Proposal prepared for the
Louisiana Public Service Commission

Technical Proposal

Request for Proposals 24-09

Evaluation, Measurement, and Verification Contractor

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TETRA TECH

November 20, 2024

Ms. Kimberly N. O'Brian & Ms. Kathryn H. Bowman
Louisiana Public Service Commission
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Re: Request for Proposals 24-09—EM&V Contractor

Ms. O'Brian and Ms. Bowman:

Tetra Tech, Inc., Frontier Energy, and EcoMetric Consulting (the Tetra Tech team) are pleased to present the enclosed proposal for conducting the above-referenced project. The Tetra Tech team brings unparalleled, directly applicable experience and expert resources to the Louisiana Public Service Commission (LPSC):

Extensive energy efficiency evaluation expertise, including supporting multi-utility, statewide EM&V for other Commissions: the Arkansas Public Service Commission, Hawaii Public Utilities Commission, Maine Public Utilities Commission, Maryland Public Service Commission, New Mexico Public Regulation Commission, Public Utility Commission of Texas, and Wisconsin Public Service Commission.

Substantial knowledge of Louisiana utility customers and markets working on the Quick Start Program across all three investor-owned utilities (IOU). Tetra Tech is the current evaluator for Entergy Louisiana, administered by APTIM. Frontier Entergy has been working with SWEPCO and Cleco since 2017, providing critical support for their Quick Start portfolios through their energy efficiency program tracking system and assistance in program design, delivery, and reporting. EcoMetric brings experienced evaluators, including a history of evaluating all three Louisiana IOU Quick Start portfolios with a prior firm.

Deep familiarity with developing, managing, and using Technical Reference Manuals (TRM). Frontier Energy developed the Arkansas TRM, and Tetra Tech has contributed updates and is using the Arkansas TRM in its EM&V for Entergy Arkansas, Louisiana, and Mississippi. Tetra Tech developed the Texas TRM and works with Frontier Energy on annual updates. The Tetra Tech team also participates in the update process for TRMs in Illinois, New Mexico, New York, California, and Oklahoma.

Practical experience with potential studies based on sound data collection and savings estimates. Tetra Tech conducted two sequential potential studies across the distinct Nevada IOU territories and conducted appliance and equipment saturation surveys used for load forecasting. Tetra Tech recently conducted appliance saturation surveys for MidAmerican Energy and has been a technical reviewer of the statewide Arkansas potential study. Frontier Energy conducted the energy efficiency potential study for Oklahoma. The Tetra Tech team's engineering and modeling expertise will result in realistic savings opportunities to inform the LPSC's decision-making and its administrator's programs.

Committed experts complemented with local support. All key team members have worked or are working in Louisiana or across the South—we are already very familiar with the energy efficiency technologies best suited to warmer weather climates and how to evaluate them. In addition, Tetra Tech has a successful track record working across the state of Louisiana from our offices in Baton Rouge, Lafayette, St. Rose, and Shreveport. Tetra Tech has 342 staff members in Louisiana, including 55 working out of Tetra Tech's Baton Rouge offices. Many of the staff members are engineers who can support the EM&V effort, including on-site, as the statewide EE program rolls out in 2026.

Ability to work effectively across a range of utilities and stakeholders. The Tetra Tech team brings not only extensive experience working with electric IOUs but also with gas IOUs and cooperatives, which will also be part of the statewide EE program. We have organized and presented at numerous statewide energy efficiency working groups, including Arkansas, Texas, Iowa, Illinois, Nevada, and New Mexico. However, engagement with stakeholders goes beyond statewide collaborative meetings—we have led working groups to develop savings for specific technologies, build consensus on program best practices, and gather feedback on regulatory frameworks. We have responded in real-time to feedback from trade allies to support continuous improvements of energy efficiency program design and delivery and practical updates to TRMs or custom M&V methodologies.

Drawing on all the above differentiators, the Tetra Tech team's proposal provides the LPSC with the best-in-class EM&V scope at the best value. We will conduct robust, insightful annual EM&V from 2026−2029 at less than two percent of the lowest program budget provided. The 2025 transition year activities, which include a TRM scoping study, as well as the TRM development and potential study, are priced separately but still result in a bid well under the four percent cap provided in the RFP.

We appreciate the opportunity to bid on this work. As Senior Vice President of Tetra Tech, Inc., I have the authority to sign on behalf of the firm and to commit to the proposed work scope, budget, and rates. All information in our proposal is accurate, and our proposal is valid for 120 days from November 20, 2024. If you have any questions or require further information about our proposal, please do not hesitate to contact our Senior Contracts Manager, Tom Stevens, at 608-316-3646 or tom.stevens@tetratech.com. Our mailing address relative to proposal correspondence is 6410 Enterprise Lane, Suite 300, Madison, WI 53719.

We look forward to hearing from you.

Yours sincerely,

Bonnie Brandreth
Senior Vice President
Tetra Tech, Inc.

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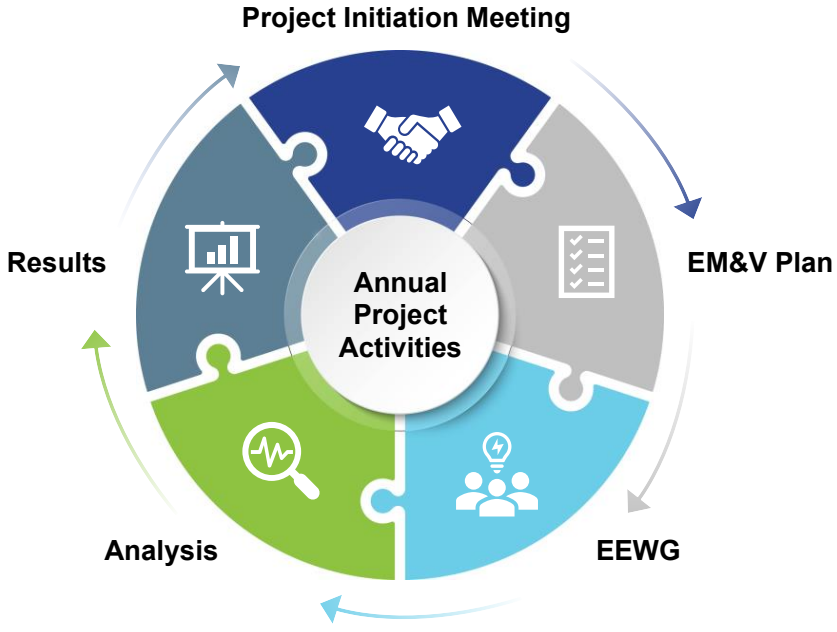
1.0 TECHNICAL PROPOSAL

The Tetra Tech team is best positioned to work with the Louisiana Public Service Commission (LPSC or the Commission), its administrator, and the full range of stakeholders to smoothly transition the Quick Start program to the statewide energy efficiency (EE) program. The Tetra Tech team is already working across all three Louisiana investor-owned utilities' (IOU) Quick Start portfolios and has established productive working relationships while maintaining the independence of the evaluation, measurement, and verification (EM&V).

1.1 OVERALL APPROACH TO THE TRANSITION OF A NEW STATEWIDE EE PROGRAM (RESPONSE TO RFP SECTION A)

1.1.1 Transition Period (Response to A1) The Tetra Tech team stands ready to launch immediately after the contract award, effectively using the 2025 transition period. Our priority for the transition period is to build a solid evaluation foundation and strong working relationships to fully support the roll-out of the statewide EE program. We will organize a project initiation meeting to discuss our proposed EM&V Plan, which will include key activities, analysis, and deliverables. The EM&V Plan will also lay out data needs and communication protocols. Immediately following the project initiation meeting, we will draft the multi-year EM&V Plan, detailing transition year activities set in the context of the four-year EM&V Plan. The EM&V Plan will support the transition from the Quick Start program to the statewide program by identifying what is working well to build upon and where mid-course corrections are needed throughout the four-year budget cycle. Following the review and revision of the EM&V Plan by the LPSC and its administrator, we will engage broader stakeholder input through the Energy Efficiency Working Group (EEWG). While the multi-year EM&V Plan will serve as a roadmap, we will revisit and update it at least annually starting in 2026 to ensure that evaluation activities respond to changing needs and maximize the value of the evaluation to the statewide EE program's success. The collaborative process—seeking feedback first from LPSC and administrators, followed by consensus-building across the EEWG—will continue throughout the first budget cycle.



The Tetra Tech team is committed to the importance of the EM&V planning process to allocate EM&V resources most appropriately to areas where they will provide the greatest value to the LPSC, its administrator, and other stakeholders. This proposal is based on an effective and efficient EM&V scope that couples broad due diligence verification of savings with thoughtful prioritization of in-depth activities. We have proposed a scope, drawing on our years of experience as the EM&V contractor for similar statewide efforts, as well as knowledge of the Quick Start program and Louisiana customers and markets. For example, a priority to be completed upfront annually is a program tracking data review across all measures to ensure they are calculated correctly based on the applicable Technical Reference Manual (TRM) before programs roll out for the next year. This tracking data review will then be updated mid-year to assess whether corrections were made and inform sampling for more in-depth EM&V activities, including engineering desk reviews, on-site measurement and verification (M&V), participant surveys, market actor in-depth interviews, consumption analyses, and other program performance analyses. A final tracking data review will verify the accuracy of savings across all projects completed that year.

1.1.2 Key Performance Indicators (Response to A2) Key performance indicators (KPI) must be consistently measured, tracked, and reported on to ensure objectives are met. We first present the KPIs we will use to effectively manage the Tetra Tech team, followed by our proposal for key EM&V KPIs that will support continuous improvement of the statewide EE program during the first budget cycle. For effective project management of the Tetra Tech team, including our two subcontractors, we will develop an EM&V dashboard of key KPIs based on the EM&V Plan discussed in A1 (Section 1.1.1). We expect the EM&V dashboard to include the following KPIs: EM&V activities by type (desk reviews, on-site M&V, surveys, etc.), deliverables (interim, draft and final plans and reports), budget spend and invoicing, and status, ad hoc, and EEWG meetings.

To maximize the value of the EM&V to the LPSC, our proposed KPIs are directly informed by the Phase II Rules.

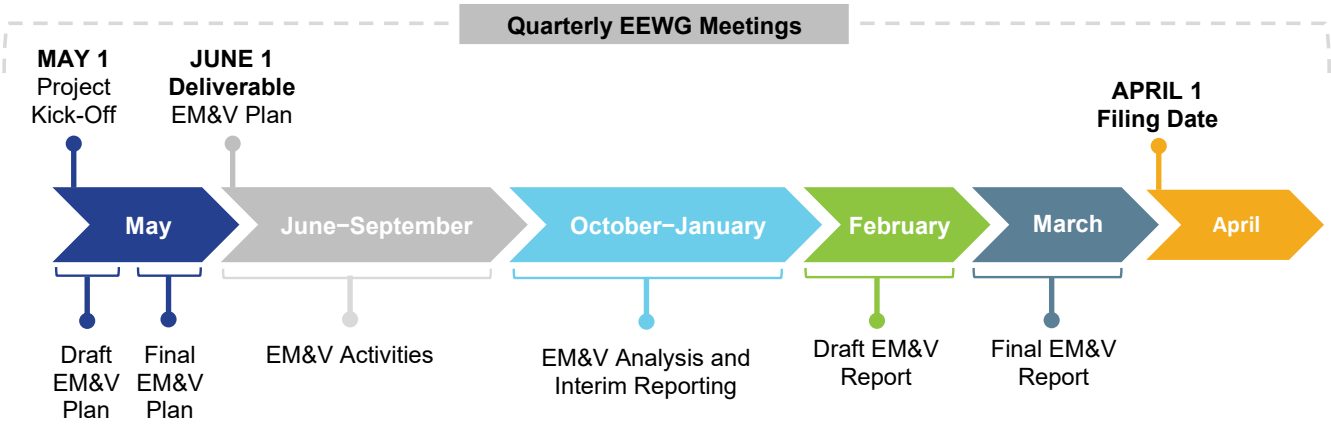
The Phase II Rules clearly articulate the Commission's goals for the statewide program. In many cases, the metrics to meet the overarching goals are clearly defined, such as annual savings targets, cost-effectiveness standards, and budget allocations by customer sectors (i.e., low-income) and across utility territories and customer classes. We have proposed a streamlined objective verification of these straightforward program administrator (PA) KPIs. We will also compare the PA's projected-to-actual achievements for these KPIs.

In contrast, evaluating the effectiveness of program design requires collaboration across the LPSC, the PA, and key stakeholders on what KPIs are optimal to assess the effectiveness of program design. There are trade-offs in what programs aim to accomplish; some programs are designed to reach many customers to introduce them to energy efficiency, while others seek to serve customers comprehensively but reach fewer or specific customer segments. We will design KPIs tailored to different program designs. The Tetra Tech team is well-versed in program theory and logic models; our scope includes the facilitation of a workshop with the LPSC and its administrator to brainstorm KPIs to measure program design effectiveness directly related to the goals, objectives, and desired outcomes across the different programs. We also propose integrating standard KPIs on program effectiveness, such as net-to-gross (NTG) ratios and customer satisfaction, into periodic participant surveys across the four-year budget cycle.

Other Commission goals for the statewide EE program necessitate a mix of leading KPIs to monitor near-term program performance coupled with longer-term analysis of achievements. An example is low-income household energy usage reduction. Monitoring the Phase II Rules low-income budget goal is a leading KPI, but looking at the actual effects on a household's energy burden is a longer-term objective. The Tetra Tech team is experienced in creating and assessing energy burden metrics and stands ready to work with the LPSC and the PA on this metric. Tetra Tech created an energy burden metric and is assessing this for Entergy Arkansas, LLC, which is included as additional information in Appendix F (Section F.6) of this proposal.

1.1.3 EM&V Deliverables (Response to A3) Customizing to follow the Phase II Rules and needs of commissioners and the EEWG, the Tetra Tech team will utilize its extensive statewide EM&V experience to develop deliverables and checkpoints that will ensure clear communication on our plans, processes, analyses, and reporting throughout the transition period and four-year program cycle.

Figure 1. Example Annual EM&V Activity Timeline



Planning Documents. The Tetra Tech team will provide planning documents throughout the transition year and program cycle to deliver a transparent and prospective view of key milestones and activities. These documents include the project kick-off presentation, communications plan, transition year evaluation plan, the 2026−2029 EM&V Plan, an "action plan" process that facilitates the implementation of EM&V recommendations, and sample plans for data collection activities. An annual evaluation planning process will prioritize desk reviews, customer surveys, market actor interviews, and on-site M&V. Working closely with the LPSC and PA, Tetra Tech proposes activities tailored by program and measure type considering key factors that include contributions toward savings, level of savings uncertainty, availability of defensible, relevant secondary data, and importance to future portfolios.

TRM

TRM. If deemed beneficial upon the completion of the scoping study as part of transition year activities, the Tetra Tech team will draft a Louisiana statewide TRM in coordination with the LPSC, PA, and the EEWG.

EM&V Activities, Methodologies, and Interim Results. For all EM&V activities, we will produce documents that detail the purpose, methodology, and goals. A review process will be implemented to allow for feedback and collaboration across the LPSC, PA, and EEWG. The EM&V activities include participant surveys, in-depth interviews with program staff and trade allies, desk reviews and on-site verifications, cost-effectiveness testing, tracking system and desk reviews, and NTG analyses. Interim reporting on these activities will provide early feedback for possible action before the end of the program year and reach an agreement before final reporting and development of action plans to support continuous improvement.

Project Management. Our best practices in project management are anchored in continuous communication. Regular status meetings with the LPSC and PA, monthly status reports, and the EM&V dashboard will apprise LPSC staff of the EM&V team's progress and any issues affecting the schedule, work effort, or evaluation methodology. Project management also includes quarterly EEWG materials and meetings, ad hoc requests and meetings, and Commission support as needed.

Reporting. The Tetra Tech team will produce annual EM&V reports, including a savings verification report of the PA KPIs discussed in response to A2 (Section 1.1.2). These reports will deliver program- and sector-level interim reporting containing process and impact results, along with a final report consolidating all interim reporting and including evaluation and data collection documentation (i.e., guides, surveys, and program materials). Our reporting includes interim reports and discussions for the LPSC and the PA before the final results.

Ad Hoc Reports. These reports will be prepared and delivered as issues are identified, including any urgent matters that affect project success, deviate from the evaluation workplan, or require changes in the proposed work. These ad hoc reports bolster the transparency and replicability of evaluation results fostered by regular and ongoing communication with LPSC staff, the PA, and the EEWG. We will document the changes, what aspects of the planned evaluation are affected (e.g., schedule, sampling, data collection, analysis), how it will be resolved, and the effect on evaluation results and reporting.

