
4) Current Status	Under construction
5) Energy conservation opportunities implemented	43 Facilities: Energy storage, HVAC, LED Lighting Upgrades, Transformers, and Water Efficiency Measures
6) Describe guarantee performance for portfolio of projects.	Guarantee savings annually in excess $500,000

City of Livingston	
1) Project title and location	Performance Contract City of Livingston, California
2) Nature of firm's responsibility	Auditing, design, implementation and ongoing measurement of savings
3) Name, address, and telephone number of contact person	Jose Ramirez, City Manager 1416 C Street Livingston, CA 95334 (290) 398-1721 citymanager@livingstoncity.com
4) Current Status	Under construction
5) Energy conservation opportunities implemented	Solar PV system at four facilities, LED lighting upgrades, HVAC replacements, variable frequency drives, irrigation upgrades
6) Describe guarantee performance for portfolio of projects.	Annual guaranteed savings of 1,146,695 kWh, or $218,133. The calculated Year 1 savings are $242,817.

A cantilevered solar PV system at the Max Foster Sports Complex will provide shade for spectators, in addition to replacing fossil fuels.

Antelope Valley Joint Union High School District Phase 2	
1) Project title and location	Performance Contract Antelope Valley Joint Union High School District Lancaster, California
2) Nature of firm's responsibility	Auditing, design, implementation and ongoing measurement of savings
3) Name, address, and telephone number of contact person	Mat Havens, Director of Facilities Antelope Valley Joint Union High School District 44811 North Sierra Highway Lancaster, CA 93534 (661) 948-7655 mhavens@avhsd.org
4) Current Status	Completed
5) Energy conservation opportunities implemented	Interior and exterior LED lighting upgrades District-wide HVAC replacements
6) Describe guarantee performance for portfolio of projects.	1,969,000 kWh - $183,400 (Calculated) 1,960,000 kWh - $191,900 (Actual)

Pacific Palms Resort	
1) Project title and location	Performance Contract Pacific Palms Resort – City of Industry, California
2) Nature of firm's responsibility	Auditing, design, implementation and ongoing measurement of savings
3) Name, address, and telephone number of contact person	Hee-Won Lim, Vice President & General Manager Pacific Palms Resort One Industry Hills Parkway City of Industry, CA 91744 (626) 854-2302 hwlim@pacificpalmsresort.com
4) Current Status	Completed

5) Energy conservation opportunities implemented	Central Plant Retrofit including:
	• One (1) 500-ton, high-efficiency, centrifugal chiller
	• Thermal Energy Storage (TES) System
	  ○ One (1) 350-ton, ice duty screw chiller
	  ○ Sixteen (16) ice storage tanks
	• Chilled water pumps and condenser water pumps
	• Plate and frame heat exchanger
	• Variable frequency drives on pumps and fans
	• Lighting retrofit – interior and exterior
	• Five (5) high-efficiency 2MM BTU boilers

6) Describe guarantee performance for portfolio of projects.	2,249,425 kWh - $236,649 (Calculated) 2,261,984 kWh - $348,986 (Actual) $202,938 first year operational savings

Viejas Casino and Resort	
1) Project title and location	Performance Contract Viejas Casino and Resort – Alpine, California
2) Nature of firm's responsibility	$8,083,600
3) Name, address, and telephone number of contact person	Jim Wild, General Manager Viejas Casino and Resort 5000 Willows Road Alpine, CA 91901 (619) 659-1987 JWild@VIEJAS.com
4) Current Status	Completed
5) Energy conservation opportunities implemented	New 3,000-ton central plant New building automation system External LED lighting upgrades Lighting control upgrades Air handler variable speed retrofits Backup generator infrastructure
6) Describe guarantee performance for portfolio of projects.	2,706,572 kWh, $596,000 (calculated) 2,751,810 kWh, $618,356 (actual) $283,000 first year operational savings

validation will be incorporated into our final construction design. A set of engineered stamped documents will be established for the project's scope of work. To provide full transparency, a third-party engineer will stamp the construction documents. The final documents will be reviewed with your team and then submitted for construction permits.

5. Mobilization

Upon completion of the construction documents, each component of the project will be organized into **sub-trade packages**. Each sub-trade package will be validated with our proposed design, schedule and pricing structure. Sub-trade packages will be bid to local subcontractors, in most cases.

We will team with local subcontractors to develop our baseline pricing structure and anticipated scopes of work. This will minimize risk and any surprises after final engineering and design is completed. Upon the completion of the validation and engineering process, the sub-trades will be contracted and will begin to mobilize. **Material and equipment will be ordered and expedited** in conformance with the project schedule.

6. Implementation

The project schedule will be finalized and reviewed with your team prior to implementation. Along with the weekly customer team meetings noted above, Trane holds **weekly construction progress meetings** with all subcontractors and major suppliers. This ensures that the construction progress remains in compliance with the project schedule.

Each subcontractor is required to maintain and submit daily logs documenting manpower, areas worked, tasks completed, and any safety issues or concerns. These are reviewed by the project manager and site superintendent in order to **monitor manpower requirements** and maintain accurate records for future reference. The site superintendent will closely coordinate the work of all trades involved in the project.

Trane requires all subcontractors to hold **weekly safety meetings** to address any anticipated safety concerns or any outstanding safety issues that need to be addressed. Trane's safety department requires strict compliance with the company's safety policies and all OSHA requirements. Our parent company, Ingersoll Rand, enjoys an excellent Safety Experience Modification Rate (EMR) of 0.55, compared to the industry average of 1.00 – which means we have a much stronger safety track record than our peers.

Sets of **as-built drawings** will be updated on a daily or weekly basis as required, according to progress made by each subcontractor. This enables our customers to maintain an accurate record of the construction after project completion. The as-built drawings are submitted at the end of the project with the equipment installation, as well as operations and maintenance (O&M) manuals of all installed components.

7. Commissioning

Upon the completion of construction, our team will **identify a list of deficiencies or incomplete components** in the scope of work. Each subcontractor is required to complete all outstanding items within a reasonable timeframe and within the project schedule. Subcontractors also are required to submit final as-built drawings, which will be incorporated into a final record set of documents prepared by the project engineering and design team. These drawings are packaged with all other construction installation documentation, equipment O&M manuals, warranties and any other documentation from the construction phase.

Trane can utilize an in-house or a third-party commissioning agent to perform functional testing and verify that all systems are working to specification. Whichever you choose, the results will be reported directly to your team, and Trane will be held accountable for the results.

8. Construction Closeout

Project Closeout involves both a legal and transitional component. All commissioning documents described above, as well as other contract documents, are turned over for a complete and accurate record of the performance contracting project's construction phase. Trane then receives a **signed certificate of completion** from Lake County, acknowledging that all project requirements to date have been achieved. The warranty start dates and terms for each newly installed piece of equipment or system are established and communicated. The project is then transitioned to Trane professionals who will provide any contractually required maintenance, measurement and verification (M&V) or other services.

Bonding Capacity

Trane has a bonding capacity of $100 million per project and $300 million aggregate. This ensures that your project will not be terminated or delayed due to financial constraints.

Insurance Coverage

Trane exceeds the insurance requirements listed in the RFQ.

	RFQ Requirement	Trane Coverage
General Liability	$1,000,000	$7,500,000
Automobile	$1,000,000	$5,000,000
Employer's Liability (Workers' Compensation)	$1,000,000	$3,000,000

Mitigating Disruptions to Daily Operations

Virtually all of our performance contracting projects feature construction activities across multiple buildings and work in occupied spaces. Our local team is experienced in scheduling work activities and implementing ECMs in a way that minimizes disruption to daily operations. We will work with your team to develop an effective project schedule and coordinate all implementation activities with project site representatives. For work in occupied areas – such as lighting and water conservation upgrades – we will attempt to schedule work during low-occupancy times, as well as publish work schedules and estimated completion times well in advance.

Based on input from each building manager, we will develop a detailed phasing plan for each facility for your team's review prior to the start of construction. This phasing plan will include allowable work hours, days of the week that work is to be completed, and acceptable shutdown times for each occupied space.

To keep your project on track and to minimize disruption to day-to-day activities, our team will:

Trane Self-Performed Work

Trane has in-house capabilities to self-perform all auditing, project development, design, energy engineering, project management, building automation installation, and measurement and verification. We will use local mechanical, structural and electrical engineers as needed – and qualified partners for installing HVAC units and wiring as required. A Trane Project Manager will oversee all installation and be your direct point of contact during implementation.