1.1.4 Needs from Utilities and Commission Staff (Response to A4)

Based on our understanding of the Phase II Rules, most of the information will reside with the PA, although additional data, such as energy usage, will likely need to be requested from the utilities. For example, APTIM has proposed a data summit to understand the utilities' ability to provide customer data. As part of the project initiation meeting discussed in response to A1 (Section 1.1.1), we plan to conduct a data mapping session, where we will identify the various EM&V data needs and data sources (PA, utilities, and Commission staff). The goal of the data mapping session is for the Tetra Tech team to complement, not duplicate, data already being secured by the PA or available from Commission staff (utility territories' geographic information system (GIS) coordinates are an example of data that Commission staff may already have available).

We will then create a data map that documents the various EM&V data needs and sources. Specific needs from the PA are discussed more under Response to A5 (Section 1.1.5).

While the Tetra Tech team maintains the objectivity of the EM&V, the cornerstone of our approach is collaboration to ensure the EM&V contractor is a partner with the LPSC in supporting the statewide EE program's success.

Our primary need from Commission staff is information sharing through interactive communication protocols. We propose to either be part of the LPSC's biweekly meetings with the PA or to attend the standing biweekly meeting monthly (APTIM has proposed a monthly EM&V Working Group, and this second approach would implement this) and then meet with only the LPSC during the other biweekly period. A priority for the transition year is understanding what worked well and opportunities for improvement from the Quick Start program, which we would like to learn through in-depth interviews with Commission staff. We propose to conduct Commission staff interviews at least annually to ensure continuous improvement. Another need from Commission staff is a review of EM&V deliverables, from plans to data collection instruments to annual reports. The EM&V Plan will include the interview, status reporting, and review protocols with Commission staff that were agreed to at the project initiation meeting, as well as the data map and the Tetra Tech team's secure data retrieval and storage processes.

The utilities maintain a vested interest in the statewide EE program, although they are transitioning from administering the programs directly to supporting them for the benefit of their ratepayers (with the exception of industrial opt-outs). Therefore, the Tetra Tech team will collaborate with utilities as a key stakeholder, seeking input and consensus-building through the EEWG. At the same time, they are a mandatory participant in the statewide EE program regulated by the LPSC and required to comply with specific requests such as energy usage data referenced above. In these cases, we will work to maintain a productive working relationship with the utilities by streamlining data requests and retrieval processes and reviewing our data security protocols to ensure the protection of utility customer information.

1.1.5 Needs from Administrator (Response to A5) The data mapping session discussed in response to A4 (Section 1.1.4) will identify the various EM&V data needed from the PA. The requested data will include complete program tracking data, program manuals, customer contact information, trade ally data and contact information, project documentation to support desk reviews, quality control and quality assurance (QA/QC) protocols, savings calculators, program marketing materials, and calendar.

We will work with the LPSC and PA to eliminate duplicative data requests to the IOUs, cooperatives, and the Commission. We will work to foster a strong working relationship to streamline data requests, establish and implement data security protocols, and identify opportunities for improvement.



1.1.6 References for Key Personnel and Partners (Response to A6) The Tetra Tech team has selected references that can speak to our proposed key personnel and partners' experience conducting similar activities as those that they are proposed to conduct as the LPSC's EM&V contractor. Because firms on the Tetra Tech team have collaborated on projects in the past, references may be able to speak to the performance and quality of work performed for more than one firm on the team, as shown in Table 1. References will remain available to the State for assessment throughout the proposal evaluation period.

Table 1. References for the Tetra Tech Team

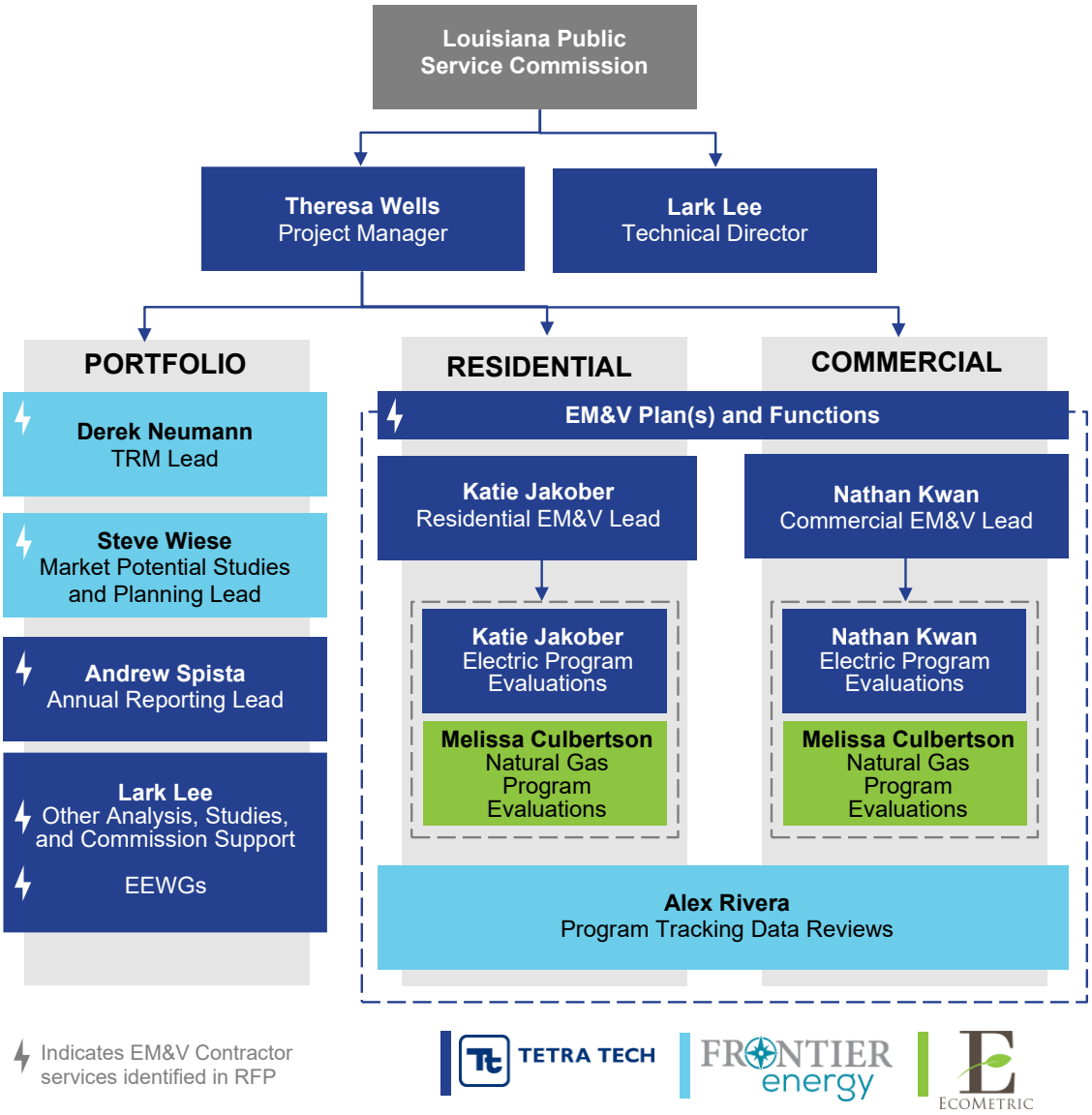
Reference information	Tetra Tech team		
	Tetra Tech	Frontier	EcoMetric
Ramya Ramaswamy, Director, Energy Efficiency Division, Public Utility Commission of Texas Telephone: 512-936-7402 Email: ramya.ramaswamy@puc.texas.gov	•		
Garry Jones, Energy Efficiency Director, Oncor Electric Delivery (Oncor, Texas) Telephone: 214-486-5350 Email: garry.jones@oncor.com	•	•	
Steve M. Mutiso, Energy Efficiency and Consumer Programs Manager, Southwestern Electric Power Company (SWEPCO, Louisiana and Texas) Telephone: 318-673-3502 Email: smmutiso@aep.com	•	•	
Nicholas Hooper, Technology and Product Innovation Manager, CPS Energy Telephone: 210-353-4564 Email: nhooper@cpsenergy.com	•	•	
Kristine Greenway, Energy Services Supervisor, Pedernales Electric Cooperative (PEC, Texas) Telephone: 830-225-3201 Email: kristine.greenway@peci.com		•	
Desmond Machuca, Senior Energy Efficiency Analyst, El Paso Electric Telephone: 915-543-4178 Email: desmond.machuca@epelectric.com	•	•	•

Reference information	Tetra Tech team		
	Tetra Tech	Frontier	EcoMetric
Steve Casey, Manager, Energy Efficiency Programs, New Mexico Gas Company Telephone: 505-697-3586 Email: steve.casey@nmgco.com			•
Alice Herrera, Evaluation Supervisor, Independent Electric System Operator Telephone: 647-616-6130 Email: alice.herrera@ieso.ca			•
Nick Mindermann, DSM Policy and Strategy Consultant, Xcel Energy Telephone: 612-449-2278 Email: N/A **Note: This reference is only able to respond to verbal (telephone) references.*			•
Erin Daughton, Senior Analyst-Energy Efficiency Planning and Measurement, ComEd Telephone: 773-304-6046 Email: erin.daughton@comed.com			•

Descriptions of the project scopes our references can speak to are further detailed in Appendix F, Section F.2 and are accompanied by additional project work to substantiate our team's experience with similar scopes of work.

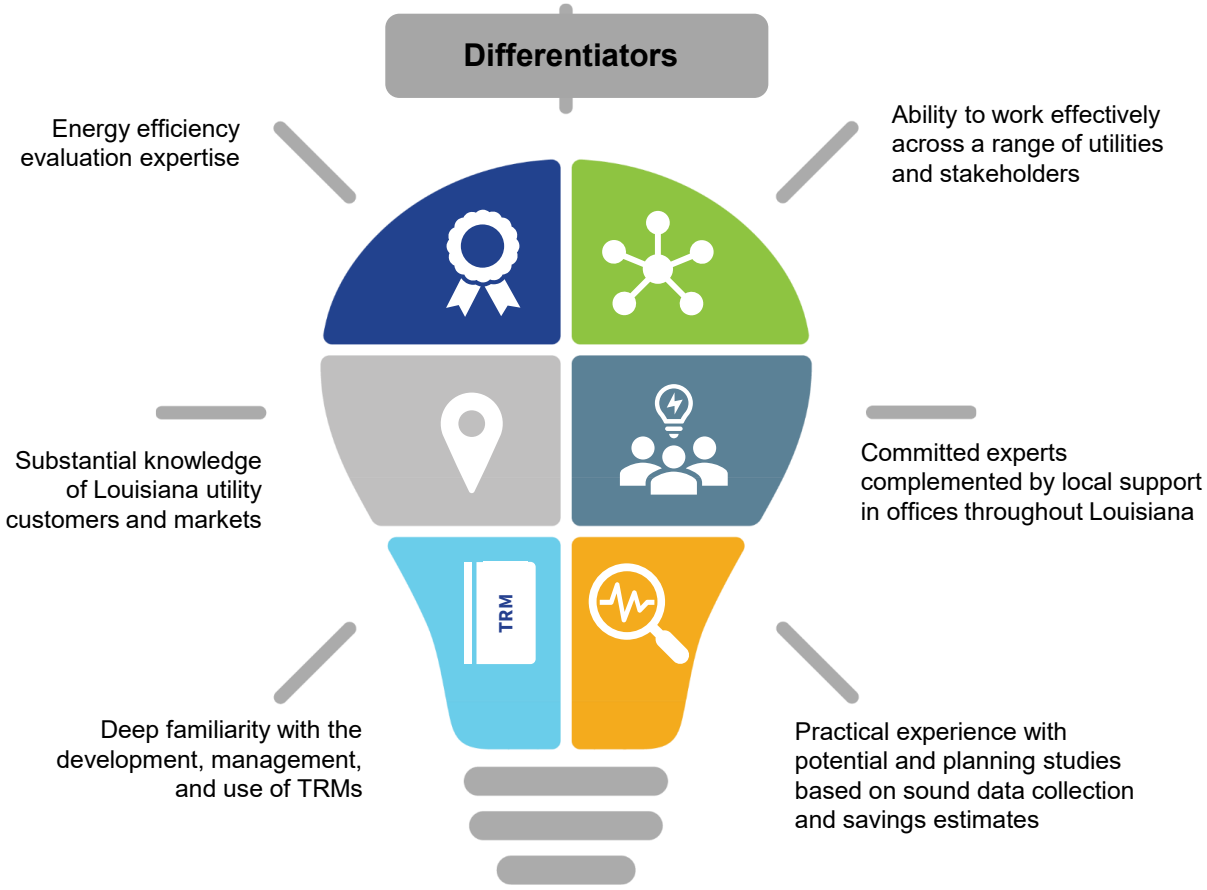
1.1.7 Organizational Chart (Response to A7) Tetra Tech, Frontier Energy, and EcoMetric comprise the Tetra Tech team. Each firm was strategically selected to best address LPSC's EM&V objectives; the rationale behind our partnership strategy is further discussed in our response to A8 (Section 1.1.8). The organizational chart below (Figure 2) clearly maps the services and activities the Tetra Tech team plans to provide—which is further refined by firm—as LPSC's EM&V contractor. The team's streamlined structure ensures quality and clear lines of responsibility and accountability.

Figure 2. Organization Chart—The Tetra Tech Team



The Tetra Tech team has opted to provide additional information on our teaming partners and our team's collective experience and qualifications to further demonstrate an understanding of the market and our ability to perform the required services as LPSC's EM&V contractor. We provide company descriptions, project experience, and individual biographies and resumes for each key personnel in Appendix F. Appendix F also includes resumes for support staff who may assist with evaluation activities throughout the contract duration.

1.1.8 Differentiators (Response to A8) As outlined in the cover letter accompanying our proposal, the Tetra Tech team brings several unique competencies that differentiate us from competitors:



Below are specific examples of these unique competencies that differentiate the Tetra Tech team from competitors.

Advanced Metering Infrastructure Data Analysis. The Tetra Tech team's expertise and value come from the team's unique ability to combine data from disparate sources to produce feedback and recommendations that encompass a comprehensive overview of utilities' energy efficiency programs. Particularly relevant to the LPSC is the team's capabilities of analyzing advanced metering infrastructure (AMI) data given that the IOUs have or are in the process of deploying AMI in their territories. We are well-versed in using AMI data to estimate savings, supporting changes to deemed savings, or validating prescriptive savings estimates used in TRMs. Supplementing AMI data with matched weather observations, property characteristics, or demographic information results in additional cross-classification opportunities, ultimately allowing LPSC to examine specific groups, households, or attributes to determine factors influencing program success. Tetra Tech's data transfer and storage procedures ensure that data are secure during every stage of the extraction, transfer, loading, and analysis process.

Tetra Tech has conducted multiple consumption analyses for the Public Utility Commission of Texas (PUCT) using AMI data and providing overall results across multiple investor-owned utilities and at the individual utility, program, measure, and climate-zone levels. Additionally, using the measure results, Tetra Tech compared the measured savings and the performance of each program to determine if any calibration to TRM deemed savings were needed. Details of Tetra Tech's most recent consumption analysis can be found in the PUCT report sample included with our proposal *(Annual Report Sample_Tetra Tech_PUCT_Volume 1_PY2023.pdf* (see Appendix A of the report)*)*, which is included in Appendix H of this proposal.

Stakeholder Engagement. Stakeholder engagement is critical to improve the accuracy of program savings, support deeper and new sources of savings, and provide actionable and transparent EM&V. However, the Tetra Tech team also brings extensive stakeholder engagement experience beyond EM&V and statewide collaborative meetings, which will allow for opportunities to collaborate with a broad set of interested parties to gain their insights, perspectives, and buy-in related to the LPSC statewide program, regulatory framework, and other areas demand the most critical for program success.

Three examples of the Tetra Tech team's stakeholder engagement expertise in organizing and leading working groups include:

Leading four unique working groups, which met biweekly between January and March 2023, to build consensus on program best practices while gathering and organizing feedback for the PUCT's consideration in future rulemaking. Forty-four stakeholders participated in one of four unique working groups, with the Tetra Tech team serving as facilitators, enabling active dialogue and listening to understand, capture, and document different viewpoints of energy efficiency in Texas. See *Appendix A: EEIP Stakeholder Input Details* in *Volume 1. Statewide Energy Efficiency Portfolio Report Program Year 2022*, included in Appendix H of this proposal.

Leading the Texas Heat Pump Working Group (HPWG) to develop saving algorithms for variable-speed heat pumps to be included in the Texas TRM for the program year 2025 (see PUCT Docket No. 56510). Stakeholders participating in the HPWG included PUC staff, utilities and their implementation contractors, manufacturers, installers and contractors, and energy efficiency organizations like Southcentral Partnership for Energy Efficiency as a Resource (SPEER).

Leading Entergy Arkansas' Non-Energy Benefits Working Group to establish data requirements and build a consensus on methodologies to estimate water, gas, and avoided costs of non-energy benefits. The working group convened staff from Entergy, implementors, and Tetra Tech to ensure transparency and feasibility of sharing data across collaborators. The guidelines established during the working group five years ago are still in place and adhered to annually, allowing for the efficient and secure transfer of necessary data between all parties.

1.1.9 Insurance (Response to A9) We refer the reader to Appendix B.

1.1.10 Financial Qualifications (Response to A10) We refer the reader to Appendix C.

1.2 DEMONSTRATION OF QUALIFICATIONS AND EXPERIENCE (RESPONSE TO RFP SECTION B)

1.2.1 Project and Program Organization, Financial Analysis, and Data Tracking (Response to B1) The Tetra Tech team is well-versed in organizational skills at the program and portfolio levels with a deep understanding of financial analysis and data tracking techniques and best practices.

Organizational Skills. The Tetra Tech team uses modern data management techniques to collect, organize, and report data, working with various sources. We aim to continuously improve the presentation of our results to streamline the implementation of feedback while providing proactive guidance. Our presentation of results varies from written memos and impact result spreadsheets to PowerBI dashboards. We have developed foundational code for use by program administrators to gain earlier insights into program participant activities across utility territories. Additional details about Tetra Tech's utilization of dashboards to organize and manage EM&V activities and data are included in our response to B2 (Section 1.2.2).

Financial Analysis—Cost-Effectiveness Analysis. Cost-effectiveness analyses help program management determine whether to retain, revise, or eliminate program elements. Cost-effectiveness alone cannot provide a complete picture of the success of demand-side management (DSM) programs and measures. However, when taken in conjunction with process and impact evaluation findings, cost-effectiveness results provide a pillar for analysis and comparison, providing relevant stakeholders with a holistic view of their measures, programs, and portfolio(s).

The Tetra Tech team will calculate the cost-effectiveness of LPSC's statewide program at several levels of aggregation, such as statewide, by district, utility, fuel, program, and sector. We have successfully employed this multi-tiered aggregation methodology in other jurisdictions such as Texas, Illinois, Iowa, and New Mexico. This analytical approach allows for isolating the drivers of cost-effectiveness, and this approach can identify measures causing cost-effectiveness to increase and decrease. Once identified, such measures can be explored in greater detail to examine which attribute(s) is mainly responsible for high costs: increased cost components that are specific to the measure, decreased benefits due to changes in TRM values or other measure-specific attributes, or any number of inputs that can alter a program's and measure's cost-effectiveness.

The Tetra Tech team has designed and built current cost-effectiveness and economic impact analysis tools used in Texas, Iowa, and Ontario, Canada. These analysis tools are built to ensure transparency in our methodology.

Calculators are readily available to share with the LPSC, PA, and the EEWG to support cost-effectiveness reviews, whether tracking down differences in calculations or providing feedback on potential changes in portfolios or savings calculations.

Ability to Track Data for Individual Projects and Overall Programs. Participant tracking data is the foundation of evaluation. Since 2012, Tetra Tech has managed the integration of diverse annual tracking data for approximately 100 programs offered by the eight investor-owned utilities in Texas into a centralized EM&V database. The tracking system incorporates both implementation and evaluation tracking data from multiple years of program operation and supports reporting to the PUCT, IOUs (as program administrators), and the public. The Texas EM&V database is updated at regular intervals over the course of each program year, allowing Tetra Tech to conduct efficient verification, sampling, and reporting across utilities, programs, measures, and program years.

1.2.2 Data Analytics Success/Failure Rates (Response to B2)

The Tetra Tech team has extensive experience using data analytics and estimation techniques to evaluate project and program successes relative to goals. A comprehensive approach to evaluation helps refine program strategies and enhance the overall effectiveness of energy efficiency initiatives. Defining key parameters when assessing program success or failure rates of programs, for example, measuring participant engagement with metrics such as dropout rates, measuring participant engagement with metrics such as dropout rates, feedback scores, and active participation rates provides insights into how well the program is engaging with its audience.

The use of real-time progress tracking tools and dashboards, such as those we have developed for other program administrators, ensure effective monitoring and management. These systems allow for the immediate adjustment of strategies to keep programs on target. Moreover, a comparative analysis between projected outcomes and actual results is vital for identifying discrepancies and pinpointing the causes of under- or over-performance. As mentioned in our response to A2 (Section 1.1.2), we will develop a dashboard for the LPSC that includes real-time progress tracking. Examples of real-time dashboards we have developed are shown in Appendix F, Section F3.

For program-level realization rates, we often take our granular results, tracked in a custom EM&V database, and look at the breakdowns by project type (retrofit, new construction, early retirement), building type, HVAC equipment types, etc., to identify populations with similar results. Where consistent results are found, and the sources for the consistency seem reasonable rather than random, this would lead to a higher likelihood of applying a realization rate to that population separate from a larger population.

For programs and portfolios where the granular data are tracked, we perform tracking system reviews, aiming to validate the claimed savings through the deemed savings algorithms from a TRM or other guiding source. This often leads to discoveries of systemic issues, such as tables with incorrect values (outdated, missing updates, or transposed numbers) that can be corrected to increase the accuracy of savings. Another example of using granular data is identifying the prevalence of bounded assumptions (such as 24/7 equipment operation) that can only be adjusted downwards in the population, which negatively affects the realization rate for a given measure.

Using data analytics, we have identified contractors whose measurement results are consistently outside the statistical range of the population of contractors, indicating the likelihood of not following proper measurement procedures. We have also identified measures with questionable assumptions or potential uptake issues at the regional or state level through data analytics. A recent example includes calculating the saturation rate for a particular technology within a radius of giveaway locations to identify the remaining potential market.

1.2.3 Standard Operating Procedures (Response to B3) Developing standard operating procedures (SOP) is the key to managing large, complex evaluations of statewide energy-efficiency programs. The SOPs provide a clear understanding of the management structure, protocols for achieving goals, and organizational management to ensure success.

Organizational Management. To manage the responsibilities of the EM&V contractor, the Tetra Tech team will utilize the EM&V Plan as a basis for the overall management of activities, results, and reporting. We will create a Communications Plan to provide direction on (1) the review and approval processes of drafts, interim, and final reports; (2) ongoing coordination with the EEWG, Commission, PA, utilities, and other key stakeholders; (3) TRM review, maintenance, and (if determined) development; (4) ongoing communications of status updates through email and meetings; and (5) presentations. As discussed in response to A2 (Section 1.1.2), EM&V team organizational management KPIs will be tracked and regularly updated in an EM&V dashboard, which will be part of our monthly status reports.

Activity Guidelines. The Tetra Tech team has developed and is currently utilizing SOPs related to engineering reviews, data collection, data transfer from utility clients, communication with clients and stakeholders, outreach to utility customers, internal- and client-required financial reporting, performance metrics, and deliverable progress tracking. We will tailor these processes to LPSC to ensure they are effective and add value.

TRM Updates. In collaboration with the PA, we will develop a user guide for the Louisiana TRM or tailor updates to the Arkansas TRM, if it will continue to be used. For the PUCT, we developed the TRM Overview and User Guide[1] to outline the collaborative process between the Electric Utilities Marketing Managers of Texas (EUMMOT) and the PUCT's third-party EM&V contractor. The data and methodologies in this document are used by program planners, administrators, implementers, and evaluators for forecasting, reporting, and evaluating energy and demand savings from energy efficiency measures installed in Texas.

Externally Authored SOPs. Our team includes leaders in the field of developing and using net savings estimation methods, which is reflected in our authorship of much of the literature on net savings approaches and results, including the Department of Energy's Uniform Methods Project. Tetra Tech was involved in developing the Department of Energy's Uniform Methods Project (DOE UMP) Protocol for Estimating Net Savings: Common Practices[2] and recently developed the Consistent Methodology for Self-Reported Residential Net-to-Gross Measurement[3] in Massachusetts for residential downstream programs. The Tetra Tech team's Technical Director regularly provides expert testimony supporting NTG studies.

[1] The TRM Overview and User Guide is contained within Volume 1 of the TRM (https://texasefficiency.com/wp-content/uploads/2024/11/trm12v1-1.pdf). All TRM Version 12.0 Volumes 1−4 are available on the Texas Efficiency website (https://texasefficiency.com/wp-content/uploads/2024/11/trm12v1-1.pdf).

[2] The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures: January 2012−September 2016. https://www.nrel.gov/docs/fy18osti/70472.pdf.

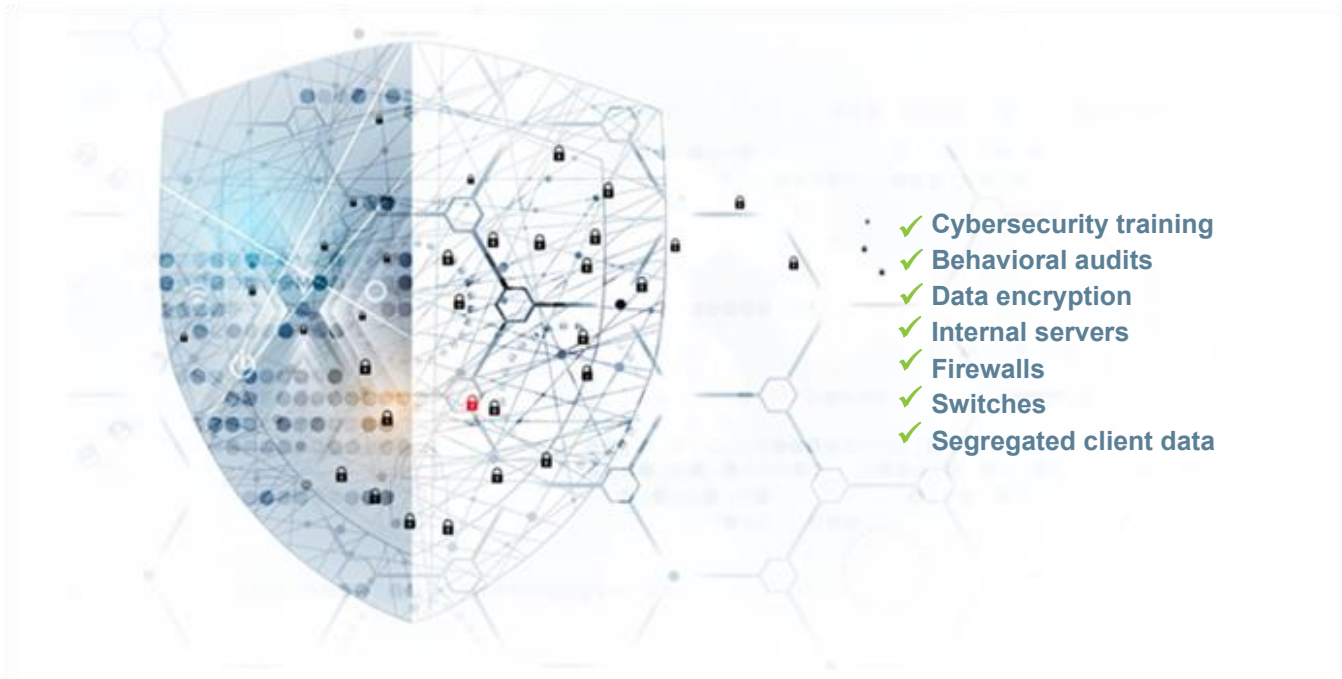
[3] Massachusetts Program Administrators and the Energy Efficiency Advisory Council: Consistent Methodology for Self-Reported Residential Net-to-Gross Measurement, May 28, 2020. MA19X03-B-RSRNTG_Residential-SR-NTG-Report_FINAL_2020.5.28.pdf.

1.2.4 Data Confidentiality (Response to B4) Tetra Tech has abided by confidentiality requirements set out by public service commissions and other regulatory bodies, utilities, and federal, state, and local agencies throughout its 25-year history of performing EM&V services. We often collect and analyze data containing personally identifiable information (PII); the following paragraphs outline our approach.

Protecting customer data and other confidential assets is a prime responsibility of Tetra Tech and one we take seriously. At the corporate level, we continually invest in our security team and hardware and software security tools. Our cybersecurity team considers the impact of people, processes, and systems to establish a risk-based and prioritized set of baseline policies and practices.

These processes protect company and partner data systems and ensure compliance with legal, regulatory, and industry best practices. We are experienced in working with a range of sensitive data, and we have earned the trust of state and federal agencies and utilities across the country. Tetra Tech trains all staff on common cybersecurity issues such as increasingly common social engineering attacks, malicious code delivered via hyperlinks or macros, multi-factor authorization, and weak passwords. We follow up on this training by conducting behavioral audits of how the staff respond to tests generated by our security team.

Our projects build on the foundation established by corporate policies and practices. For example, all projects implement procedures to keep PII and other data secure and confidential from initial receipt or preparation of data files through data collection, processing, analysis, storage, and retrieval. All data are encrypted during transfer among client team members, subcontractors, and Tetra Tech (via Microsoft OneDrive or SharePoint) and while at rest on our internal servers, which are physically secured and protected by industry-standard firewalls and switches. These internal servers are also protected by only being externally accessible via a virtual private network (VPN). In addition, all staff laptops with access to this data are encrypted. Project files are restricted to the local business unit and are separated virtually from the rest of Tetra Tech's data; client data is strictly segregated. We will work with the LPSC to incorporate any additional elements into the project's data protection processes as necessary.



1.2.5 QA/QC Reviews (Response to B5) The Tetra Tech team utilizes experienced engineers and analysts bolstered by a robust technical QA program to review calculation processes, parameters, documentation, and assumptions. In addition to confirming best practice energy efficiency estimation, Tetra Tech's expert engineering and measure-level analysis (1) verifies program impacts, (2) informs annual updates to TRMs to improve savings estimates, and (3) evaluates the opportunities for increased efficiency and consistency in program- and portfolio-level implementation.

Additionally, the Tetra Tech team provides continuous technical assistance throughout the implementation timeline. The goal of the assistance is to provide an evaluation perspective on projects before finalizing results, thereby proactively impacting the program outcomes. Reviewing M&V plans and real-time data aligns the results of large projects before completion, reducing risks to claimed savings from post-installation evaluation and increasing the QA for the most impactful projects.

Engineering desk reviews are the foundation for conducting quality assurance of energy efficiency projects. The engineering desk reviews of the sampled projects will match individual project equipment to the requirements of the TRM entry and calculation assumptions. The Tetra Tech team develops a data request for all documentation for sampled sites, including specification sheets, all measurements conducted pre- and post-installation, photographs, and other relevant project materials. Each sampled site undergoes an in-depth review to verify equipment specifications and intended measure use—the review documents the relevant equipment operating baseline and retrofit characteristics against the TRM or other measure source. The engineering desk reviews provide valuable feedback and insight into the overall program performance, including quality of trade ally project applications, consistency in project documentation, adherence to industry standards for data collection (e.g., ENERGY STAR® and Air Conditioning, Heating, and Refrigeration Institute (AHRI) certificates for equipment), calculation methodologies, and potential data gaps.

Desk reviews assist in the development of a detailed site data collection plan for potential participant interviews and installation verifications. If discrepancies are found during the desk review, they are identified in a consolidated site- and measure-level database used to generate site data collection plans. This information is used in the evaluation report to identify the components where documentation was insufficient for verification and where it varied from site verification. The site consumption data are collected to verify the outcomes of the energy efficiency project that cannot easily be explained by engineering calculations from the site data collection.

Tetra Tech integrates the data from its QA/QC reviews into an EM&V database that includes key data points to provide the big picture regarding the programs and measures driving savings. The benefits of the consolidated EM&V database are that it (1) ensures program sampling considers measure and participation interaction across programs, (2) streamlines recommendation development and reporting, and (3) allows for more robust QA/QC of evaluation results. An example of the value of this approach to organizing and managing EM&V activities and data is included in Appendix F (Section F.3, Figure 12).

1.2.6 Surveying Customers and Developing Improvement Recommendations (Response to B6) Well-designed and implemented surveys can serve as a basis for determining whether programs are efficient and effective and improving customer satisfaction with their design. The Tetra Tech team works collaboratively with clients to understand study objectives, effectively incorporate subject matter expertise, and develop research designs and data products that are fit for purpose, timely, and cost-effective. Buy-in from stakeholders and end-user input bolsters the legitimacy of data collection activities and results and ensures that data products and recommendations are useful and actionable.