The following table shows which of the services identified above are provided directly by Trane through in-house resources, and which services are partially subcontracted:

	Trane In-House Services	Subcontracted Services
Auditing	X	
Design	X	X
Procurement/supply of equipment	X	
Engineering	X	X
Construction management	X	
Lighting	X	X
HVAC	X	X
Controls	X	X
Measurement and verification	X	
Staff training	X	
Ongoing maintenance of building equipment	X	

We have business relationships with many mechanical and electrical subcontractors throughout California who we can draw from for resources to supplement our own technical capabilities.

Subcontractor Selection

Here are the key steps in our subcontractor selection process:

- Trane will solicit suggestions of subcontractors that have demonstrated a strong record of performance within your facilities. We will be cognizant of any targets that you may have for the project, including utilization of small businesses, minority-owned or women-owned business enterprises.
- All potential subcontractors will be evaluated and qualified to ensure adequate licensing, bonding, insurance, etc. They will also be screened based on safety ratings.
- Together with your team, Trane will identify a list of firms that will be invited to bid on specific scopes of work.
- Subcontractor proposals will be reviewed jointly with your team, and final selection also made together and agreed upon by Lake County. Selection will be based on the overall value.
- Trane will then develop a detailed subcontracting plan.

Subcontractor Evaluation Processes

Trane scrutinizes potential subcontractors on their success meeting the following criteria:

Cost	Cost should be considered, but not at the sacrifice of quality.
Subcontractor Reputation	What do your peers say about the subcontractor's job performance? What has been their past experience working on Trane projects?
Proper and Comprehensive Response to Your Proposal	Do the subcontractors respond to your technical proposal with understanding and comprehension?
Adequate Manpower Resources	Does the subcontractor have adequate manpower available to meet the schedule of this particular project. Will subcontractor have to pull resources from other subcontracts of trade organizations to meet project schedule?
Good Financial Condition	Does the subcontractor have the required financial strength to complete the project on time?
Insurance and Bonding Abilities	Both of these illustrate the financial stability of the company. Obtain documentation regarding the subcontractor's insurance status, and be named as an additional insured on their policy.
Health & Safety Program	Make sure subcontractors have their own program and will not just rely on your organization for health and safety information, direction and correction.
Certifications / Licenses	Ensure that the subcontractors are properly certified or licensed to provide their services.
Quality Assurance Programs/Standard Operating Procedures	How does the subcontractor ensure quality services?

2. Local Management Ability

Describe your ability to locally manage the project.

The majority of the work involved during the analysis and construction phase will be performed by professionals based in Trane's fully staffed, company-owned Sacramento office located at 4145 Delmar Avenue in Rocklin. This 120-person office will be supported by our Los Angeles team as required to keep your project on schedule and on budget.

We currently have more than 100 Trane technicians dedicated to promptly serving customers throughout California on a 24-hour basis.

3. Trane's California History and Capabilities

Describe your history and capabilities in the State of California and focus on solutions for Counties.

Trane has been serving California customers since 1940 and currently has 300 employees based in the state. Our Sacramento office serves central and northern California.

Trane has a dedicated California-based ESCO organization, as well as Equipment, Controls System, HVAC Service, and Parts offices in several California cities. These are not satellite offices – they are fully staffed Trane offices ready to serve California clients by California residents.

Our ESCO team is comprised of Energy Engineering and Energy Project Developers, Project Managers and M&V Engineers in California. This team of 21 people includes 5 Professional Engineers, 4 Certified M&V Engineers, 3 Project Management Professionals, and open positions to keep the team growing. In addition, should Lake County choose Trane as your partner, you would have specific personnel dedicated to the analysis, development, construction, start-up, and turnover of your project.

The project team, led by Reggie Ingram and Michael Day, would coordinate the interaction between the Trane team and Lake County staff, reducing your staff workload, ensuring access to the best sources of knowledge in the business, and constantly bringing the view of Lake County into the process.

As a leading HVAC manufacturer, Trane works with virtually every mechanical contractor and design engineering firm in California. This gives us a significant advantage of other ESCOs because we know which firms are the best at their specialized scope of work. This assures our clients that each Trane energy services project will include superior subcontractors in every discipline.

California County Customers

We serve many counties with Trane HVAC and controls systems, as well as services for our systems and many other manufacturers. Among them are:

- Butte County
- Calaveras County
- Fresno County
- Humboldt County
- Imperial County
- Los Angeles County
- Kern County
- Kings County
- Merced County
- Nevada County
- Orange County
- Riverside County
- Sacramento County
- San Bernardino County
- San Diego County
- San Joaquin County
- Ventura County
- Yolo County

As noted in the References section, we have just signed a $10 million contract with Yolo County to improve their facilities. This is a guaranteed savings project, similar to the one envisioned for Lake County. We will begin mobilization for construction in February 2020, with an estimated completion date of March 2021.

California General Contractor's License

Trane is licensed by the State of California in eight different trade categories, under license number: 561796, as shown below:

Contractor's License Detail for License # 561796

ISCLAIMER: A license status check provides information taken from the CSLB license database. Before relying on this information, you should be aware of the following limitations.

CSLB complaint disclosure is restricted by law (B&P 7124.6) If this entity is subject to public complaint disclosure, a link for complaint disclosure will appear below. Click on th link or button to obtain complaint and/or legal action information.
Per B&P 7071.17, only construction related civil judgments reported to the CSLB are disclosed.
Arbitrations are not listed unless the contractor fails to comply with the terms of the arbitration.
Due to workload, there may be relevant information that has not yet been entered onto the Board's license database.

Business Information

TRANE U S INC
DBA TRANE

3253 E IMPERIAL HWY
BREA, CA 92821
Business Phone Number:(888) 849-2911

Entity Corporation
Issue Date 03/24/1969
Reissue Date 03/05/1998
Expire Date **03/31/2018**

License Status

This license is current and active.

All information below should be reviewed.

Classifications

C20 - WARM-AIR HEATING, VENTILATING AND AIR-CONDITIONING
B - GENERAL BUILDING CONTRACTOR
C36 - PLUMBING
C10 - ELECTRICAL
C-2 - INSULATION AND ACOUSTICAL
C38 - REFRIGERATION
C-4 - BOILER, HOT WATER HEATING AND STEAM FITTING
A - GENERAL ENGINEERING CONTRACTOR

D. Demonstrated Competence / Responsibility

1. Unique Qualities and Capabilities

Describe any unique qualities and/or capabilities of your firm that would benefit the County and its projects including but not limited to risk and/or safety.

As mentioned throughout this response, what differentiates the capabilities of Trane as an ESCO partner for Lake County is the tremendous breadth and depth of knowledge and capabilities that we bring to energy contracting. There are many threads of experience that are woven together to form the tapestry of Trane's capabilities as an ESCO. Here is a brief review of a few of these capabilities, as well as notes on how these capabilities work together in getting our customers the best possible outcome from an ESCO project.

The truly unique element of Trane as a partner in developing an ESCO project is not any one of the following capabilities, it is how all of them are harnessed to work together in delivering unmatched service.

ESCO Experience

As an ESCO contractor, Trane brings the reliability that comes from having completed hundreds of millions of dollars of ESCO projects in just the last few years, decades of ESCO experience, and the balance sheet of a major global energy-focused firm. In our ESCO projects, we typically provide all required analysis, engineering, procurement, construction and start-up services needed to deliver self-funded turnkey energy projects, all while maintaining a single point of contact and guaranteeing performance.

In addition to showing we know how to successfully complete projects to public sector standards in general, our California team has the specialized expertise, local experience, licensing and personnel needed to complete any type of work likely to be appropriate for Lake County, from basic efficiency and solar PV projects to energy storage and Advanced Energy Projects. For example, there are hundreds of firms that could complete the relatively simple paperwork needed to request interconnection for a carport solar PV project, but there are far fewer firms that would know how to participate in the much more involved process around connecting a major In Front of Meter renewable generating asset with Automated Generation Control to the grid, should that asset be a good choice for Lake County.