The customer experience is a key metric for monitoring program success. It is important to monitor this metric over time for continuous process improvement. As discussed in response to A2 (Section 1.1.2), a customer satisfaction KPI will be included in process evaluation activities.

Tetra Tech's in-house Survey Research Center (SRC) and research methodology for customer surveys are systematic and transparent, resulting in the highest-quality data. Annually, we conduct over 7,500 computer-assisted telephone interviews (CATI), 15,500 mail surveys, 46,000 web surveys, and 500 in-depth interviews across residential and commercial energy efficiency programs. Voxco, the survey software used for web and telephone survey implementation, allows us to support survey efforts across multiple modes of implementation, ensuring data quality and tracking data collection metrics.

Our SRC's deep experience with all facets of data collection allows our data collection activities to commence quickly following approval of the EM&V Plan; this allows feedback to be provided in a timely manner and improvements to commence before the close of the program year.

1.2.7 Drafting Technical Reference Manuals (Response to B7) The Tetra Tech team has extensive experience with statewide TRMs and deemed savings development.

Ongoing Efforts in Louisiana. While the LPSC did not require a statewide TRM during the Quick Start phase, Frontier, the Tetra Tech team's TRM Lead, has collaborated with Cleco, SWEPCO, and their EM&V contractor since 2017 to create and actively maintain a repository of deemed savings calculations and documentation protocols based on the Arkansas TRM. Where appropriate, these protocols were adapted for Louisiana climate zones to reflect local weather impacts.

Frontier continues to improve and adapt these deemed savings and add new measures at the utilities' request. Most recently, in 2023, Frontier updated all eligible measures for compliance with the Arkansas TRM versions 7.0, 9.1, or other approved statewide TRMs. This effort ensures that claimed savings align with updated baselines, codes, and standards to project energy savings and demand reduction more accurately.

Additionally, EcoMetric, the Tetra Tech team's Natural Gas Program Evaluation Lead, co-managed the New Orleans TRM, its annual update, stakeholder engagement, and coordination with the implementation team while at a prior firm.

History with Statewide TRMs. Our team has a long history of developing deemed savings for electric and gas utilities. Working on behalf of the Texas IOUs, Frontier assisted with deemed savings development and regulatory filings dating back to 1999. In 2013, Frontier worked with the Public Utility Commission of Texas and their statewide evaluation contractor, Tetra Tech, to create the very first Texas TRM. On behalf of the Texas IOUs, Frontier and Tetra Tech continue to lead annual deemed savings development activities in support of every annual Texas TRM update.

From 2011 to 2016, Frontier also served a key role working as a subcontractor to the Arkansas Public Service Commission and Independent Evaluation Monitor (IEM) to assist with deemed savings development for the original deemed savings that would eventually form Version 1.0 of the Arkansas TRM. Frontier's work as Technical Manager for the Arkansas EM&V Collaborative included presenting and defending industry best practice engineering methodologies as necessary to ensure the TRM was accurate and up to date, as well as continually refining methodologies and adding high-impact measures to capture savings from new technologies. This experience proved very useful when modifying the Arkansas TRM for use in Louisiana climate zones.

Additionally, Frontier has developed gas savings measures for the Arkansas, Illinois, and New Mexico TRMs. While Oklahoma and Texas do not currently require a statewide gas TRM, Frontier has worked with multiple gas utilities to develop deemed savings methodologies for both states. Recently, Frontier has proposed and outlined the potential for a statewide Texas gas TRM.

To date, the Tetra Tech team remains actively involved in supporting deemed savings development and TRM updates in Arkansas, California, Illinois, Iowa, Louisiana, New Mexico, New York, Oklahoma, and Texas.

1.2.8 Energy Efficiency Working Groups (Response to B8) The Tetra Tech team brings unparalleled experience in effectively leading and presenting at EEWGs. The Tetra Tech team regularly participates and contributes content to statewide collaborative groups to support energy efficiency programs and TRM development in Arkansas, California, Colorado, Connecticut, Delaware, Illinois, Iowa, Louisiana, Minnesota, Nevada, New Jersey, New Mexico, Oklahoma, and Pennsylvania. Most like the partnership the Tetra Tech team plans to have with the LPSC and its EEWG for the statewide EE program, Tetra Tech has worked with the Texas Commission to organize and lead sessions for its statewide collaborative group for well over a decade. The latest EM&V presentation at an October 2024 statewide collaborative group meeting can be found here: Admin Monitor - Texas - Public Utility Commission of Texas[4], Item 3.

[4] https://www.adminmonitor.com/tx/puct/workshop/20241015/.

1.2.9 Producing, Reviewing, and Utilizing EM&V Plans (Response to B9) The Tetra Tech team has conducted EM&V services of well over 500 energy efficiency and load management programs for more than 60 utilities, commissions, and energy agencies across North America, and for each, has developed an EM&V Plan. The EM&V Plan should reflect the objectives of the evaluation, clearly define activities, and establish a project timeline with an associated budget to ensure critical filing deadlines are met. It is important to proactively engage with the Commission, PA, and other key stakeholders while designing the EM&V Plan; therefore, we will facilitate a review process to produce a draft and final EM&V Plan to be used as the basis for performing EM&V functions, described in more detail in our response to B10 (Section 1.2.10).

The EM&V Plan is a living document that is subject to modification as needed due to changing program designs, market transformation, and updates to program goals. For multi-year evaluations such as this, prior to each evaluation year, we will collaborate with the LPSC, PA, utilities, and key stakeholders to update the EM&V Plan as needed to stay current with the needs of the LPSC and the programs to ensure continued success.

1.2.10 Performing EM&V Functions (Response to B10) As discussed in our response to B9 (Section 1.2.9), the Tetra Tech team has decades of EM&V experience, laying the groundwork for the successful implementation of EM&V activities.

Interviews with Stakeholders. Beginning EM&V by conducting interviews with key stakeholders, such as program managers and program administrators, is essential for fostering a collaborative working relationship, prioritizing EM&V activities, and detailing researchable issues for the upcoming program year.

Process and NTG Activities. Process and NTG activities begin by drafting sample memos, survey instruments, and survey materials (e.g., advance postcards, letters, and emails) for review by the EEWG. Once comments are addressed, final versions will be sent, and activities will commence. Some activities will be implemented concurrently to meet the EM&V reporting requirements (for example, participant surveys and in-depth interviews with trade allies). Secondary research will be performed to support key findings and recommendations.

Verifying Savings. Upon receipt of program data, we will draft sample memos for conducting desk reviews and on-sites as a means to verify the program savings. A tracking system review will be performed to verify savings calculations against the TRM.

Analyzing Costs and Cost-Effectiveness. Cost efficiency is a key factor, necessitating comparing budgeted expenditures against actual spending and the economic benefits derived from the program. Cost-effectiveness testing will be performed for all measures under the program using the Total Resource Cost Test (TRC). We understand that the goal of the portfolio overall must equal or exceed 1.0 TRC.

Producing Annual Reports. Annual reports are a compilation of key findings and recommendations, program summaries, EM&V process and impact activity descriptions and methodologies, and detailed results of the activities. Results are presented statewide and at several distinct levels of aggregation, such as by utility, district, sector, and measure. Appendices will contain copies of all approved materials used in the EM&V activities (for example, sample memos, survey instruments, interview guides, reviewed marketing materials, etc.).

1.2.11 Developing Market Potential Studies (Response to B11) Please see our response to C5 (Section 1.3.5).

1.3 APPROACH TO EM&V FUNCTIONS (RESPONSE TO RFP SECTION C)

1.3.1 Data Systems (Response to C1) As the current evaluator for Entergy Louisiana, Tetra Tech is well-versed in APTIM's program tracking system, APTracks. We will continue to use APTracks to effectively verify a census of savings, sample for in-depth EM&V activities, and obtain information needed for cost-effectiveness testing. The Tetra Tech team also uses software tools throughout its EM&V activities to ensure data quality. Tetra Tech uses Quickbase for engineering desk reviews and on-sites. We also interface Quickbase with PowerBI for streamlined impact reporting that allows for timely results to inform mid-course corrections if needed. In our B6 response (Section 1.2.6), we discuss using Voxco to ensure the quality of survey data across multiple modes of implementation. We use software as tools for data collection, management, and analysis, not end-products. No data or results will be considered proprietary, with the exception of customer information tied to specific survey responses. It is a market research best practice to provide confidentiality to encourage participation, maximize response rates, and enhance data accuracy. Impact and survey results will be made available to the Commission upon request or at the end of the contract for ongoing monitoring purposes. For ease of Commission use, we plan to provide results in Microsoft Excel spreadsheets unless another format is requested.

The Tetra Tech team is experienced in various project management software and maintaining SharePoint sites for collaboration across multiple parties. As part of the project initiation meeting discussed in A2 (Section 1.1.2), we will clarify where it makes sense for the EM&V team to maintain separate project management dashboards and systems and where they should be integrated with the PA's project management. Questions to discuss include:

- *Where should EM&V be embedded in the PA's systems to support its continuous improvement processes?*
- *Where would the LPSC and Commission staff benefit from centralized EM&V/PA information versus separate information to best support their oversight role?*

1.3.2 Data System Management (Response to C2) The Tetra Tech team's tools, software development and maintenance experience, and security protocols provide a reliable and secure foundation for EM&V activities.

Deemed Savings Engine (DSE). The evaluation team plans to use Frontier's DSE to validate savings for compliance with the latest statewide TRM version or other governing standards. The DSE is a web-based tool that centrally manages and facilitates deemed and custom savings calculations while enforcing installation and documentation requirements. The DSE has permission-based controls and tools that allow users to interact to calculate savings for measures in a single instance or batch. Users can process thousands of scenarios using the batch processing feature.

The DSE currently supports savings calculations across seven states for over 40 gas and electric utilities.

Central management of calculations and validations promotes consistency and accuracy across programs and regulatory jurisdictions. Prior to any production launch of a TRM version, Frontier's engineering team, which actively manages TRM updates, tests each measure for accuracy.

Frontier plans to update the DSE for alignment with the official statewide TRM. The DSE could be updated very quickly and efficiently to incorporate other utility service areas in addition to those served by Cleco and SWEPCO Louisiana.

Experience Developing and Maintaining Software. Over the past 23 years, Frontier has leveraged its experience providing regulatory support, technical analysis, and program implementation to deliver software and technology solutions to track, manage, and analyze a wide variety of DSM programs.

Frontier's Program Portfolio Portal (P3®) is the flagship product offering from its EnerTrek software division, which was developed using the latest technology and best practices in software design. P3 is being used by over 40 utilities, including Cleco and SWEPCO Louisiana. It is a comprehensive and robust platform within which multiple energy efficiency programs are tracked. P3 streamlines program participation, management, reporting, and evaluation processes and easily accommodates changing program requirements.

Security Protocols. Frontier adheres to all national and state requirements for protecting information. They enforce industry data security and governance standards such as ISO27001 and NIST and maintain SOC Type 2 Certifications for data security, software development and hosting, and data management. Copies of the latest annual audit certifications are available upon request.

P3 is an ASP.Net MVC 5 application, written in C#, and hosted as a Microsoft Azure App Service. It uses Microsoft Azure SQL Databases and Blob and Table storage as the primary data stores, all geo-replicated to prevent data loss. Microsoft's transparent data encryption ensures that all data are encrypted at rest. All communication with P3 is over HTTPS to encrypt data in transit. Each P3 client has individual data stores that are segregated from other clients' data. There is no limit on frequency or volume of data transfer.

P3 provides secure access to the system through registration, two-factor authentication, and user roles and permissions. Each client configuration of P3 can have an arbitrary number of defined roles, and each role has a collection of permissions granted to it.

1.3.3 EM&V Plan Development (Response to C3)

As mentioned in our response to B2 (Section 1.2.9), the Tetra Tech team has decades of experience in EM&V plan development. We understand the importance of adhering to filing requirements, filing due dates, and following necessary processes. We will develop an EM&V timeline to ensure drafts, review time, revisions, and a final overall EM&V Plan are prepared before the May 1 due date.

Because the EM&V Plan will need to evolve during the budget cycle to meet changing program needs, we will prepare an annual EM&V Plan for the Commission prior to each program year as a subcomponent of the overarching EM&V Plan. The annual plans will detail the specific activities, researchable issues, goals, and any revisions to the original EM&V Plan.

Following the project initiation meeting, we will draft the multi-year EM&V Plan detailing transition year activities set in the context of the four-year EM&V Plan. The EM&V Plan will support the transition from the Quick Start program to the statewide program by identifying what works well to build upon and where mid-course corrections are needed throughout the four-year budget cycle.

We refer the reader to Appendix G for two samples of EM&V plan documentation developed for the Public Utility Commission of Texas (Tetra Tech) and Entergy Arkansas (Tetra Tech).

1.3.4 Annual Reporting (Response to C4) Adhering to reporting guidelines and deadlines is of utmost importance for energy efficiency programs and meeting regulatory requirements. Following a reporting timeline will ensure that appropriate time is available for all appropriate stakeholders to review and provide comments. See Figure 1 in our response to A3 (Section 1.1.3) for an example of an annual EM&V timeline depicting the key activities and reporting period.

We refer the reader to Appendix H for two samples of annual reports, which include the Public Utility Commission of Texas (Tetra Tech) and CPS Energy (Frontier).

1.3.5 Market Potential Study/Market Research (Response to C5) During the first four-year cycle and each successive budget cycle, the evaluation team will design and conduct a utility-wide potential study to identify achievable energy savings across Louisiana. Our team will recommend savings targets for the Commission's review and approval from this analysis. Broadly speaking, energy efficiency potential studies assess savings opportunities for targeted service territories across a defined timeframe. Study findings inform policy decisions and identify the feasibility of meeting energy efficiency goals.

The evaluation team has conducted potential studies addressing multiple utilities across diverse territories, including Tetra Tech's work for NV Energy and Frontier's leadership on a multi-jurisdictional commercial food service research project in Illinois, targeted market research studies related to commercial food service equipment (California Energy Commission), green hydrogen production (Liberty Utilities), and renewable natural gas and biogas (EPRI).[5]

For the Illinois potential study, Frontier's task was to assess the existing commercial food service market across the state, including multiple utility service areas, and provide an estimate of the energy consumption on a sector-wide and an appliance-by-appliance basis, identifying the overall food service energy-efficiency potential within the combined utility service areas. Applying the results of Frontier's study, a comprehensive pilot program was successfully developed to serve all the utility service areas and expand the use of high-efficiency electric and gas food service equipment across the state.

Our typical approach generally involves defining objectives and scope, engaging stakeholders, collecting data, analysis and assessment, and making recommendations and reporting. The type of data collected may vary across specific projects and typically includes any relevant energy efficiency data available (e.g., from Quick Start program experience), direct stakeholder feedback, benchmarking assessments to identify best practices and energy efficiency standards, location-specific details, and energy usage data, if available.

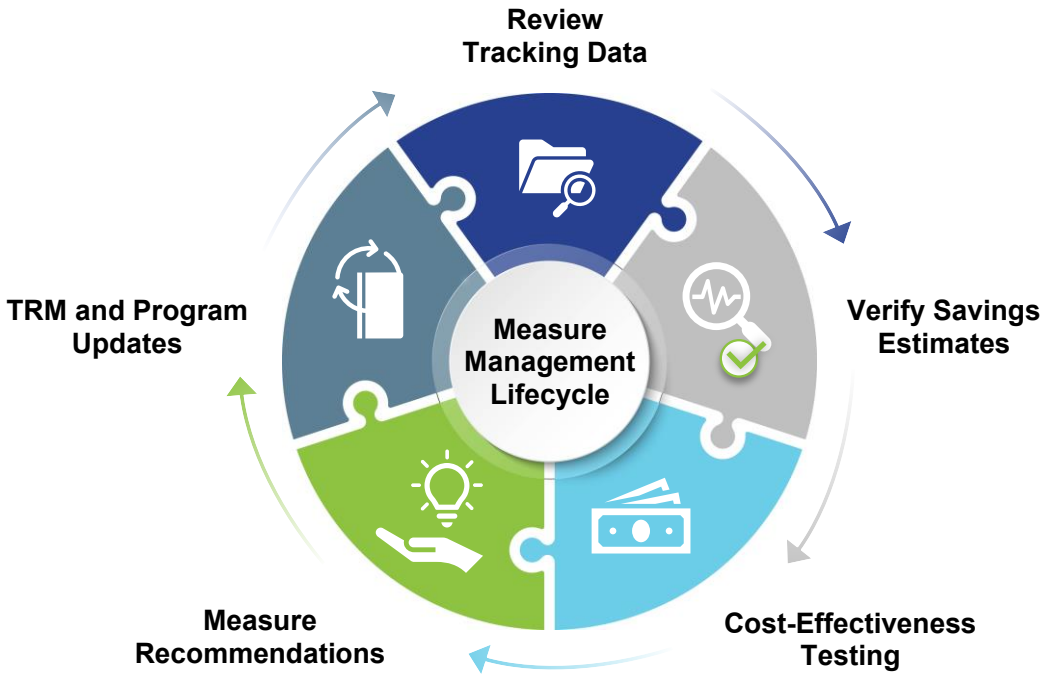
The true value and usefulness of market potential studies are directly related to having a clear objective and defined methodology. While these studies are useful within certain contexts, if not designed properly (due to methodology, assumptions, scope, or other variables), simplifying assumptions may diminish the report's usefulness as it may not properly account for the complexities of real-world energy efficiency programs, customer behavior, or market dynamics facing energy efficiency stakeholders in Louisiana. Our team will design a potential study methodology that is relevant to all utility service territories across the state, including those who have participated in the Quick Start process and those who do not currently have a strong energy efficiency framework in place. To do this, we will focus on areas of high uncertainty,

[5] Frontier's potential study deliverables for the multi-jurisdictional commercial food service program, Liberty Utilities, and EPRI are not publicly available. A summary of the EPRI study can be found here: https://www.epri.com/research/programs/053125/results/3002019721.

identify the highest-level priorities to design stakeholder surveys and assessments to help answer key questions and address major concerns per utility district, and develop an approach that will result in realistic feedback for assessment by the Commission and actionable recommendations for the PA's consideration. Through this intentional, Louisiana-specific mindset, we will avoid the pitfalls of a purely academic exercise that many massive potential studies fall prey to in order to provide results with real value for the LPSC, its administrator, and other stakeholders.

We refer the reader to Appendix I for two samples of previously produced publicly available studies, which include a potential study conducted for NV Energy (Tetra Tech) and the comprehensive commercial kitchen equipment demonstration for the California Energy Commission (Frontier Energy), covering the qualitative and qualitative benefits of innovative high-efficiency gas cooking equipment and advanced commercial kitchen ventilation systems in different types of commercial food service operations.

1.3.6 Measure Management (Response to C6) One of the primary objectives of measure management and TRM development is to conduct consistent measure verification following the TRM protocols. This consistency provides uniform measure verification across the program and utility service territories and program cost-effectiveness estimations. The TRM should establish clear qualification criteria for developing projected and claimed savings estimates and provide transparency of savings for all interested stakeholders.



Our overarching approach to measure management will be to work with the LPSC, PA, and EEWG to (1) verify measure-level program tracking data against the TRM; (2) estimate annual gross and net energy and demand impacts at the measure and program level; (3) adjust program-reported gross savings using the results of evaluation research, leveraging the tracking system and engineering desk reviews, metered data analysis, and on-site verification; (4) provide complete documentation and transparency of all evaluated savings estimates and recommendations; (5) work with the LPSC, EEWG, and PA to apply recommendations, and if

determined, modify measure offerings and savings calculations in the TRM; and (6) provide ongoing technical reviews and guidance to the PA and EEWG.

Currently, Tetra Tech manages the Texas TRM. The Texas TRM is updated annually through a collaborative process in a TRM Working Group that includes Frontier as the IOUs' representative, following the above-mentioned approach. Frontier also works with EcoMetric in leading the review, update, and management of the New Mexico TRM, including prioritizing updates, researching and drafting updates to each measure, monitoring codes and standards, and presenting the updates to the utilities and Public Regulation Commission staff. Additional details on TRM development experience can be found in our response to B7 (Section 1.2.7).

1.3.7 Stakeholder Collaboration (Response to C7) The Tetra Tech team is well-versed in collaborating and consensus-building across various stakeholders, including commissions, state energy offices, utilities, trade allies, trade associations, and advocacy groups. Transparency and communication are key to effective stakeholder collaboration. All draft EM&V deliverables (after review from the LPSC and PA) will be filed and shared with stakeholders for feedback through the EEWG with a review comment deadline. We will document both stakeholder feedback and EM&V responses with final deliverables. We also stand ready to help the LPSC facilitate stakeholder working groups and meetings to improve the statewide EE program as research or feedback needs are identified.

A recent example is a Heat Pump Working Group (HPWG), facilitated by Tetra Tech, that engaged a wide range of stakeholders, including manufacturers, implementation contractors, HVAC contractors, utilities, state agencies, trade associations, and advocacy groups to encourage greater adoption of variable speed heat pumps through the state's energy efficiency programs.

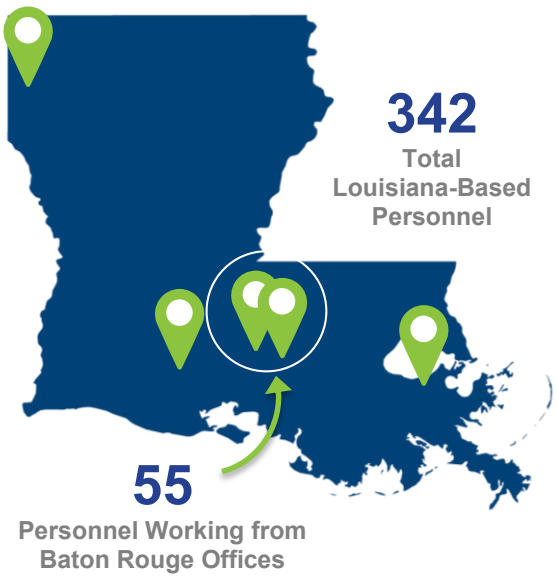
The working group achieved its objective of developing a savings algorithm for the variable speed heat pump technology for use in the 2025 Texas TRM that captures increased winter demand reductions and savings, allowing larger incentives to be offered.

More details on this HPWG can be found on the Texas Commission website in Project No. 56510 at the following link: Interchange - Filings[6]. The Tetra Tech team looks forward to working in-step with the LPSC to proactively and productively engage stakeholders to the benefit of the statewide EE program.

EcoMetric and Frontier Energy also bring similar experiences. EcoMetric, in a variety of roles and responsibilities of the Illinois Stakeholder Advisory Group, has been involved with the TRM Technical Advisory Committee, Market Transformation Working Group, NTG Working Group, and framework. Through collaboration with the Texas IOUs, operating collaboratively as the Electric Utility Marketing Managers of Texas (EUMMOT), Frontier facilitates various regulatory, engineering, and other research and development efforts. Frontier also serves as the primary consultant responsible for managing deemed savings development and the Texas TRM on behalf of EUMMOT. From 2011 to 2016, Frontier also served a key role as the Technical Manager for the Arkansas Public Service Commission and the IEM to assist with deemed savings development.

6 https://interchange.puc.texas.gov/search/filings/?UtilityType=A&ControlNumber=56510&ItemMatch=Equal&DocumentType=ALL&SortOrder=Ascending

1.3.8 Local Staffing (Response to C8) Tetra Tech, as a leading engineering and consulting firm, provides clients with a deep bench of experts across multiple industries, including energy. We have five offices in Louisiana (2 in Baton Rouge, 1 in Shreveport, 1 in St. Rose, and 1 in Lafayette). These five locations comprise a total of 342 Louisiana-based personnel—55 of whom work out of Baton Rouge offices—who are familiar with the local setting and regulatory environment. Our experience working in Louisiana spans several decades with state, governmental, and commercial agencies. We have selected two project descriptions to expand on our additional energy efficiency work in Louisiana; see Appendix F, Section F.2. Combined with our proposed key personnel, local resources can be available to support effective communication and collaboration between LPSC, the PA, and EEWGs. Our Louisiana-based experience and local resources will directly support the EM&V effort, exceeding the LPSC's program goals and expectations.



1.4 COST PROPOSAL (RESPONSE TO RFP SECTION D)

1.4.1 Budget (Response to D1) The Tetra Tech team has provided our proposed budget in Attachment B (electronically submitted as *TPE_Attachment_B_final_Tetra Tech_V01* (Microsoft Excel and PDF versions) and included in Appendix E for hard copy proposals), as requested in the RFP. Appendix E also includes our hourly rate schedule for management personnel and expected functional roles.

The proposed costs for 2025–2029 in Attachment B include effective and efficient transition activities in 2025, comprehensive EM&V in 2026–2029, the potential study, and TRM development and maintenance. We are pleased to offer the optimal level of EM&V support to the LPSC at under two percent of the utility budget annually and TRM development and maintenance for under one percent of the utility budget. The industry standard practice is to set EM&V budgets as a percentage of total program budgets, with national averages spent on EM&V typically ranging from three to five percent of program budgets. We can deliver this cost-effective EM&V by working across utilities and the PA and working with LPSC staff to prioritize EM&V activities to target additional research to the areas where the information delivers the most value. The proposed budget is based on the level of effort for the following key metrics and deliverables:

EM&V Plans. Project kick-off meetings, a Communications Plan, a transition-year EM&V Plan, the 2026−2029 EM&V Plan (updated annually), an "action plan" process that facilitates the implementation of EM&V recommendations, and sample plans for data collection activities.

EM&V Functions and Annual Reporting. The development of an interactive EM&V dashboard for EM&V activity and KPI tracking; impact evaluation activities, including but not limited to desk reviews, site visits, program tracking data verification, and consumption analyses; process evaluation activities, including but not limited to surveys, in-depth interviews, and NTG analysis; portfolio-level cost-effectiveness calculations for each program and program year; and interim and final evaluation reports, including cost-effectiveness tests and results presentations with the LPSC, PA, and utilities.

EE Working Group Participation. Participate in EEWG meetings up to quarterly, prepare and present materials, as applicable, and facilitate stakeholder engagement and requests, as applicable.

Technical Reference Manual. Scoping study in 2025 and the development of a statewide Louisiana TRM or Louisiana-specific updates of the Arkansas TRM in 2026 for use in PY2027; maintenance of the TRM through an annual update of the TRM in 2027−2028 for use in PY2027−PY2029; and a Market Potential Study in 2027 to ensure sufficient time to inform savings targets and planning for the next four-year budget cycle.

Other Analysis, Studies, and Commission Support. Up to 80 in-depth interviews, secondary data reviews, or benchmarking research in response to ad hoc process objectives identified through the EM&V research or by LPSC staff (anticipated as 20 interviews or research annually based on prior statewide EM&V experience).

Budget Assumptions. Below, we document a number of assumptions for the reader's consideration in reviewing the EM&V Function budgets and labor categories:

- Budgets are inclusive of all labor and non-labor costs.
- Invoices will include details for staff, hours charged, and hourly rates.
- Funds may be shifted across years, key areas, and staff as long as the overall budget is not exceeded.
- Staff who are promoted during the course of the contract will be moved to the appropriate rank.
- Hourly rates escalate by two percent annually, rounded to the whole dollar, effective January 1 of each calendar year.
- Travel costs (e.g., transportation, lodging, and meals) will be invoiced according to the Travel Policies and Procedures Memorandum issued by the State of Louisiana, Division of Administration, in effect at the time such expenses are incurred.

1.4.2 Accounting for Uncertainty (Response to D2)

We have set aside approximately $100,000 (around one percent of the proposed budget) to allow for flexibility in unanticipated evaluation tasks. Based on our prior statewide EM&V experience, we anticipate the need to conduct annual interviews or research. Additionally, as detailed evaluation plans are developed through the course of the contract, funding may be able to be released for other EM&V functions.

To assist in this effort, the Tetra Tech team will ensure meticulous tracking of all costs associated with the known tasks in the work plan. Tetra Tech project managers (PM) work closely with our finance managers to ensure that invoices are accurate, on time, and include all supporting documentation. Tetra Tech's Oracle financial reporting system aids in this effort by offering detailed and customizable reports on project time and expenses for a specified period or task, work-in-progress, and forecasted resources. Tetra Tech's PMs review these reports weekly to track project budgets, and the review provides early warning of a possible invoicing error or delay. This system helps the Tetra Tech PMs track goals and shift budget priorities across tasks as needed to the "*Other Analysis, Studies and Commission Support* task based on needs identified by the project team.

1.4.3 Sample Contract (Response to D3)

We refer the reader to Appendix D.

APPENDIX A: CONFLICT OF INTEREST DISCLOSURE

A.1 DISCLOSURE STATEMENT

Neither Tetra Tech nor our subcontractors are proposing staff who are currently or previously been employed by the LPSC, regulated utilities, affiliates of regulated utilities, consumer advocacy groups, or other parties that may come before the Commission.

Frontier Energy is currently contracted with Cleco and SWEPCO Louisiana to provide regulatory support, program design, engineering consultation, and database tracking solutions. Frontier does not serve as the direct implementer for any existing Cleco or SWEPCO Louisiana programs. We do not believe any of these areas creates an actual conflict of interest, but do recognize the potentiality. Frontier will review and identify projects where they have provided services; for these identified projects, evaluation tasks will be conducted exclusively by another firm on the team that has not been identified as having a potential conflict of interest.

If the LPSC feels other conflicts exists, we will discuss and mitigate using the processes described in our response to Appendix A.2 below or a process preferred by the LPSC.

CenterPoint Energy Resources Corp. We have no direct relationship with any of the four "DBAs" in Louisiana.[7] Tetra Tech has performed work for CenterPoint Energy Resources Corp. but for their Houston affiliate. Also, in 2021, Tetra Tech worked on an environmental site assessment for a property in California.

Entergy Louisiana, LLC. As a subcontractor to APTIM Environmental & Infrastructure Inc., Tetra Tech is participating in the evaluation, measurement, and verification of Entergy Louisiana, LLC's energy efficiency programs. Tetra Tech does not have a direct relationship with Entergy Louisiana for this project. The contract for this project ends on December 31, 2024, although we anticipate further work being awarded. If the LPSC considers this a potential conflict, we will implement the procedures described below to mitigate the potential conflict.

In 2016, as a subcontractor to ADM Associates, Tetra Tech performed primary data collection for Entergy New Orleans' (not Entergy Louisiana, LLC, but including it here for full transparency) Energy Smart, CoolSaver Tune-Up programs, the Home Performance and Assisted Home Performances with ENERGY STAR programs, and the Green Light New Orleans Light Bulb program.

Tetra Tech has done past work for Entergy Louisiana, LLC, in the areas of drilling support, soil borings, substation and transmission line support (as a subcontractor to Ampirical Solutions, LLC), vibration monitoring (as a subcontractor to Stewart Construction, LLC).

Southwestern Electric Power Company. SWEPCO is one of the IOUs whose energy efficiency programs Tetra Tech evaluates under contract to the Public Utility Commission of Texas. We have no contractual relationship with SWEPCO for that work.

Tetra Tech also has three small subcontracts for engineering support work at substations in Louisiana. We do not have a contractual relationship with SWEPCO for any of these projects.

[7] CenterPoint Energy Entex, CenterPoint Arkla, CenterPoint Entex, or CenterPoint Energy Arkla.

Other utility-related Work. After reviewing the LPSCs list of regulated entities, we focused on those that may be involved in energy efficiency programs. We do not have a conflict of interest with any of the following:

Acadian Gas Pipeline System

Artesian Utility Company, Inc.

Atmos Energy-Louisiana

Brier Lake Utilities, Inc.

C&M Gas Holdings, LLC

Clear Stream Utilities, L.L.C.

Deepwoods Utilities, Inc.

EnLink LIG, LLC

Evangeline Gas Company, Inc.

Greater Union Parish Utility Company

Gulf Coast Utilities, Inc.

Jefferson Davis Electric Cooperative, Inc.

JPC Energy, LLC

L & R Utilities, Inc.

L.S. Utilities Company, LLC

Livingston Gas & Utility Company

Magnolia Water Utility Operating Company, LLC

Northeast Louisiana Power Cooperative, Inc.

Oak Harbor East Utility, LLC

Panola-Harrison Electric Cooperative, Inc.

Pierre Part Natural Gas Company, Inc.

Pointe Coupee Electric Membership Corporation

South Coast Gas Company, Inc.

South Louisiana Electric Cooperative Association

Southwest Louisiana Electric Membership Corporation

Southwood Utilities, Inc.

St. Amant Gas Company

Sugarcane Townes Utilities, LLC

The Nezpique Gas System, Inc.

Utilities, Inc. of Louisiana

Washington - St. Tammany Electric Cooperative, Inc.