Market Participant

California, like most areas of the country, has a wholesale energy market (California Independent System Operator, or CAISO) that significantly impacts the economic viability of ESCO projects, and Trane Energy Supply Services (Trane ESS) is there. As a registered Scheduling Coordinator in CAISO, (as well as other ISOs such as PJM, ERCOT etc.), our understanding of what is technically required for market participation is used in several different ways.

One important way wholesale energy expertise is leveraged is knowledge of current and future energy pricing. As an active market participant, we gain and maintain knowledge of both current energy market prices and where futures contracts are trading. We are also aware through market postings of the current portfolio positions of major potential counterparties that could buy grid impacts from a project in Lake County. This current and forward looking energy market knowledge gives us valuable advance insight during project development of where the economics of any given energy measure are likely to be in the future, not just where they have been in the past.

Another area where the experience of Trane Energy Supply Services helps is experience dealing with utility industry counterparties. Many of the most lucrative energy opportunities available to local governments involve dealing with utility market participants known as Load Serving Entities (LSEs). LSE off-taker agreements can be an important element in an optimized ESCO project. These agreements often offer substantial project revenue beyond simple bill reduction, and favorable contract structures offer customers reduced risks. Put simply, **working with LSEs can bring additional revenue to standard ESCO projects**, and this additional cash flow can be used to include more capital work in an ESCO project than can be done without that subsidy. This means that more capital expenditure gets taken off the regular County budget, more money flows back to the general fund, or in some cases both.

To participate with LSE off-takers though means adhering to a host of rules needed to access this sector. Whether it is understanding of federal rules on procurement, technical knowledge of product characteristics, or simply the relationships with procurement staff needed to introduce project concepts, Trane's ESS experience brings revenue opportunities to our ESCO project development process that would not be possible without this specialized market knowledge.

Grid facing technology leadership

The technical knowledge of market requirements from our Energy Supply Services team has also helped inform the development of the Trane GridFlex platform. GridFlex is designed to sell grid impacts of energy projects into organized markets, document value to off-takers of grid impacts, and pull that value back to the project. To do this, GridFlex provides a central database used for grid interaction, monitoring and verification, and even market settlement. To do this, the GridFlex team is highly involved in developing standards for interactions with different markets.

This knowledge of technical requirements is again leveraged by the Trane ESCO team. Knowledge of grid-facing revenue opportunities, off-taker demand, and technical performance criteria is used to sort through available options early in the ESCO process, ensuring that valuable opportunities are not bypassed, and that valuable time is not wasted on examining intriguing options that later prove unable to work because of a fatal flaw.

Energy Technology Leadership

Trane is a global leader in both the manufacture and installation of building controls. This brings experience integrating Trane systems with existing building controls from almost any other manufacturer. It also means experience in the commissioning of the resulting systems – knowledge that is equally important to both economic and comfort performance.

All of the preceding contracting and controls domain experience is sharpened by our experience as a manufacturer of end-use heating, ventilation, and air conditioning (HVAC) equipment. For over a century, Trane has led in the research and manufacture of some of the most reliable and energy-efficient HVAC equipment in the world. This end-use technology leadership is best demonstrated by how Trane has had a dominant market share in the HVAC equipment market for decades. It also provides us with unequaled knowledge of what can be accomplished with equipment from an energy perspective while still maintaining space comfort.

Beyond energy technology like HVAC and controls, Trane is also at the forefront of developing the specific tools needed for the emerging Advanced Energy Economy. Examples include integrated storage technologies to allow utilities and other LSEs to interact with distributed networks of behind the meter assets. Trane is using its early leadership in areas like the peaking use of bio-methane to develop to significantly improve the economics of Advanced Energy Projects.

Trane has also developed or acquired technology relating to the development of Advanced Energy capabilities in projects associated with both potable and waste water systems, again **bringing new revenue opportunities to local governments**. Just like our cross-functional teams increase the knowledge base of available opportunities for our ESCO clients, our energy technology leadership provides our clients with the broadest possible array of options when assembling an overall portfolio of energy measures.

An important point to note is that the ESCO arm of Trane is not at all restricted in which company manufactures the energy equipment we use on a given project. While Trane is rightfully proud of the equipment we make ourselves, we also regularly find that the best solution in a given circumstance is a machine manufactured by others, such as what is needed to fit existing ductwork and curbs. As an ESCO focused on what is best for our partner clients, we have a complete commitment to using the units that are right for a given project, even if they are manufactured by others.

Integrated Finance

Almost all ESCO projects require some form of finance. Finance is inherent in the ESCO business model, where some form of loan or other finance instrument pays for the first cost of

the project, debt service payments are made over time, and the savings/new revenue cover some or all of those payments. However, the best form of finance is the dollar a customer does not need to borrow in the first place. This concept of integrated finance, where utility incentives and grants buy down project costs prior to borrowing money, is central to how Trane has done business for many years.

Grants

In Section A.1: Qualifications and Experience, we provided a list of the local government ESCO projects Trane has completed in California in recent years. Virtually all of these projects included substantial grant funding.

Utility Incentives

As mentioned in greater detail in Section A.3: Project Financing Expertise, Trane has over a decade of experience administering incentive programs for utilities. This experience as an actual utility Program Administrator yields a depth of knowledge of incentive procedures that is vastly different than just filling out application paperwork as a user of incentive programs. **This utility program-specific knowledge correlates directly into maximizing incentives** captured for a project, while not wasting time on chasing incentives that will never be granted.

Tax Equity Finance

Local governments cannot use depreciation or tax credits, while private industry certainly can. Trane harnesses this differential in some local government projects to reduce the net amount financed. However, private industry usually wants a higher return on investments than those who fund public infrastructure, so care must be taken in analysis to ensure that the net result is positive for the local government.

Another way that Trane differentiates itself is this search for an optimized finance package. Aggressively searching for available grant and incentive dollars is absolutely in the interest of our customers, and is a central part of what differentiates Trane in the ESCO market.

Policy Leadership

Both directly, and through work with organizations, Trane is at the forefront of policy discussions. Examples of groups we work with include NAESCO, the California Energy Storage Alliance (CESA), and the Representatives of California's Rural Communities (RCRC). Policy areas where Trane is actively engaged include multiple proceedings at the California Public Utilities Commission (CPUC), California Energy Commission (CEC) and California Independent System Operator (CAISO), as well at the state and federal legislature.

This direct participation experience in the regulatory and legislative process delivers specific and enduring benefits to ESCO projects developed by Trane. Whether it is incentive programs approved by the CPUC, grants becoming available from the CEC, or pilot funding available

through legislation, Trane customers are able to use that early knowledge to have applications ready on opening day – yielding the best chance of securing critical funding.

Participation in regulatory and legislative processes is another way by which Trane helps our partner customers choose solutions that work for the long run. Understanding trends also helps Trane design ESCO solutions that avoid issues in the future. These issues are often visible to those involved in the regulatory process, but less well-known to others. A good example of this experience involves the impact of regulatory change on the economics of solar projects, which is described in greater detail in the Risk Mitigation section below.

By combining all of these disparate knowledge and experience areas into a single team, Trane gives public sector clients like Lake County the best chance to make an ESCO project work, now and in the years to come. None of these capabilities are superfluous, and the absence of any of these capabilities would put the final project at some form of disadvantage.

Whether the goal is maximizing cash flow, eliminating large capital expenses from future budgets, ensuring critical resilience in the face of power shut-offs, or making the largest possible contribution to a de-carbonized future, the unique capability of the Trane team is to bring this unparalleled wealth of experience to the development of a potential ESCO project. By harnessing knowledge that extends beyond the traditional boundaries of ESCO work, Trane makes the final product better.

Risk Mitigation

Risk Mitigation is a critical and often overlooked element in analyzing, evaluating and selecting any set of energy project measures for an overall ESCO project. It goes without saying that a focus on worker safety in contracting is an absolute requirement, and Trane has dedicated Environment, Health and Safety personnel for whom this is a sole focus.

However, risk mitigation is not solely focused on ensuring the safety of the public, County staff, Trane construction personnel and subcontractors, it also extends to mitigating the economic risks associated any project. This is certainly true for public sector customers that are both required to be responsible stewards of limited public funds, and may also lack deep subject matter knowledge of issues and trends impacting energy markets. This is even more of an issue when energy markets are undergoing such rapid and fundamental change, as they are today.