A.2 PROCEDURES TO MITIGATE CONFLICTS OF INTEREST

Tetra Tech, its employees, and all subcontractors are committed to complying fully with all COI requirements set forth in the RFP. Tetra Tech will disclose to the LPSC any actual or potential organizational or personal COI situations immediately upon identification. The written disclosure will contain a detailed discussion of measures Tetra Tech has taken or will take to avoid, mitigate, or neutralize the COI. The appropriate Tetra Tech manager will sign this disclosure, and copies will be provided to corporate management, including, at a minimum, the COI Coordinator for Tetra Tech's US/Canada Electric Power Projects (Bonnie Brandreth, Senior Vice President). Work will not proceed after such disclosure until Tetra Tech receives written approval from the LPSC.

Tetra Tech will place the required COI flow-down clauses in each subcontract. Our subcontractors will verbally notify Tetra Tech of any actual or potential COI within two working days of receipt of a new work assignment or task order. Tetra Tech will communicate any subcontractor conflict of interest concerns immediately to the LPSC and apply the procedures described in this appendix to mitigate the potential conflict.

Possible procedures to identify, avoid, mitigate, or neutralize potential COI situations are discussed below. All procedures are subject to LPSC approval and contract modification, if necessary, before implementation.

Screening process to identify potential COI. Tetra Tech maintains a comprehensive database of past, current, and prospective clients, including the location and general nature of the work involved. Tetra Tech searches this database before accepting new work or submitting a proposal to determine whether the contemplated work is related to other work Tetra Tech has performed, is performing, or may perform in the future. Each opportunity in this database is reviewed by a member of each of Tetra Tech's business units to determine if an actual or potential COI situation exists. We then promptly disclose this information to the client, along with measures that can be taken to avoid, mitigate, or neutralize the potential COI situation.

Personal certifications. Tetra Tech has a corporate policy that requires Tetra Tech employees to immediately disclose to cognizant managers and contract program managers any previous, current, or potential future relationship with another person or organization that might constitute a COI situation.

Procedures to avoid potential COI. One or more of the following procedures will be used to avoid potential COI situations: (1) if past work conflicts with contemplated work, avoid the COI by ceasing work for the current client, (2) if future work conflicts with contemplated work, avoid the COI by turning down either the contemplated or future work, or (3) if a personal conflict arises, the employee's supervisor will be notified. The employee in question will be permanently reassigned to other work.

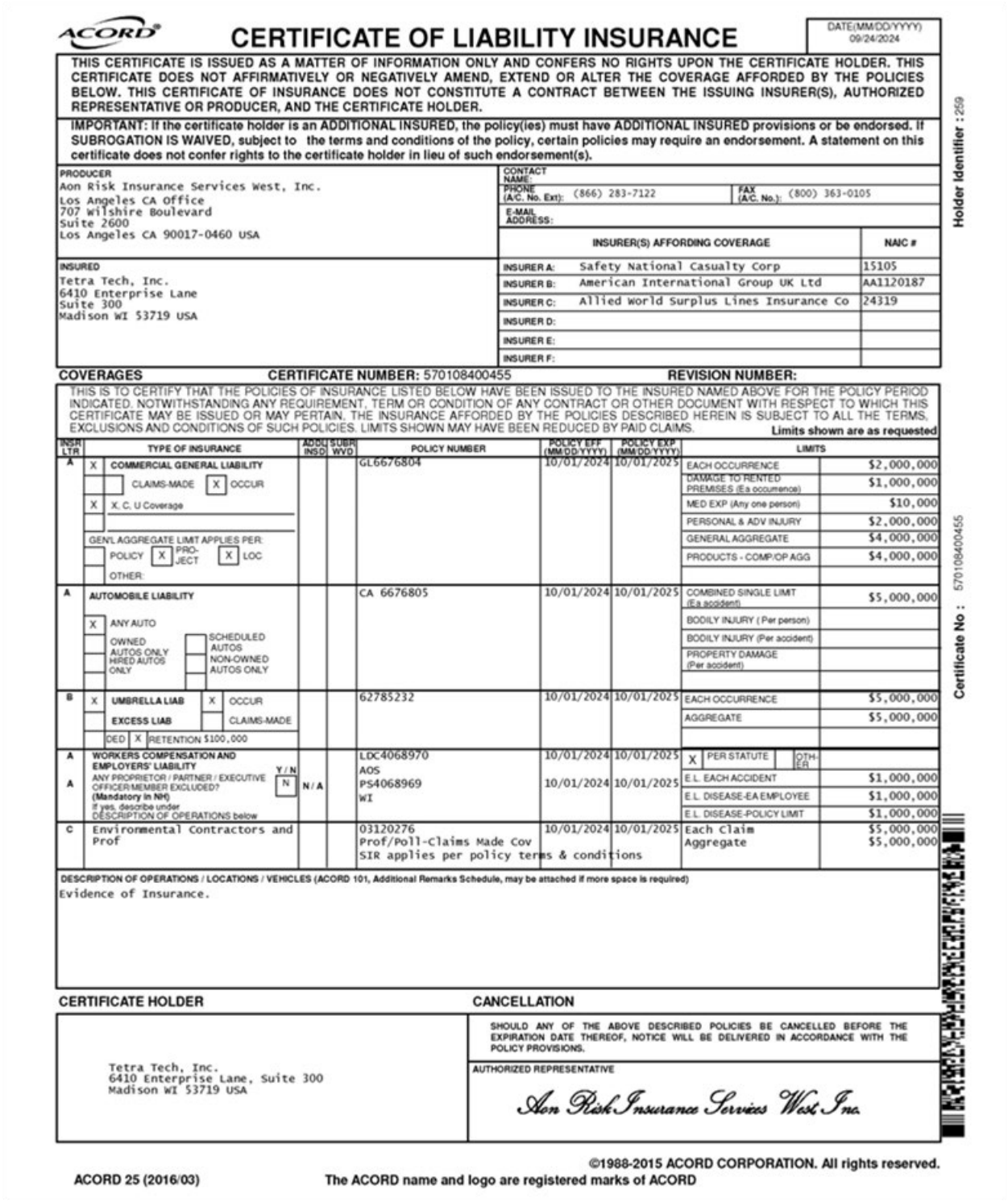
Procedures to mitigate potential COI. One or more of the following procedures will be used to mitigate potential COI situations: (1) if prior work conflicts with contemplated work, mitigate the COI by restricting Tetra Tech's involvement in client-sensitive activities on the project, or (2) if a personal conflict arises, reduce the involvement of the person in question to a non-decision-making role.

Procedures to neutralize potential COI. One or more of the following procedures will be used to offset potential COI situations: (1) if an organizational conflict arises, neutralize the COI by reassignment of the work to a subcontractor with the stipulation that Tetra Tech does not review the subcontractor's work product; or (2) if a personal conflict arises, neutralize the COI by requiring the person in question to sign a declaration that he/she will protect the confidentiality of data obtained from the client and not use it for any other purpose. The employee's supervisor will be notified, and the declaration will be kept in the project documentation file. The employee may also be reassigned.

APPENDIX B: INSURANCE (RESPONSE TO A9)

Tetra Tech carries a wide range of insurance to protect our clients and ourselves. In the event a contract is awarded, an insurance certificate will be provided, naming the LPSC as an additional insured on the relevant policies. See Figure 3 and Figure 4 for our proof of insurance certificates.

Figure 3. Tetra Tech Proof of Commercial Insurance



ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 09/24/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Aon Risk Insurance Services West, Inc.
Los Angeles CA Office
707 Wilshire Boulevard
Suite 2600
Los Angeles CA 90017-0460 USA

CONTACT NAME:
PHONE (A/C. No. Ext): (866) 283-7122 FAX (A/C. No.): (800) 363-0105
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A:	Safety National Casualty Corp	15105
INSURER B:	American International Group UK Ltd	AA1120187
INSURER C:	Allied World Surplus Lines Insurance Co	24319
INSURER D:		
INSURER E:		
INSURER F:		

INSURED
Tetra Tech, Inc.
6410 Enterprise Lane
Suite 300
Madison WI 53719 USA

COVERAGES **CERTIFICATE NUMBER:** 570108400455 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY			GL6676804	10/01/2024	10/01/2025	EACH OCCURRENCE	$2,000,000
	CLAIMS-MADE X OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	$1,000,000
	X X, C, U Coverage						MED EXP (Any one person)	$10,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PERSONAL & ADV INJURY	$2,000,000
	POLICY X PRO-JECT X LOC						GENERAL AGGREGATE	$4,000,000
	OTHER:						PRODUCTS - COMP/OP AGG	$4,000,000
A	AUTOMOBILE LIABILITY			CA 6676805	10/01/2024	10/01/2025	COMBINED SINGLE LIMIT (Ea accident)	$5,000,000
	X ANY AUTO						BODILY INJURY (Per person)	
	OWNED AUTOS ONLY / HIRED AUTOS ONLY / SCHEDULED AUTOS / NON-OWNED AUTOS ONLY						BODILY INJURY (Per accident)	
							PROPERTY DAMAGE (Per accident)	
B	X UMBRELLA LIAB X OCCUR			62785232	10/01/2024	10/01/2025	EACH OCCURRENCE	$5,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$5,000,000
	DED X RETENTION $100,000							
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			LDC4068970 AOS	10/01/2024	10/01/2025	X PER STATUTE OTH-ER	
A	ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N N (Mandatory in NH) N/A			PS4068969 WI	10/01/2024	10/01/2025	E.L. EACH ACCIDENT	$1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE-EA EMPLOYEE	$1,000,000
							E.L. DISEASE-POLICY LIMIT	$1,000,000
C	Environmental Contractors and Prof			03120276 Prof/Poll-Claims Made Cov SIR applies per policy terms & conditions	10/01/2024	10/01/2025	Each Claim Aggregate	$5,000,000 $5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Evidence of Insurance.

CERTIFICATE HOLDER

Tetra Tech, Inc.
6410 Enterprise Lane, Suite 300
Madison WI 53719 USA

CANCELLATION

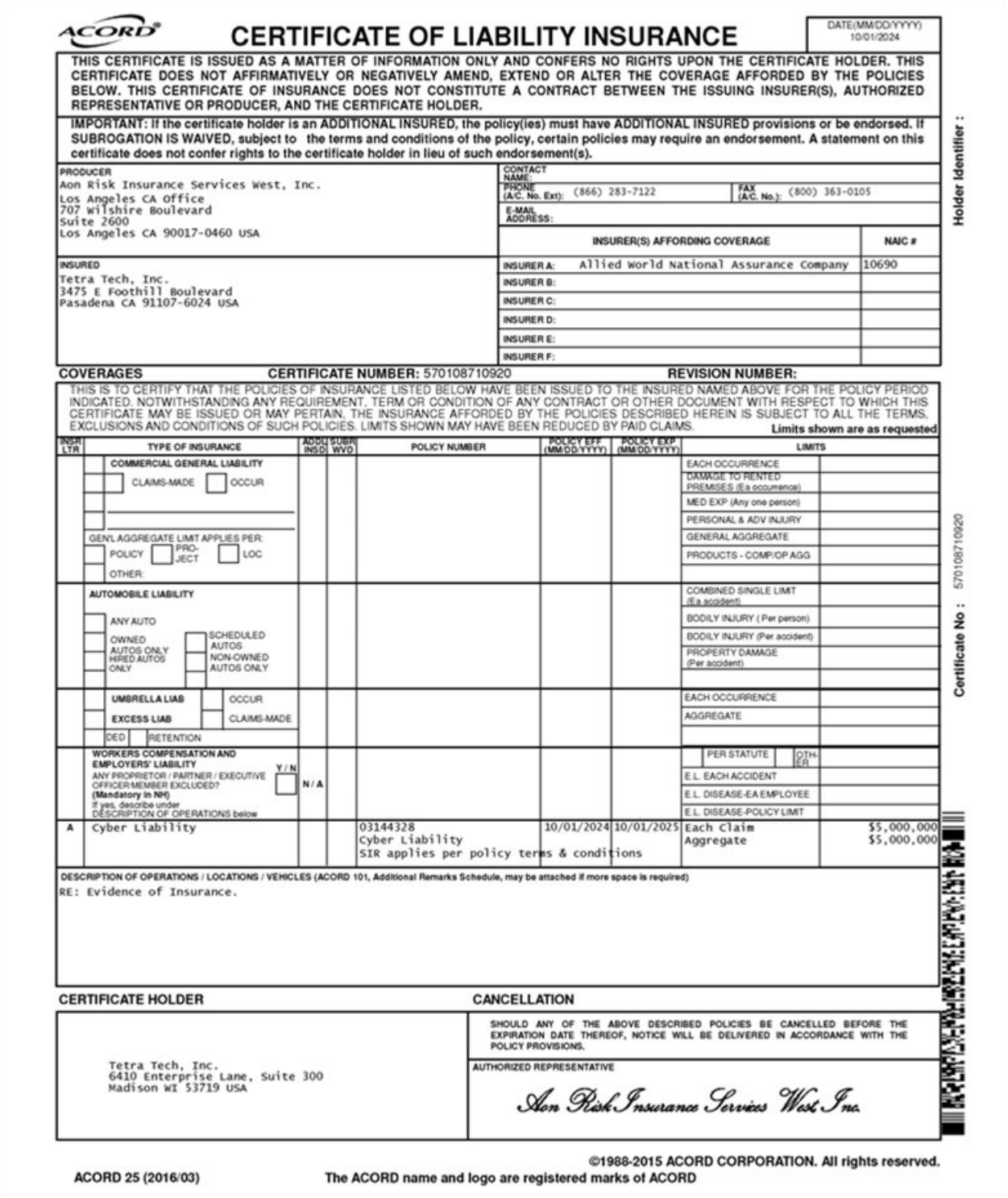
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Aon Risk Insurance Services West, Inc.

Holder Identifier : 259
Certificate No : 570108400455

ACORD 25 (2016/03) The ACORD name and logo are registered marks of ACORD

Figure 4. Tetra Tech Proof of Cyber Liability Insurance



ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY) 10/01/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Aon Risk Insurance Services West, Inc.
Los Angeles CA Office
707 Wilshire Boulevard
Suite 2600
Los Angeles CA 90017-0460 USA

CONTACT NAME:
PHONE (A/C. No. Ext): (866) 283-7122 FAX (A/C. No.): (800) 363-0105
E-MAIL ADDRESS:

INSURER(S) AFFORDING COVERAGE		NAIC #
INSURER A:	Allied World National Assurance Company	10690
INSURER B:		
INSURER C:		
INSURER D:		
INSURER E:		
INSURER F:		

INSURED
Tetra Tech, Inc.
3475 E Foothill Boulevard
Pasadena CA 91107-6024 USA

Holder Identifier :

COVERAGES **CERTIFICATE NUMBER:** 570108710920 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	
	☐ CLAIMS-MADE ☐ OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence)	
							MED EXP (Any one person)	
							PERSONAL & ADV INJURY	
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	
	☐ POLICY ☐ PRO-JECT ☐ LOC						PRODUCTS - COMP/OP AGG	
	OTHER:							
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	
	☐ ANY AUTO						BODILY INJURY (Per person)	
	☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	
	☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	
	UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	
	EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	
	☐ DED ☐ RETENTION							
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						☐ PER STATUTE ☐ OTH-ER	
	ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? ☐ N / A (Mandatory in NH)						E.L. EACH ACCIDENT	
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE-EA EMPLOYEE	
							E.L. DISEASE-POLICY LIMIT	
A	Cyber Liability			03144328 Cyber Liability SIR applies per policy terms & conditions	10/01/2024	10/01/2025	Each Claim Aggregate	$5,000,000 $5,000,000

Certificate No : 570108710920

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
RE: Evidence of Insurance.

CERTIFICATE HOLDER

Tetra Tech, Inc.
6410 Enterprise Lane, Suite 300
Madison WI 53719 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Insurance Services West, Inc.

ACORD 25 (2016/03) The ACORD name and logo are registered marks of ACORD

APPENDIX C: FINANCIAL QUALIFICATIONS (RESPONSE TO QUESTION A10)

Figure 5 through Figure 10 display Tetra Tech's audited financial statements for fiscal years 2023, 2022, and 2021. Figure 11 contains the auditor's notes to these consolidated statements.

Please note that Tetra Tech reports balance sheets for only two years. We have included the consolidated balance sheet from fiscal year 2022 to show a three-year view (Figure 6).