A good example of this experience involves the impact of regulatory change on the economics of standalone solar photovoltaic (PV) projects. Because of increasing amounts of PV energy on the grid and the prevalence of Net Energy Metering (NEM) rate structures, energy markets were being distorted. This did not only result in economic distortions like negative electricity pricing at the wholesale level, it also resulted in potential electric system power quality issues tied to so-called "Duck Curve" events. By the middle of the last decade, it was clear that action was needed, and the CPUC opened several proceedings to examine the issue and decide upon solutions. Trane participated in those proceedings.

The solution decided upon by the CPUC took several forms, but the biggest changes involved a revision in the way that NEM rates worked, and a shift in Time of Use (TOU) periods to later in the day. By moving the high-value/high-priced electric price hours to later afternoon/early evening, the economics of PV were fundamentally transformed. The basic fact is that the CPUC decision meant that the cost of electricity when the sun is up was going to decline, and this was going to have a very direct negative impact on the future value of solar PV systems. However, the impact was not immediate. The relevant CPUC proceedings were held in 2016, but the new rates were phased in across the state over time. In fact, PG&E (the final utility to make the change) will not transition to the new rates until November 2020.

Delayed or not, the impacts of these rate changes on the economics of standalone PV are dramatic. In the case of San Diego Gas & Electric for example, electricity generated during the peak PV mid-day output period (10 a.m.-2 p.m.) is now classified as being "super off-peak" for most of the year. Because of this, the value of electricity generated during this period in some cases dropped from over 20¢/kWh to under 8¢/kWh. For local governments that had signed long-term agreements with PV companies, this became a significant issue. Before the TOU period change, they may have been paying 15¢/kWh to save 24¢/kWh; after the change, they are now paying 15¢/kWh to save 6.5¢/kWh. Worse, the 15¢/kWh rate was the starting point in many of these contracts.

Many of these PV finance contracts had mandatory annual rate increases, where the amount charged to the local government will continue to rise even if the value of the electricity they are producing has dropped dramatically. In extreme cases, we have seen smaller local governments locked into contracts where they are now paying more than 35¢/kWh for electricity, even though the cost of buying that power from the utility has dropped (or is about to drop) to a fraction of that amount. Fundamentally, this was an issue of risk. Local governments were at risk for higher energy costs if rate structures changed, but this risk was underappreciated by local government PV buyers – and often either underplayed or completely ignored by energy companies focused on selling PV systems.

Trane took a different approach. Once the CPUC process around Time of Use period change was largely known in 2016, **Trane started getting that information out to the public – even before the ultimate decision was finalized**. For those customers interested in installing new solar PV projects, we helped them understand that the economic benefit of these projects would drop significantly in the future once the new rates kicked in for them, and we used indicative future rates to demonstrate the probable change in value.

The decision remained theirs, but they had better information, and many changed direction once they understood it. Sometimes customers chose to cancel PV projects outright, sometimes they took a higher short-term rate but negotiated "make whole" provisions with financiers so that their net cost could never be worse than buying energy from the utility. In all cases however, **customers armed with energy market knowledge were able to recognize a risk that few others saw, and respond accordingly**.

Beyond simply looking at known potential future impacts, risk mitigation can take other forms as well. For example, in several cases we are working on combination renewable energy/energy storage projects for local governments where impacts are sold on a long-term basis to a Load Serving Entity. Under these agreements the grid impacts are usually sold on a long-term, fixed-payment basis.

Contracts like this feature both fixed debt service payment and fixed utility revenues coming in, with system performance guaranteed by Trane. This arrangement removes down-side risk, but does come at the cost of losing potential upside if the value of prices for electricity dramatically increase in future years. However, for most local governments, avoiding potential negative outcomes like the ones suffered by many in the standalone PV projects mentioned above are far more important than potentially losing a marginal future income increment.

Another area where Trane regularly helps our customers mitigate risk is through energy supply contracts. Trane Energy Supply Services procures future contracts for electricity and natural gas for both private and public sector clients from wholesale energy suppliers. This is an effective way to hedge against the impact of energy cost volatility on budgets. This volatility hedge risk mitigation mechanism can be used in ESCO projects in multiple ways. Direct access to natural gas providers and long-term agreements can deliver near-term savings and protect against future price increases, while hedge strategies can be used to make a project whole if commodity prices decline.

While this is a sophisticated strategy that has not often been used by smaller public sector clients, it is available to those that choose Trane as an ESCO partner due to the integrated nature of our energy contracting business.

In addition, the participation of the Trane ESS team in the energy futures market gives our ESCO customers a means to see future prices that are "over the horizon" in a way that is difficult or impossible to do without this insight. For example, this ability to see indicative future electricity pricing several years ago was critical to our customers who were considering solar PV at the time. Many customers who entered into long-term PV contracts that looked good at the time now wish they'd access to forward-looking data when they were making their decision.

Regulatory, legislative, hedging and market participation experience cannot eliminate or mitigate all risk, but it is certainly better to navigate to the future looking forward through a windshield than it is to navigate to the future only looking through a rear view mirror.

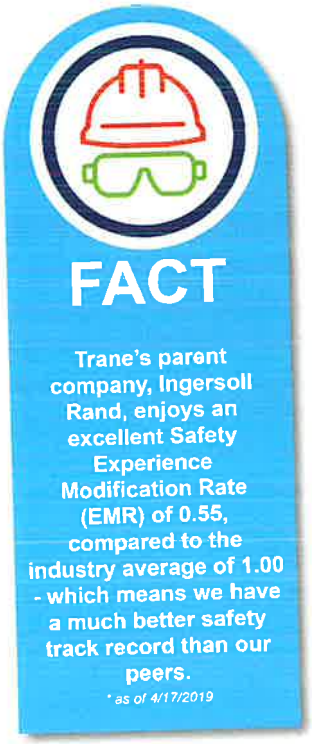
Safety Approach

A rock-solid safety plan is the best way to protect people and building occupants during a construction project of this nature. It also keeps unforeseen schedule delays to a minimum. Trane will publish a site-specific safety plan for your review prior to mobilization of resources. The plan includes a mandatory orientation session for all on-site personnel.

Trane pre-screens and qualifies subcontractors to fully vet their safety records and ratings, citation history for the last five years, OSHA logs for the past three years, history of payment to vendors, financial viability, bonding capacity, proof of insurance, review of their company safety policy including employee commitment and involvement, worksite analysis, hazard control and training.

This in-depth subcontractor screening and selection process reduces the risk of safety issues and poor performance during the construction phase. Fortunately, Trane already has excellent relationships with numerous California subcontractors who have passed our screening based on their safety records and have performed well on past projects.

We always ensure that our employees and subcontractors have the proper safety training for the tasks they will perform – and meet all local, state and federal requirements, as well as our own. Failure of any site personnel to follow the site-specific safety plan will result in their immediate removal from the project.



Safety Planning Summary

Following is a summary of the safety planning that Trane implements for each project:

- **Hazardous Material Exposure**: For some facility upgrade projects, workers may be exposed to hazardous materials such as lead paint, mold, PCBs and mercury. Before work begins, we obtain hazmat inventories/assessments that the building owner has completed. We also identify hazardous materials that may need to be disturbed during the work, and which are reasonably observable during our energy audit and other walk-throughs. Prior to the start of construction, any identified hazardous materials that would need to be disturbed during the work will be fully abated as agreed between Trane and Lake County. Documentation shall be submitted to Trane prior to work commencing.
- **Chemical Exposure**: In addition to any chemicals currently in use at the facilities, it may be necessary to use chemicals during construction. Trane can provide the Lake County and a Chemical Declaration form for chemicals proposed to be used during construction, along with a detailed safety plan, and a spill prevention and cleaning protocol.
- **Fall Protection**: We will develop a site-specific fall protection work plan for all operations where workers are exposed to fall hazards greater than four feet. Trane

requires that all site employees maintain 100% fall protection when exposed to a fall hazard. If work at 10 feet or above is required, a written Site-Specific Fall Protection Plan will be submitted to Lake County for approval before project mobilization.

- **Electrical Work, Lockout/Tagout and Power Shutdowns**: Trane prohibits work on live electrical systems, excluding troubleshooting or testing. For troubleshooting, testing or exposure to live electrical systems within four feet of electrical hazards of 50v or more, Trane will follow NFPA-70E guidelines. This includes proper qualification, authorization, training and required personal protective equipment (PPE). Trane will gain approval from each facility representative before shutting down power. Trane and/or its subcontractors will follow OSHA lockout/tagout procedures when shutting down power. Isolated power sources will be installed with a lockout device and lock to prevent inadvertent startup.

- **Hot Work**: Trane and its subcontractors will comply with hot work permitting procedures for any welding, cutting, burning or spark-producing operation. Trane on-site supervision will track and monitor daily permits. Trane will follow fire prevention procedures while performing hot work, including the acquisition of a hot work permit (if required) and providing a fire watch for the duration of the work and for 30 minutes after completion.
- **Confined Spaces**: Trane and each contractor working in a confined space will review the construction plans, existing spaces, regulatory requirements, and classification of each space as either permit-required or an alternative space to develop a site-specific confined space procedure. Trane will list specific oversight and entry procedures in a written plan. Trane will develop a site-specific job hazard analysis (JHA) that covers the work in the confined space and the associated confined space procedures. The site-specific safety plan and JHAs must be approved by Trane and your organization before work begins.
- **Occupant Safety**: Trane will escort off the project anyone who does not adhere to the No Smoking and No Substance Abuse policy. We will provide dust and physical protection to workers and building occupants as needed where work is being performed. Trane and/or its subcontractors will at all times seek to protect facility employees, pedestrians, third parties and property from injury or damage. Trane and/or its subcontractors will provide a means of safe and legal extraction of any and all noxious fumes generated – and provide barricades, warning signs, spotters, etc. as needed to block off any excavations, obstructions, overhead hazards or other potentially hazardous areas in order to protect facility and construction personnel, equipment and materials.

- **Abrasion, Cutting and Blunt Trauma**: All workers are provided with and required to wear personal protective equipment (safety glasses, hard hats, footwear and high-

visibility clothing) and other tools or equipment as appropriate for the type of work. Trane performs regular safety inspections to verify that all safety equipment is maintained, used and in proper working order.

- **Use of Cranes**: Any crane lift will comply with Trane's Crane Policy and all applicable state and federal regulations. Trane and/or its subcontractors will ensure that the crane provider submits a lift plan for the operation, which must be approved by Trane and Lake County before mobilization.
- **Use of Forklifts**: Any forklift use will comply with all California and OSHA forklift policies, as well as our own. Specific forklift type and model will be listed in the Equipment Declaration Form and will be submitted to Lake County for approval prior to mobilization.

Trane Intelligent Services

Your building has data streaming through it that is ready to be deciphered and translated into usable information. The Trane Intelligent Services offering connects you and your buildings to our expert advisors, who use facility data to make operational improvements that are aligned with your core mission.

What can Intelligent Services do for you? Provide real-time performance insight. Improve system and energy efficiency. Offer greater visibility and control over your buildings, making them more comfortable and energy efficient.

Intelligent Services provide a process for continuous building improvement: Identify opportunities, prioritize work, implement the projects, validate the results…and repeat. We'll start at the level and scope of support you need now, then easily add services or loop in more facilities in the future. We are your partners for the life of your building.

GOALS

To start, Trane collaborates with you to determine business needs, timelines, budget and objectives.

ANALYTICS

Through monitoring and analytics, we identify how key building systems are using energy: efficiently or inefficiently.

PRIORITIZATION

Next, we help you prioritize and complete projects to capture the energy cost savings.

IMPLEMENTATION

Then Trane can do the work to install the solutions. Trane is a leading energy service provider and a DOE qualified Energy Services Company (ESCO) for over 20 years.

VALIDATE

You'll see proof of the progress you're making on sustainability goals, energy cost reduction and other key performance indicators (KPIs) through documentation, dashboards and some of the industry's most sophisticated visualization tools.

Trane Intelligent Services has four major components

Building Performance

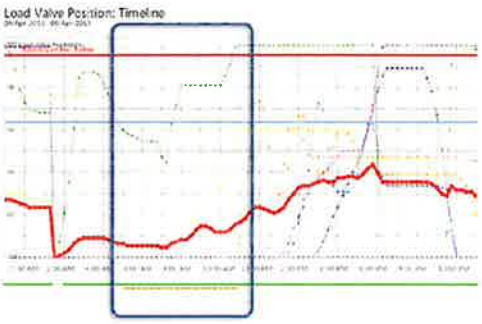
Energy Performance

Active Monitoring

Energy Optics

Building Performance

Trane building professionals analyze data and equipment behavior in the context of the overall system, discovering hidden information and opportunities for improvement.



- System-wide initial assessment
- Data-driven analytics
- Prioritized recommendations for improvement
- Follow-up consultation and reports, identifying next steps

Active Monitoring

Trane professionals maintain 24/7 watch over your critical building systems, proactively detecting issues and analyzing alarms, and initiating responses according to your specific rules of engagement.

- Detailed analysis of alarms and issues
- Remote resolution, if possible
- Initiation of on-site service, if necessary, giving the Trane team information that will expedite the repair

Energy Performance

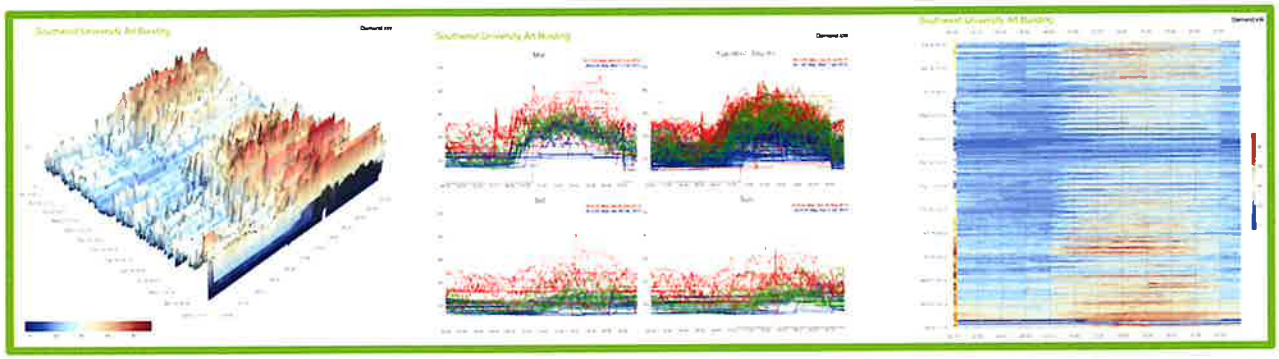
This cloud-based building energy management system (BEMS) service uncovers energy waste in every corner of your building.

- Real-time energy monitoring
- Robust energy baselines, ongoing analysis and powerful visualization tools
- Centralized tracking and reporting
- Ongoing professional Trane advisory services

Energy Assessment

Two advanced tools—Trane Energy Optics® and Trane Energy Analyzer—illustrate your building's energy use. Because if we can see a problem, we can change it.

- Snapshot and analysis of your building's energy profile
- Action plans and recommendations
- Trane professional insights into cost savings and sustainability
- Ongoing expertise and support from Trane



Energy Supply Services

Energy management is a major contributor to the success of your operations. So, it's important to manage it strategically. This requires a comprehensive approach that not only examines the way buildings consume energy, but also how energy is procured. Trane Energy Supply Services provides strategic energy procurement and management to help organizations realize savings, manage risk and achieve business results.

Backed by more than 100 years of industry leadership in building and energy management expertise, HVAC systems, and a dedicated nationwide supplier network, Trane offers a complete energy management perspective no one else can match.

Energy Procurement and Management

Trane leverages more than a quarter century of strategic energy procurement and management services for clients of all sizes, who together spend billions of dollars on energy each year. Our offerings provide measurable results that will maximize your energy spend and help meet your business objectives.

Industry expertise: We have the long-standing industry relationships and expertise to manage all of your needs, from energy source to point of end use.

Breadth of services: Our broad capabilities and customer-centered approach allow us to develop a solution specific to your needs – from simple procurement to full-service energy management.

Tools and information you can use: We interpret complex data and provide you with actionable, easy-to-understand information you can use to make energy decisions and take full advantage of energy market opportunities.

Whatever level of energy service you require, we can deliver it. From energy consulting and bill management to procurement and energy auditing, we give you with the tools to meet your energy needs as cost-effectively as possible.