Figure 5. Consolidated Balance Sheets, Fiscal Years 2023 and 2022

Tetra Tech, Inc.
Consolidated Balance Sheets
(in thousands, except par value)

ASSETS	October 1, 2023	October 2, 2022
Current assets:		
Cash and cash equivalents	$ 168,831	$ 185,094
Accounts receivable, net	974,535	755,112
Contract assets	113,939	92,405
Prepaid expenses and other current assets	89,096	115,400
Income taxes receivable	9,623	10,205
Total current assets	1,356,024	1,158,216
Property and equipment, net	74,832	32,316
Right-of-use assets, operating leases	175,932	182,319
Goodwill	1,880,244	1,110,412
Intangible assets, net	173,936	29,163
Deferred tax assets	89,002	47,804
Other non-current assets	70,507	62,546
Total assets	$ 3,820,477	$ 2,622,776
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 173,271	$ 147,436
Accrued compensation	302,755	237,669
Contract liabilities	335,044	241,340
Short-term lease liabilities, operating leases	65,005	57,865
Current portion of long-term debt	—	12,504
Current contingent earn-out liabilities	51,108	28,797
Other current liabilities	280,959	190,406
Total current liabilities	1,208,142	916,017
Deferred tax liabilities	14,256	15,161
Long-term debt	879,529	246,250
Long-term lease liabilities, operating leases	144,685	146,285
Non-current contingent earn-out liabilities	22,314	36,769
Other non-current liabilities	148,045	79,157
Commitments and contingencies (Note 17)		
Equity:		
Preferred stock – Authorized, 2,000 shares of $0.01 par value; no shares issued and outstanding at October 1, 2023 and October 2, 2022	—	—
Common stock – Authorized, 150,000 shares of $0.01 par value; issued and outstanding, 53,248 and 52,981 shares at October 1, 2023 and October 2, 2022, respectively	532	530
Additional paid-in capital	—	—
Accumulated other comprehensive loss	(195,295)	(208,144)
Retained earnings	1,598,196	1,390,701
Tetra Tech stockholders' equity	1,403,433	1,183,087
Noncontrolling interests	73	50
Total stockholders' equity	1,403,506	1,183,137
Total liabilities and stockholders' equity	$ 3,820,477	$ 2,622,776

See accompanying Notes to Consolidated Financial Statements.

Figure 6. Consolidated Balance Sheets, Fiscal Years 2022 and 2021

Tetra Tech, Inc.
Consolidated Balance Sheets
(in thousands, except par value)

ASSETS	October 2, 2022	October 3, 2021
Current assets:		
Cash and cash equivalents	$ 185,094	$ 166,568
Accounts receivable, net	755,112	668,998
Contract assets	92,405	103,784
Prepaid expenses and other current assets	115,400	112,338
Income taxes receivable	10,205	14,260
Total current assets	1,158,216	1,065,948
Property and equipment, net	32,316	37,733
Right-of-use assets, operating leases	182,319	215,422
Investments in unconsolidated joint ventures	4,570	3,282
Goodwill	1,110,412	1,108,578
Intangible assets, net	29,163	37,990
Deferred tax assets	47,804	54,413
Other long-term assets	57,976	53,196
Total assets	$ 2,622,776	$ 2,576,562
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 147,436	$ 128,767
Accrued compensation	237,669	206,322
Contract liabilities	241,340	190,403
Short-term lease liabilities, operating leases	57,865	67,452
Current portion of long-term debt	12,504	12,504
Current contingent earn-out liabilities	28,797	19,520
Other current liabilities	190,406	223,515
Total current liabilities	916,017	848,483
Deferred tax liabilities	15,161	10,563
Long-term debt	246,250	200,000
Long-term lease liabilities, operating leases	146,285	174,285
Long-term contingent earn-out liabilities	36,769	39,777
Other long-term liabilities	79,157	69,163
Commitments and contingencies (Note 17)		
Equity:		
Preferred stock – Authorized, 2,000 shares of $0.01 par value; no shares issued and outstanding at October 2, 2022 and October 3, 2021	—	—
Common stock – Authorized, 150,000 shares of $0.01 par value; issued and outstanding, 52,981 and 53,981 shares at October 2, 2022 and October 3, 2021, respectively	530	540
Accumulated other comprehensive loss	(208,144)	(125,028)
Retained earnings	1,390,701	1,358,726
Tetra Tech stockholders' equity	1,183,087	1,234,238
Noncontrolling interests	50	53
Total stockholders' equity	1,183,137	1,234,291
Total liabilities and stockholders' equity	$ 2,622,776	$ 2,576,562

See accompanying Notes to Consolidated Financial Statements.

Figure 7. Consolidated Statements of Income

Tetra Tech, Inc.
Consolidated Statements of Income
(in thousands, except per share data)

	Fiscal Year Ended		
	October 1, 2023	October 2, 2022	October 3, 2021
Revenue	$ 4,522,550	$ 3,504,048	$ 3,213,513
Subcontractor costs	(771,461)	(668,468)	(661,341)
Other costs of revenue	(3,026,060)	(2,260,021)	(2,053,772)
Gross profit	725,029	575,559	498,400
Selling, general and administrative expenses	(305,107)	(234,784)	(222,972)
Acquisition and integration expenses	(33,169)	—	—
Right-of-use operating lease asset impairment	(16,385)	—	—
Contingent consideration – fair value adjustments	(12,255)	(329)	3,273
Income from operations	358,113	340,446	278,701
Interest income	5,898	1,780	917
Interest expense	(52,435)	(13,364)	(12,748)
Other non-operating income	89,402	19,904	—
Income before income tax expense	400,978	348,766	266,870
Income tax expense	(127,526)	(85,602)	(34,039)
Net income	273,452	263,164	232,831
Net income attributable to noncontrolling interests	(32)	(39)	(21)
Net income attributable to Tetra Tech	$ 273,420	$ 263,125	$ 232,810
Earnings per share attributable to Tetra Tech:			
Basic	$ 5.14	$ 4.91	$ 4.31
Diluted	$ 5.10	$ 4.86	$ 4.26
Weighted-average common shares outstanding:			
Basic	53,203	53,620	54,078
Diluted	53,637	54,163	54,675

See accompanying Notes to Consolidated Financial Statements.

Figure 8. Consolidated Statements of Comprehensive Income

Tetra Tech, Inc.
Consolidated Statements of Comprehensive Income
(in thousands)

	Fiscal Year Ended		
	October 1, 2023	October 2, 2022	October 3, 2021
Net income	$ 273,452	$ 263,164	$ 232,831
Other comprehensive income, net of tax			
Foreign currency translation adjustments, net of tax	12,622	(94,933)	30,644
(Loss) gain on cash flow hedge valuations, net of tax	(2,412)	11,806	6,117
Net pension adjustments	2,638	—	—
Other comprehensive income (loss), net of tax	12,848	(83,127)	36,761
Comprehensive income, net of tax	$ 286,300	$ 180,037	$ 269,592
Comprehensive income attributable to noncontrolling interests, net of tax	31	28	24
Comprehensive income attributable to Tetra Tech, net of tax	$ 286,269	$ 180,009	$ 269,568

See accompanying Notes to Consolidated Financial Statements.

Figure 9. Consolidated Statements of Cash Flows

Tetra Tech, Inc.
Consolidated Statements of Cash Flows
(in thousands)

	Fiscal Year Ended		
	October 1, 2023	October 2, 2022	October 3, 2021
Cash flows from operating activities:			
Net income	$ 273,452	$ 263,164	$ 232,831
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	61,206	27,033	23,805
Amortization of stock-based awards	28,607	26,227	23,067
Deferred income taxes	(21,204)	2,175	(38,494)
Fair value adjustments to contingent consideration	12,255	329	(3,273)
Right-of-use operating lease asset impairment	16,385	—	—
Fair value adjustment to foreign currency forward contract	(89,402)	(19,904)	—
Other non-cash items	975	(1,245)	(496)
Changes in operating assets and liabilities, net of effects of business acquisitions:			
Accounts receivable and contract assets	(19,783)	(89,781)	13,301
Prepaid expenses and other assets	78,686	69,697	(582)
Accounts payable	(19,214)	17,099	13,551
Accrued compensation	37,094	27,458	5,425
Contract liabilities	44,152	55,915	13,407
Income taxes receivable/payable	40,527	14,627	13,090
Other liabilities	(75,273)	(56,606)	8,740
Net cash provided by operating activities	368,463	336,188	304,372
Cash flows from investing activities:			
Payments for business acquisitions, net of cash acquired	(854,319)	(49,124)	(84,911)
Settlement of foreign currency forward contract	109,306	—	—
Capital expenditures	(26,901)	(10,582)	(8,573)
Proceeds from sales of assets	715	3,966	492
Net cash used in investing activities	(771,199)	(55,740)	(92,992)
Cash flows from financing activities:			
Proceeds from borrowings	994,859	161,456	370,222
Repayments on long-term debt	(1,026,051)	(117,080)	(414,308)
Proceeds from issuance of convertible notes	575,000	—	—
Payments of debt issuance costs	(14,451)	—	—
Capped call transactions	(51,750)	—	—
Repurchases of common stock	—	(200,000)	(60,000)
Taxes paid on vested restricted stock	(16,833)	(25,223)	(17,630)
Payments of contingent earn-out liabilities	(21,328)	(20,124)	(20,251)
Stock options exercised	626	1,806	11,250
Bank overdrafts	—	—	(36,627)
Dividends paid	(52,113)	(46,099)	(40,041)
Principal payments on finance leases	(5,579)	(4,344)	(2,714)
Net cash provided by (used in) financing activities	382,380	(249,608)	(210,099)
Effect of exchange rate changes on cash and cash equivalents	4,093	(12,314)	7,772
Net (decrease) increase in cash and cash equivalents	(16,263)	18,526	9,053
Cash and cash equivalents at beginning of year	185,094	166,568	157,515
Cash and cash equivalents at end of year	$ 168,831	$ 185,094	$ 166,568
Supplemental information:			
Cash paid during the year for:			
Interest	$ 47,367	$ 13,378	$ 10,330
Income taxes, net of refunds received of $2.2 million, $4.8 million and $2.1 million	$ 93,176	$ 70,799	$ 59,111

See accompanying Notes to Consolidated Financial Statements.

Figure 10. Consolidated Statements of Equity

Tetra Tech, Inc.
Consolidated Statements of Equity
Fiscal Years Ended October 3, 2021, October 2, 2022, and October 1, 2023
(in thousands)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Tetra Tech Equity	Non-Controlling Interests	Total Equity
	Shares	Amount						
BALANCE AT SEPTEMBER 27, 2020	53,797	$ 538	$ —	$ (161,786)	$ 1,198,567	$ 1,037,319	$ 54	$ 1,037,373
Comprehensive income, net of tax:								
Net income					232,810	232,810	21	232,831
Foreign currency translation adjustments				30,641		30,641	3	30,644
Gain on cash flow hedge valuations				6,117		6,117		6,117
Comprehensive income, net of tax						269,568	24	269,592
Distributions paid to noncontrolling interests							(25)	(25)
Cash dividends of $0.74 per common share					(40,041)	(40,041)		(40,041)
Stock-based compensation			23,067			23,067		23,067
Restricted & performance shares released	215	3	(17,633)			(17,630)		(17,630)
Stock options exercised	324	3	11,247			11,250		11,250
Shares issued for Employee Stock Purchase Plan	124	1	10,704			10,705		10,705
Stock repurchases	(479)	(5)	(27,385)		$ (32,610)	(60,000)		(60,000)
BALANCE AT OCTOBER 3, 2021	53,981	540	—	(125,028)	1,358,726	1,234,238	53	1,234,291
Comprehensive income, net of tax:								
Net income					263,125	263,125	39	263,164
Foreign currency translation adjustments				(94,922)		(94,922)	(11)	(94,933)
Gain on cash flow hedge valuations				11,806		11,806		11,806
Comprehensive income, net of tax						180,009	28	180,037
Distributions paid to noncontrolling interests							(31)	(31)
Cash dividends of $0.86 per common share					(46,099)	(46,099)		(46,099)
Stock-based compensation			26,227			26,227		26,227
Restricted & performance shares released	190	2	(25,225)			(25,223)		(25,223)
Stock options exercised	46	—	1,806			1,806		1,806
Shares issued for Employee Stock Purchase Plan	106	1	12,128			12,129		12,129
Stock repurchases	(1,342)	(13)	(14,936)		(185,051)	(200,000)		(200,000)
BALANCE AT OCTOBER 2, 2022	52,981	530	—	(208,144)	1,390,701	1,183,087	50	1,183,137
Comprehensive income, net of tax:								
Net income					273,420	273,420	32	273,452

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Tetra Tech Equity	Non-Controlling Interests	Total Equity
	Shares	Amount						
Foreign currency translation adjustments				12,623		12,623	(1)	12,622
Pension				2,638		2,638		2,638
Gain on cash flow hedge valuations				(2,412)		(2,412)		(2,412)
Comprehensive income, net of tax						286,269	31	286,300
Distributions paid to noncontrolling interests							(8)	(8)
Cash dividends of $0.98 per common share					(52,113)	(52,113)		(52,113)
Stock-based compensation			28,607			28,607		28,607
Restricted & performance shares released	149	1	(16,834)			(16,833)		(16,833)
Stock options exercised	19	—	626			626		626
Shares issued for Employee Stock Purchase Plan	99	1	12,627			12,628		12,628
Reclassification of APIC			26,724		(26,724)	—		—
Capped call transactions			(51,750)		12,912	(38,838)		(38,838)
BALANCE AT OCTOBER 1, 2023	53,248	$ 532	$ —	$ (195,295)	$ 1,598,196	$ 1,403,433	$ 73	$ 1,403,506

See accompanying Notes to Consolidated Financial Statements.

Figure 11. Notes to Consolidated Financial Statements

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Tetra Tech, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Tetra Tech, Inc. and its subsidiaries (the "Company") as of October 1, 2023 and October 2, 2022, and the related consolidated statements of income, of comprehensive income, of equity and of cash flows for each of the three years in the period ended October 1, 2023, including the related notes and financial statement schedule listed in the accompanying index (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of October 1, 2023, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of October 1, 2023 and October 2, 2022, and the results of its operations and its cash flows for each of the three years in the period ended October 1, 2023 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of October 1, 2023, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Revenue Recognition - Determination of Total Estimated Contract Cost for Fixed-price Contracts

As described in Note 3 to the consolidated financial statements, $1.64 billion of the Company's total revenues for the year ended October 1, 2023 was generated from fixed-price contracts. As disclosed by management, under fixed-price contracts, the Company's clients pay an agreed fixed-amount negotiated in advance for a specified scope of work. Revenue is recognized over time as the related performance obligation is satisfied by transferring control of a promised good or service to the Company's customers. Progress toward complete satisfaction of the performance obligation is primarily measured using a cost-to-cost measure of progress method. The cost input is based primarily on contract cost incurred to date compared to total estimated contract cost. This measure includes forecasts based on the best information available and reflects management's judgment to faithfully depict the value of the services transferred to the customer. Due to uncertainties inherent in the estimation process, it is possible that estimates of costs to complete a performance obligation will be revised in the near-term. For those performance obligations for which revenue is recognized using a cost-to-cost measure of progress method, changes in total estimated costs, and related progress towards complete satisfaction of the performance obligation, are recognized on a cumulative catch-up basis in the period in which the revisions to the estimates are made. As a result, the Company recognized net favorable revenue and operating income adjustments of $11.0 million for the year ended October 1, 2023. Changes in revenue and cost estimates could also result in a projected loss, determined at the contract level, which would be recorded immediately in earnings. The anticipated losses and estimated cost to complete the related contracts was $8.5 million and approximately $68 million, respectively, as of October 1, 2023.

The principal considerations for our determination that performing procedures relating to revenue recognition - determination of total estimated contract cost for fixed-price contracts is a critical audit matter are (i) the significant judgment by management in developing the estimate of total contract cost for fixed-price contracts; and (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and in evaluating audit evidence related to management's estimate of total contract costs for fixed-price contracts with cumulative catch-up adjustments, anticipated losses or claims.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process, including controls over the total estimated contract cost for fixed-price contracts. These procedures also included, among others, (i) evaluating and testing management's process for developing the estimate of total contract cost for a sample of contracts with cumulative catch-up adjustments, anticipated losses or claims, which included evaluating the contract terms and other documents that support those estimates, and testing of underlying contract costs; (ii) assessing management's ability to reasonably estimate total contract costs by performing a comparison of the total estimated contract cost as compared with prior period estimates, including evaluating the timely identification of circumstances that may warrant a modification to the total estimated contract cost; and (iii) evaluating, for certain contracts, management's methodologies and assessing the consistency of management's approach over the life of the contract.