Your energy spend can have tremendous impact on your bottom line. Look to Trane for the industry expertise to power your energy needs.

Best practice strategies for **purchasing renewable energy** vary based on your specific goals, geographic area, local regulations, and state and local incentives. We have deep expertise in all facets of renewable energy procurement and we'll help you navigate the terrain.

Managing Your Energy Costs

Trane offers the cost-savings potential that comes from working with proven energy procurement and management professionals who stay alert to opportunities with 24/7 energy market vigilance. A dedicated account executive will be assigned to you to oversee the strategic development and tactical execution of your account.

Demand Response	Demand response ensures that your building's energy use is fully optimized and monetized without any adverse effects on tenant comfort or operations. We partner with clients to understand demand response opportunities in their local utility market and develop an equipment-specific plan for automated participation.
Risk Management	We help you strategically time your energy purchases to lock in pricing when markets are favorable. This helps you stabilize cash flow and stay within budget targets.
Lower Energy Costs	We analyze usage and leverage an understanding of national, state and local market dynamics, supplier relationships, and local/state regulatory expertise to help you maximize your energy dollars.
Cost Savings through Annual Budgeting	We help you set next year's energy budget based on historical usage, changes in market pricing or forecasted utility rates. This can save you time and money, while ensuring greater budget accuracy.

Strategic Energy Management

Energy savings are achieved through careful analysis of several factors. Trane has the people and industry relationships to formulate a complete energy supply strategy that takes into account supply, demand and sustainable solutions that will help you achieve your energy goals.

Knowledge Really Is Power

Improving your energy management and realizing positive business outcomes begins with energy awareness. Our Energy Supply Services offering empowers customers with the knowledge they need to maximize energy savings and leverage the markets to procure energy at the best terms possible.

Helping you understand the energy supply: We help you become more energy savvy through webinars and seminars covering market overviews, regional outlooks, and in-depth analysis of key energy topics.

Energy market publications: We invest in information-gathering so you don't have to. We'll provide literature with data and discussions surrounding energy market fundamentals, including forward pricing in key regions, weather, peak demand and input fuel pricing.

Industry-leading energy supply and demand capabilities: Our analyses of buildings and energy systems can turn data into dollars. Together, these services enhance supply procurement by ensuring optimal pricing and contract terms from energy suppliers.

Informed energy planning: Trane Energy Supply Services can create a strategic energy plan for you that incorporates proprietary data and forecasts, risk tolerance assessments, and purchasing strategies. This can reduce your price risk and exposure to market volatility.

Storage-Backed Distributed Energy Resources

Trane offers thermal energy storage solutions that can provide financial and environmental benefits to help meet your operational goals. Thermal energy storage reduces a building's electricity use during expensive peak demand periods. Our Thermal Battery Cooling™ System can help overcome pricing volatility and the intermittency of renewable generation by enabling load flexibility. Load flexibility offers rate mitigation and supports renewable generation.

A Trane controlled air- or water-cooled chiller charges Ice Bank® energy storage tanks when excess or inexpensive energy is available – at night, for example. The energy storage tanks discharge when electric demand and electricity prices are high, or when the utility asks for the discharge to occur. Just one Ice Bank tank can store 18 kW over six hours to cool more than 7,400 sq. ft. That's 108 kWh/day per tank.

Thermal energy storage in a 500,000 sq. ft. commercial building can typically shift up to 1 MW a day of peak load. The systems generally include Trane air- or water-cooled chilled water systems, along with ice tanks or stratified chilled water tanks. Trane controls systems allow flexible operational times to keep up with the changing rates from utilities and allow electricity market participation. Project paybacks can range from 2-4 years, depending on the difference in demand charges.

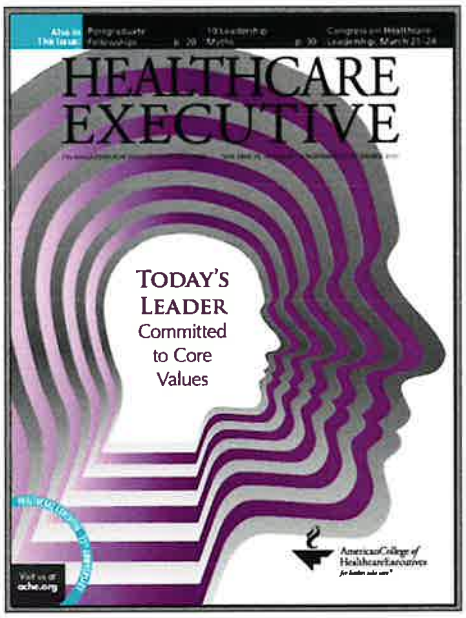
Smart Electric Vehicle Charging: Trane is committed to continuous technology development programs that embrace ideas new to the industry. These development teams work hand-in-hand with industry experts to bring these technologies to fruition. We will work with clients to implement a smart electric vehicle charging solution when it fits the project scope and financial expectations.

Public Relations and Community Outreach

Trane will collaborate with your staff to craft a public relations plan to help Lake County receive positive recognition for your energy savings program. Here are a few examples of publicity that have resulted from similar projects.

Trade Publication Example

Our performance contracting project for Passavant Area Hospital in Jacksonville, IL was showcased in Healthcare Executive, a publication of the American College of Healthcare Executives (ACHE):



Local Newspaper Example

Our work with Clairborne County Schools in Tennessee resulted in this local newspaper article:

CITIZEN TRIBUNE — Local & State — Monday, January 14, 2013 A-3

Energy program in Claiborne schools shows more than $400K in savings

BY JAN RUNIONS
Tribune Correspondent

HARROGATE – It appears the Claiborne school system is beginning to reap the rewards of lowered energy costs via a TRANE program.

The school board heard the particulars during the regular monthly meeting on Thursday, when Trent Williams summarized the results gleaned from a Powell Valley Electric Cooperative report.

Williams said the school system had managed to save nearly $40,000 more than the $399,872 estimated savings guaranteed by TRANE, during its first full year after the initial installation period.

Williams said the report, for the period ending Sept. 30 of last year, clearly shows a substantial savings during the installation period, as well. TRANE initially guaranteed a savings to the county of $78,665. In fact, the school system reaped $223,000 in actual savings, he said.

"I feel real good about this," said Williams, adding he had wanted to insure that the figures were accurate – the reason for requesting the PVEC report.

According to initial TRANE contract estimates, the county would need to cough up over $12 million to address all the energy concerns. Board member Sam Owens said it was eventually negotiated down to a $5.2 million guarantee.

The reduced coverage made it necessary, however, for the school system to cover the costs of some of its energy needs, including the purchase of 14 additional units to replace aging obsolete strip heat units.

Energy savings would have been more dramatic if the school system could have faithfully adhered to TRANE's formula, said Claiborne Director of Schools Connie Holdway.

"There were times when we needed to override the system and turn up the heat or lower the air to prevent the students from being too uncomfortable, which was the humanitarian thing to do. Our kids are our number one priority," she said.

Williams said there were a few humidity problems that needed to be worked out.

"We're at the point where we're almost done tweaking the system," he said.

In other action, the board welcomed Lisa Jessie, the new Principal at Soldiers Memorial Middle School. Jessie replaces outgoing Principal Jim Shipley, who retired due to health issues.

Starting time for future monthly meetings of the Claiborne School Board is moved up an hour to 6 p.m., beginning with the February meeting.

Web Site Article Example

Trane's exterior lighting upgrade for the City of Vestavia Hills, AL resulted in this web site article. Trane presented the City with an Energy Efficiency Leader Award since the project cut energy consumption in half.

THE VESTAVIAN

The business and lifestyle magazine of Vestavia Hills

Home | About Us | Advertise | Submit | Jobs Listing | Contact Us

BREAKING NEWS Vestavia Hills High School Graduate Competes in International Orienteering C

HOME » PLACES » CITY » TRANE PRESENTS CITY OF VESTAVIA HILLS "ENERGY EFFICIENCY LEADER" AWARD

Shown here at the awards ceremony are (from left): Steve Ammons, council pro-tem for Vestavia Hills, Ala.; George Pierce, city council member for Vestavia Hills, Ala.; Rick Carson, account manager – complex sales for Trane; Alberto C. Zaragoza, Jr., mayor of Vestavia Hills, Ala.; John Henley, city council member for Vestavia Hills, Ala.; Jim Sharp, city council member for Vestavia Hills, Ala.; and Chuck Bowers, area manager for Trane.

Trane Presents City of Vestavia Hills "Energy Efficiency Leader" Award

At the July 14, 2014 City Council Meeting, Rick Carson and Chuck Bowers, representatives from Trane, presented Vestavia Hills with the **Energy Efficient Leader Award** in recognition

2. Training, Maintenance and Operation Services

Describe ongoing training, maintenance and operation services.

Training Services

New equipment will achieve a substantial part of the savings that you expect from a performance contract. Proper training of your staff on how best to operate that equipment will complete the picture. Furthermore, an investment in boosting the skills of your facility staff will keep your buildings at peak operating efficiency.

Trane provides complete training resources to help you achieve these goals, including both technical competency and behavior modification training to underscore the importance of energy conservation.

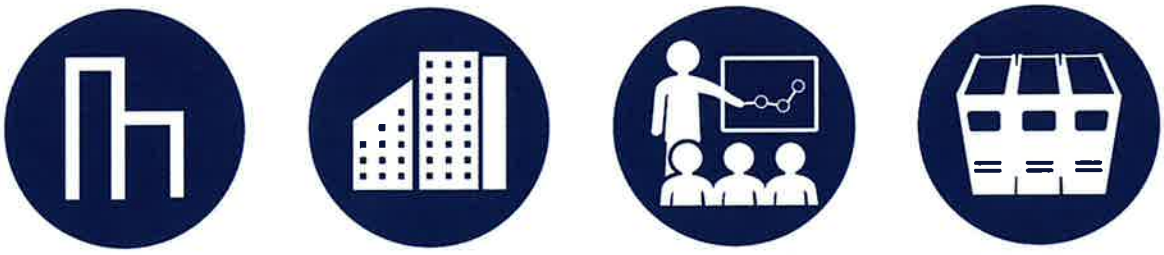
To begin with, we'll assess the skills of the people who operate and maintain your buildings. This will involve interviews with facility managers and staff. Once we understand their competency levels, we'll recommend a training plan to upgrade their skills in order to maximize the energy savings promised by the new equipment. **The selected training program will be mutually agreed upon by both of our organizations.**

Several Training Options

Trane offers a variety of training programs to choose from. These can be conducted at your location, at a nearby Trane office, at our national training centers, or through training manuals. We can include any combination of these resources, depending on your preference. This project includes on-site training; the other training options below are available for an additional cost.

Our course instructors have strong controls and HVAC service backgrounds. They draw on the expertise of Trane applications engineers, product engineers, technical support engineers and product development teams to provide the best training possible.

Select the Training Method That Works for You



On-Site Training *(your facilities)*

Office Training *(Trane local office)*

Trane University *(factory training)*

Air Conditioning Clinics *(manuals)*

On-Site Training: This training is designed around applications specific to your facilities. Examples include:

- System training to understand chillers, dehumidification, and rooftop variable air volume units
- Controls training to obtain the best performance from your building automation system
- Boiler plant efficiency and maintenance, lighting, and water conservation measures
- Shadowing Trane technicians while we provide contracted maintenance services

Office Training: Trane has the ability to customize training for your employees at our offices. This includes the material covered in our Trane University courses listed below.

Trane University: Trane University offers Building Systems and Controls training in St. Paul, MN and Technical Service training in La Crosse, WI. These courses also can be conducted at Trane offices throughout North America. In either case, our instruction will further advance your staff's understanding of systems and the interaction between various components. Well-trained facility managers and technicians will minimize service costs by efficiently identifying and correcting problems.

Building System and Controls training offers a comprehensive portfolio of technical courses to help you effectively monitor and coordinate your HVAC equipment and systems using your Trane building automation system.

Technical Service training offers factory training for commercial systems service, maintenance and operation. These courses are designed to increase technician competence and confidence when servicing HVAC and controls systems.

Trane A/C Clinics: Trane has developed several training manuals to support our in-person training efforts, including an A/C Clinic. This comprehensive course covers the fundamentals of heating, ventilating, and air conditioning. Each clinic includes a student workbook, with corresponding quiz questions/problems.

Trane University is accredited by the International Association for Continuing Education and Training (IACET) and is authorized to issue the IACET CEU

Staff Involvement

An important, but sometimes overlooked aspect of a performance contract is the impact of building occupants on the project's overall success. In addition to facility staff, your employees should understand the importance of energy conservation and how their day-to-day actions can contribute to the project's total savings. Through this type of education, we are working to change the *culture*, not just the *building*. The goal is to provide your staff with no-cost or low-cost strategies that they can implement quickly, thereby increasing the program's overall savings.

Maintenance and Operation Services

Trane provides a wide range of offerings that enable you to enjoy the highest levels of performance from the systems in your facilities. Whether you're installing new equipment, maintaining an existing system or completely upgrading your infrastructure, we can provide the expertise to match your specific needs.

Choose from among the following services

- **Repair Services** – Trane technicians can service all brands and types of HVAC units
- **Scheduled Agreement** – Periodic maintenance of systems to ensure peak operating performance
- **Select Agreement** – Added protection against unexpected equipment failures
- **Remote Diagnostics** – Ability to monitor your critical building systems remotely and quickly troubleshoot as necessary

Repair Services

Trane is a global leader in repair, replacement and maintenance services for all brands and types of HVAC units. When you choose Trane technicians, you can be confident that you're receiving dependable service from highly trained industry professionals.

Our local technicians can perform repair services for a wide range of indoor comfort systems, including:

- Air filtration
- Air handlers
- Chillers (air-cooled and water-cooled)
- Chilled water and condenser water pumps
- Controls (digital and pneumatic)
- Cooling towers and evaporative coolers
- Condensing units
- Fans
- Humidification
- Motors and motor starters
- Rooftop and unitary HVAC units (electric and gas-fired)
- Variable frequency drives

Knowledgeable Trane technicians will troubleshoot your equipment using data compiled from experiences with clients around the world. Your Trane technician will look beyond the immediate failure, identifying weaknesses or potential areas of unreliability.

Scheduled Agreement

Under our Scheduled Agreement offering, factory authorized service technicians perform the periodic maintenance required to keep your systems operating at their peak, so you no longer have to plan, schedule or manage routine maintenance. We're fully trained to perform maintenance on Trane HVAC equipment and other brands within your facilities.

Under a Scheduled Agreement, your building systems are maintained by our knowledgeable service technicians using Six Sigma maintenance procedures to deliver the highest level of quality. **Clients often experience lower maintenance costs under a Scheduled Agreement** because impending equipment failures can be identified and resolved before they become major problems.

Select Agreement

Here, Trane takes scheduled HVAC maintenance to the next level. With a Select Agreement, you receive all of the benefits of a Scheduled Agreement, plus parts and labor coverage for maintainable equipment selected by your team – and approved by Trane.

We'll work with you to select the major components and systems in your facility that you want Trane to maintain. **We cover the cost of repairing your system or replacing the pre-selected components, should they fail.** We'll help you consider acceptable performance ranges, reliability and risk tolerance to determine the level of coverage you require for your HVAC maintenance needs.

Remote Diagnostics

Quickly detect failures in your building with round-the-clock monitoring from the Trane Intelligent Services center, where our building professionals provide support 24 hours a day, 365 days a year. Beyond alarm detection, Trane building professionals with deep industry expertise analyze each incoming alarm and initiate action to resolve the issue, thereby maintaining efficiency and peak performance. The ability to address some problems remotely can reduce the need for service calls – and the amount of time your staff spends on facility-related problems.

Local Office Service Capabilities

Lake County will be supported by our Sacramento office, which has 75-truck-based service technicians who can promptly respond to any request. Their experience level ranges from journeymen to experienced senior technicians and supervisors – some of whom possess decades of HVAC industry experience. **Our service technicians are skilled in maintaining and repairing not only Trane equipment, but nearly every manufacturer in the industry.**

While an increasing amount of diagnostics can now be done remotely, Trane still believes in a local service component. We have factory technicians who reside in neighboring Yolo and Sonoma Counties. While it cannot be guaranteed in advance, past experience shows that it is highly likely that Trane's interest would be well served to hire local staff if we were to develop a significant project in Lake County.

Our local team also has the expertise to perform system upgrades and replacements, including major mechanical equipment such as chillers, cooling towers, air handlers, pumps and coils. Trane's local offices, including Sacramento, have dedicated professionals in each of the following areas:

- **Contracting Solutions:** Total comprehensive solutions, including guaranteed energy savings performance contracting and large turnkey installation projects.
- **Trane Equipment:** Energy-efficient, environmentally friendly HVAC equipment for both comfort and process applications.
- **Controls:** State-of-the-art building automation systems. Our local offices are complete with dedicated Controls Demonstration Centers for client education and training.
- **Service:** Our service technicians are skilled in maintaining and repairing not only Trane equipment, but HVAC systems from nearly every manufacturer in the industry.
- **Supply:** Full line of Trane parts, non-Trane parts, maintenance supplies, safety equipment, refrigeration, and maintenance/service tools warehoused locally.
- **Training:** Fully equipped training facilities for seminars and training on industry issues and technical information critical to your operation.

3. Contract Defaults

Have you ever defaulted on a contract? If yes, where and why.

No.

4. Suspension or Debarments

Has your firm ever been suspended or debarred by any government agency? If yes, please explain.

No.

5. Court Claims or Arbitration

In the past five (5) years has any claim against your company concerning your company's work on a project been filed in court or arbitration?

Trane is a multi-billion dollar company that enters into hundreds of transactions on an annual basis and, as such, becomes involved in claims and disputes that arise in the ordinary course of its businesses. As a large company, claims and suits are numerous as many claimants are hoping to tap the deep pockets of a large company. Many of these are unwarranted claims, which often result in dismissal.

Company-wide compiled data of this scope is not readily available and this information cannot be accurately ascertained without extensive and burdensome research. It is the policy of our company to settle claims and disputes amicably and to the satisfaction of our customers. Due to the large volume and because information related to settlements are confidential, we are unable to disclose detailed information on all litigation and claim matters. However, no such dispute or litigation is likely or expected to adversely affect Trane's ability to perform hereunder.

Since becoming as ESCO in 1995, Trane has only been involved in three lawsuits involving performance contracting projects. All three have been resolved by both parties, the most recent one occurring in 2012.

6. NAESCO Accreditation

Preference shall be given to U.S. Department of Energy qualified ESCOs or National Association of Energy Services Companies (NAESCO) accredited ESCOs.

Trane earned accreditation as an Energy Services Company (ESCO) in 2004 from the National Association of Energy Services Companies (NAESCO) and has retained accreditation every year since then. NAESCO has determined that Trane provides its customers with demonstrated competency and accepted industry practices proven to deliver successful projects. This is a testament to our core competencies in all energy-related technical and business disciplines.

NAESCO ACCREDITED ENERGY SERVICE COMPANY

Certificate of Accreditation

This is to certify that

Trane

has participated in the Accreditation Program and Review and has been recognized by the National Association of Energy Service Companies to be an Accredited ESCO.

Natasha Shah
Chair

Terry E Singer
Executive Director

June 2018
Certification of Accreditation covers a period of 36 months from date of issuance.

Accredited since 2004

E. Fee Schedule

Provide your company's cost proposal for the Audit and Project Development Phase only. Include approach to project fees, current hourly rates and all other information about service fees or other billable costs.

Trane uses open book pricing with the belief that cost transparency gives clients a clear understanding of the full project scope, as well as its financial and operational impact. By involving the client early in the decision-making process – from choosing equipment to selecting subcontractors – Trane maintains the transparency that results in the optimal project solution.

We do this by providing linked spreadsheets that represent a breakdown of project costs, pricing, mark-ups, pro-forma details, savings, and contract termination implications.

Our Northern California team has extensive experience with open book pricing through the high volume of work that we perform for state and local government public entities. In addition, as an ESCO authorized to serve federal government clients, we have completed many projects that incorporate the federal ESCO open book pricing methodology. We will conform to the pricing transparency methodology that Lake County desires.

Cost Considerations and Components

Best Pricing Assurance – Any piece of equipment that can be procured utilizing Trane's national joint purchasing agreements, such as OMNIA Partners (formerly US Communities), can be purchased at the associated reduced price. Due to our $16.6 billion annual corporate revenue, we have significant buying power in the marketplace for all types of construction-related products and services. By working together, we will leverage our considerable buying power to benefit Lake County.

Manufacturer Neutrality – Trane recommends equipment solely based on a best value methodology, including customer preference. Rest assured that **we will not include Trane-manufactured equipment or controls when it's not in your best interests**.

Labor Neutrality – Our typical process for a performance contracting project includes procuring quotes from at least three installing subcontractors for each aspect of the project. If you agree with this methodology, the selection of these subcontractors will be a joint effort between Lake County and our team. **You will make the final determination of all subcontractors.**

Project Management Costs – Our management costs include all engineering, permits, full-time project supervision, site costs, commissioning and training for this project. These costs vary depending on the scope and duration of the project.

Preliminary Audit and Project Development Costs – These phases are performed by Trane with no cost to our clients, as they are part of our overhead. Once we define the scope of work

for each site, we will provide preliminary costing and ask for authorization to move forward at that site, which may require engineering or other services. Upon authorization, you will know the agreed upon costs for that site.

Investment Grade Audit Costs – Costs to complete the Investment Grade Audit (IGA) are determined by using internal estimating tools. The project development team assigns their time to an IGA project through the PeopleSoft® system for time sheet tracking and auditing. For this IGA undertaking, we will track and manage schedule progress using the Microsoft Project® scheduling software. During the IGA, the Construction Manager and team are accountable for tracking costs and taking the appropriate corrective action if necessary.

Hourly Fees, Mark-ups and Overhead

We will use the following mark-ups, overhead percentages and rates, and maintain 100% pricing transparency with Lake County.

[Covered in Overhead]		[Rate based]	($/hr)		Markup	Overhead
Conceptual Design Eng	(covered)	Site Superintendent	$ 116 70	Trades - Plans, Drawings	10%	15%
Systems Engineering	(covered)	Project Manager	$ 201 60	Engineering - Structural	10%	15%
Site-walks	(covered)	Bonding	1%	Architect	10%	15%
Engineering Analysis	(covered)	M&V recurring	$ 170 30	Trades - Subcontractors	10%	15%
Energy Costs Analysis	(covered)			Materials	10%	15%
Procurement	(covered)					
Commissioning	(covered)					
CEC M&V report	(covered)					
Safety Meetings	(covered)					
Board Meetings	(covered)					
Warranty	(covered)					

Once we complete the final open book estimate, subcontractors are confirmed, and equipment selections are finalized, we will commit to the total price shown in the open book pricing estimate after all mark-ups and profit. This will become our firm fixed price for the defined scope of work. Any change orders for modified or additional scope must be requested in writing by Lake County.

NO CHANGE ORDERS

Unless you request them. This is Trane's standard policy for construction projects

Award Evaluation Criteria Matrix

As summarized in the table below, we believe that this response clearly demonstrates our ability to provide the requested services to ensure a successful Energy Conservation Performance Contract for Lake County facilities.

Award Evaluation Criteria	Location of Trane's Response
a. Comprehensive Energy Conservation Project Experience [25 points]	
1) Quantity and quality of energy conservation projects in California	Pages 2-3
2) Proven track record of completing successful projects	Pages 2-3 and 45-49
3) Strength of California County references	Pages 45 and 59
b. Solar Project Experience [25 points]	
1) Quantity and quality of solar energy projects in California	Page 9
2) Proven track record of completing successful projects	Pages 10-11
3) Strength of California County references	Page 9 (Madera Community Hospital)
c. Proposed Project Team's Experience [25 points]	
1) Overall experience in successfully completing solar energy projects	For solar energy projects, our local offices are supported by subject matter experts from our Renewable Energy and Power Solutions group, which is explained on pages 7-8
2) Breadth of capabilities to support successful implementation of project	Pages 38-43
d. Financial Strength and Stability [10 points]	
1) Overall financial strength of firm	Page 33
2) Bonding capacity	Page 54
e. Project Financing Expertise	
1) Project financing experience	Pages 29-32
2) Experience with different financing methods	Pages 29-32
f. Public Relations Expertise	
1) Experience with community outreach	Pages 77-78