Acquisition of RPS Group plc – Valuation of Certain Client Relations and Trade Name

As described in Note 5 to the consolidated financial statements, the Company completed its acquisition of RPS Group plc ("RPS") on January 23, 2023 for a total purchase price of approximately $784 million. Of the total acquired intangible assets of $174.1 million, certain client relations and a trade name represent the majority. Fair value was estimated by management using a multi-period excess earnings method for client relations and a relief from royalty method for trade names. Management's significant assumptions used in estimating fair value of client relations include (i) the estimated life the asset will contribute to cash flows, such as remaining contractual terms, (ii) revenue growth rates and EBITDA margins, (iii) attrition rate of customers, and (iv) the estimated discount rates that reflect the level of risk associated with receiving future cash flows. The significant assumptions used in estimating fair value of trade name include the royalty rates and discount rates.

The principal considerations for our determination that performing procedures relating to the valuation of certain client relations and trade name in the acquisition of RPS Group plc is a critical audit matter are (i) the significant judgment by management when developing the fair value estimate of certain client relations and trade name acquired, (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating management's significant assumptions related to estimated life, revenue growth rates, customer attrition rates, EBITDA margins and discount rates for certain client relations and a royalty rate and discount rate for a trade name, and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the acquisition accounting, including controls over management's valuation of certain client relations and trade name acquired. These procedures also included, among others, (i) reading the purchase agreement; (ii) testing management's process for developing the fair value estimate of certain client relations and trade name acquired; (iii) evaluating the appropriateness of the multi-period excess earnings and relief from royalty methods used by management; (iv) testing the completeness and accuracy of the underlying data used in the multi-period excess earnings and relief from royalty methods; and (v) evaluating the reasonableness of the significant assumptions used by management related to the estimated life, revenue growth rates, customer attrition rates, EBITDA margins and discount rates for certain client relations and the royalty rate and discount rate for a trade name. Evaluating management's assumptions related to the estimated life, revenue growth rates, customer attrition rates and EBITDA margins for client relations involved considering (i) the current and past performance of RPS; (ii) the consistency with external market and industry data; and (iii) whether the assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in evaluating (i) the appropriateness of the multi-period excess earnings and relief from royalty methods and (ii) the reasonableness of the discount rate assumption for certain client relations and trade name, as well as, the royalty rate for a trade name.

/s/ PricewaterhouseCoopers LLP

Los Angeles, California
November 22, 2023

We have served as the Company's auditor since 2004.

APPENDIX D: SAMPLE CONTRACT (RESPONSE TO QUESTION D3)

Tetra Tech proposes using the standard State contract below. We have provided payment terms and added one clause at the end, otherwise, this contract's content is as we found it on the Division of Administration, Office of State Procurement's website (https://www.doa.la.gov/doa/osp/agency-resources/professional-contracts/).

CONTRACT BETWEEN STATE OF LOUISIANA

(Revised 9-26-24)

NAME OF DEPARTMENT/AGENCY

AND

CONTRACTOR NAME

CONTRACT NUMBER *(ISIS/LAGOV)*

TYPE OF SERVICES TO BE PROVIDED

PROFESSIONAL SERVICES ☐ CONSULTING SERVICES ☐ SOCIAL SERVICES ☐ PERSONAL SERVICES ☐ AGENCY ☐
GOVERNMENTAL ☐ COOPERATIVE ENDEAVOR ☐

CONTRACTOR (Legal Name if Corporation)

FEDERAL EMPLOYER TAX ID NUMBER

STATE LDR ACCOUNT #

STREET ADDRESS

TELEPHONE NUMBER

CITY **STATE** **ZIP CODE**

BRIEF DESCRIPTION OF SERVICES TO BE PROVIDED

BEGIN DATE **END DATE**

MAXIMUM CONTRACT AMOUNT **MULTI-YEAR CONTRACT BREAKDOWN**

TERMS OF PAYMENT – If progress and/or completion of services are provided to the satisfaction of the initiating Office/Facility, payments are to be made as follows:
Net 30

PAYMENT WILL BE MADE ONLY UPON APPROVAL OF: *(Type Title of Personnel only)*

Taxes

Before the contract may be approved, La. R.S. 39:1624(A)(10) requires the Office of State Procurement to determine that the Contractor is current in the filing of all applicable tax returns and reports and in the payment of all taxes, interest, penalties, and fees owed to the state and collected by the Department of Revenue. The Contractor shall provide its seven-digit LDR Account Number to the State for this determination. The State's obligations are conditioned on the Contractor resolving any identified outstanding tax compliance discrepancies with the Louisiana Department of Revenue within seven (7) days of such notification. If the Contractor fails to resolve the identified outstanding tax compliance discrepancies within seven days of notification, then the using agency may proceed with alternate arrangements without notice to the Contractor and without penalty.

Termination for Cause

Should the State determine that the Contractor has failed to comply with the Contract's terms, the State may terminate the Contract for cause by giving the Contractor written notice specifying the Contractor's failure. If the State determines that the failure is not correctable, then the Contract shall terminate on the date specified in such notice. If the State determines that the failure may be corrected, the State shall give a deadline for the Contractor to make the correction. If the State determines that the failure is not corrected by the deadline, then the State may give additional time for the Contractor to make the corrections or the State may notify the Contractor of the Contract termination date.

If the Contractor seeks to terminate the Contract, the Contractor shall file a complaint with the Chief Procurement Officer under La. R.S. 39:1672.2-1672.4.

Termination for Convenience

State may terminate the Contract at any time without penalty by giving thirty (30) days written notice to the Contractor of such termination or negotiating with the Contractor a termination date. Contractor shall be entitled to payment for deliverables in progress, to the extent the State determines that the work is acceptable.

Remedies for Default

Any claim or controversy arising out of this contract shall be resolved by the provisions of LSA - R.S. 39:1672.2 - 1672.4.

Other Remedies

If the Contractor fails to perform in accordance with the terms and conditions of this Contract, or if any lien or claim for damages, penalties, costs and the like is asserted by or against the State, then, upon notice to the Contractor, the State may pursue all remedies available to it at law or equity, including retaining monies from amounts due the Contractor and proceeding against any surety of the Contractor.

Governing Law

This Contract shall be governed by and interpreted in accordance with the laws of the State of Louisiana, including but not limited to La. R.S. 39:1551-1736; rules and regulations; executive orders; standard terms and conditions, special terms and conditions, and specifications listed in the RFP(if applicable); and this Contract. Venue of any action brought, after exhaustion of administrative remedies, with regard to this Contract shall be in the Nineteenth Judicial District Court, Parish of East Baton Rouge, State of Louisiana.

E-Verify

Contractor acknowledges and agrees to comply with the provisions of La. R.S. 39:995 and federal law pertaining to E-Verify in the performance of services under this Contract.

Record Ownership

All records, reports, documents and other material delivered or transmitted to Contractor by State shall remain the property of State, and shall be returned by Contractor to State, at Contractor's expense, at termination or expiration of the Contract. All material related to the Contract and/or obtained or prepared by Contractor in connection with the performance of the services contracted for herein shall become the property of State, and shall be returned by Contractor to State, at Contractor's expense, at termination or expiration of the Contract.

Contractor's Cooperation

The Contractor has the duty to fully cooperate with the State and provide any and all requested information, documentation, etc. to the state when requested. This applies even if this Contract is terminated and/or a lawsuit is filed. Specifically, the Contractor shall not limit or impede the State's right to audit or shall not withhold State owned documents.

Assignability

Contractor may assign its interest in the proceeds of this Contract to a bank, trust company, or other financial institution. Within ten calendar days of the assignment, the Contractor shall provide notice of the assignment to the State and the Office of State Procurement. The State will continue to pay the Contractor and will not be obligated to direct payments to the assignee until the State has processed the assignment.

Except as stated in the preceding paragraph, Contractor shall only transfer an interest in the Contract by assignment, novation, or otherwise, with prior written consent of the State. The State's written consent of the transfer shall not diminish the State's rights or the Contractor's responsibilities and obligations.

Right to Audit and Record Retention

Any authorized agency of the State (e.g. Office of the Legislative Auditor, Inspector General's Office, etc.) and of the Federal Government has the right to inspect and review all books and records pertaining to services rendered under this contract for a period of five years from the date of final payment under the prime contract and any subcontract. The Contractor and subcontractor shall maintain such books and records for this five-year period and cooperate fully with the authorized auditing agency. Contractor and subcontractor shall comply with federal and state laws authorizing an audit of their operations as a whole, or of specific program activities.

Fiscal Funding

The continuation of this contract is contingent upon the appropriation of funds to fulfill the requirements of the contract by the legislature. If the legislature fails to appropriate sufficient monies to provide for the continuation of the contract, or if such appropriation is reduced by the veto of the Governor or by any means provided in the appropriations act to prevent the total appropriation for the year from exceeding revenues for that year, or for any other lawful purpose, and the effect of such reduction is to provide insufficient monies for the continuation of the contract, the contract shall terminate on the date of the beginning of the first fiscal year for which funds are not appropriated.

Non-Discrimination

Contractor agrees to abide by the requirements of the following as applicable and amended: Title VI of the Civil Rights Act of 1964 and Title VII of the Civil Rights Act of 1964; Equal Employment Opportunity Act of 1972; Federal Executive Order 11246; the Rehabilitation Act of 1973; the Vietnam Era Veteran's Readjustment Assistance Act of 1974; Title IX of the Education Amendments of 1972; Age Discrimination Act of 1975; Fair Housing Act of 1968; and, Americans with Disabilities Act of 1990.

Contractor agrees not to discriminate in its employment practices, and shall render services under this contract without regard to race, color, religion, sex, sexual orientation, national origin, veteran status, political affiliation, disability, or age in any matter relating to employment. Any act of discrimination committed by Contractor, or failure to comply with these statutory obligations when applicable shall be grounds for termination of this contract.

Continuing Obligation

Contractor has a continuing obligation to disclose any suspensions or debarment by any government entity, including but not limited to General Services Administration (GSA). Failure to disclosed may constitute grounds for suspension and/or termination of the Contract and debarment from future Contracts.

Eligibility Status

Contractor, and each tier of Subcontractors, shall certify that it is not on the List of Parties Excluded from Federal Procurement or Non-procurement Programs promulgated in accordance with E.O.s 12549 and 12689, "Debarment and Suspension," as set forth at 24 CFR part 24.

Confidentiality

Contractor shall protect from unauthorized use and disclosure all information relating to the State's operations and data (e.g. financial, statistical, personal, technical, etc.) that becomes available to the Contractor in carrying out this Contract. Contractor shall use protecting measures that are the same or more effective than those used by the State. Contractor is not required to protect information or data that is publicly available outside the scope of this Contract; already rightfully in the Contractor's possession; independently developed by the Contractor outside the scope of this Contract; or rightfully obtained from third parties.

Under no circumstance shall the Contractor discuss and/or release information to the media concerning this project without prior express written approval of the State.

Amendments

Any modification to the provisions of this Contract shall be in writing, signed by all parties, and approved by the required authorities.

Prohibition of Discriminatory Boycotts of Israel

In accordance with R.S. 39:1602.1, for any contract for $100,000 or more and for any contractor with five or more employees, the Contractor certifies that neither it nor its subcontractors are engaged in a boycott of Israel, and that the Contractor and any subcontractors shall, for the duration of this contract, refrain from a boycott of Israel. The State reserves the right to terminate this contract if the Contractor, or any Subcontractor, engages in a boycott of Israel during the term of this contract.

Prohibition of Companies That Discriminate Against Firearm and Ammunition Industries

In accordance with La. R.S. 39:1602.2, the following applies to any competitive sealed bids, competitive sealed proposals, or contract(s) with a value of $100,000 or more involving a for-profit company with at least fifty full-time employees:

Unless otherwise exempted by law, by submitting a response to this solicitation or entering into this contract, the Bidder, Proposer or Contractor certifies the following:

1. The company does not have a practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association based solely on the entity's or association's status as a firearm entity or firearm trade association;

2. The company will not discriminate against a firearm entity or firearm trade association during the term of the contract based solely on the entity's or association's status as a firearm entity or firearm trade association.

The State reserves the right to reject the response of the Bidder, Proposer or Contractor if this certification is subsequently determined to be false, and to terminate any contract awarded based on such a false response or if the certification is no longer true.

Cybersecurity Training

In accordance with La. R.S. 42:1267(B)(3) and the State of Louisiana's Information Security Policy, if the Contractor, any of its employees, agents, or subcontractors will have access to State government information technology assets, the Contractor's employees, agents, or subcontractors with such access must complete cybersecurity training annually, and the Contractor must present evidence of such compliance annually and upon request. The Contractor may use the cybersecurity training course offered by the Louisiana Department of State Civil Service without additional cost or may use any alternate course approved in writing by the Office of Technology Services.

For purposes of this Section, "access to State government information technology assets" means the possession of credentials, equipment, or authorization to access the internal workings of State information technology systems or networks. Examples would include but not be limited to State-issued laptops, VPN credentials to credentials to access the State network, badging to access the State's telecommunications closets or systems, or permissions to maintain or modify IT systems used by the State. Final determination of scope inclusions or exclusions relative to access to State government information technology assets will be made by the Office of Technology Services.

Code of Ethics

The Contractor acknowledges that Chapter 15 of Title 42 of the Louisiana Revised Statutes (R.S. 42:1101 et. seq., Code of Governmental Ethics) applies to the Contracting Party in the performance of services called for in this Contract. The Contractor agrees to immediately notify the state if potential violations of the Code of Governmental Ethics arise at any time during the term of this Contract.

Waiver of Consequential Damages and Limitation of Liability. In no event shall either party be liable to the other for any indirect or consequential damages even if the party has been advised as to the possibility of such damages, and regardless of whether the claim for such damages is asserted under a theory of breach of contract, tort or any other theory of liability, and any claim to such damages is expressly waived. For purposes of this section, any damages payable to third parties for an indemnification obligation shall be construed as direct damages. Except for indemnification obligations and personal injury claims, the

liability of either party to the other under this agreement shall not exceed an amount equal to the value of this agreement/relevant project. This limitation of contractual liability shall have no impact on the amount of insurance otherwise available.

Contract Approval

This contract is not effective until executed by all parties and approved in writing by the Office of State Procurement, in accordance with LSA-R.S.39:1595.1.

THUS DONE AND SIGNED AT Baton Rouge, Louisiana on the day, month and year first written above. IN WITNESS WHEREOF, the parties have executed this Agreement as of this day (***enter date***)

APPENDIX E: COST PROPOSAL SUPPLEMENTS

Labor categories, key personnel, and rates by firm are shown in Table 2. The quoted labor rates for Tetra Tech and our partners are fully burdened. To recover material handling, subcontractor costs, and other direct costs (ODC), the Tetra Tech team has included a six percent administrative markup on these ODCs in accordance with cost recovery mechanisms estimated in our most recent annual operating plan.

Table 2. Labor Categories, Key Personnel, and Rates

Rank and key personnel	Calendar year				
	2025	2026	2027	2028	2029
Tetra Tech					
Senior Vice President	$280	$286	$292	$298	$304
Senior Director *Lark Lee, Technical Director, EEWG Lead, and Other Analysis, Studies, and Commission Support Lead*	$270	$276	$282	$288	$294
Director	$260	$266	$272	$278	$284
Senior Manager	$250	$255	$261	$267	$273
Manager *Theresa Wells, Project Manager*	$240	$245	$250	$255	$261
Senior Principal Consultant	$230	$235	$240	$245	$250
Principal Consultant *Katie Jakober, Residential EM&V Lead, Electric Program Evaluation Lead* *Nathan Kwan, Commercial EM&V Lead, Electric Program Evaluation Lead*	$220	$225	$230	$235	$240
Senior Consultant	$210	$215	$220	$225	$230
Consultant	$200	$204	$209	$214	$219
Senior Associate *Andrew Spista, Reporting Lead*	$190	$194	$198	$202	$207
Associate	$180	$184	$188	$192	$196
Senior Analyst	$170	$174	$178	$182	$186
Analyst	$160	$164	$168	$172	$176
Survey Research Center Manager	$180	$184	$188	$192	$196

Rank and key personnel	Calendar year				
	2025	2026	2027	2028	2029
Survey Research Center Operations Manager	$170	$174	$178	$182	$186
Senior Project Support Specialist	$150	$153	$157	$161	$165
Technical Editor	$150	$153	$157	$161	$165
Survey Research Center Supervisors	$60	$62	$64	$66	$68
Survey Research Center Interviewers	$50	$51	$53	$55	$57
Frontier Energy					
Vice President	$260	$266	$272	$278	$284
Director/Principal Consultant *Steve Wiese, Market Potential Studies and Planning Lead*	$260	$266	$272	$278	$284
Senior Manager/Engineering Manager *Derek Neumann, TRM Lead*	$260	$266	$272	$278	$284
Senior Engineer/Senior Program Manager *Alex Rivera, Program Tracking Data Review Lead*	$255	$261	$267	$273	$279
Engineer/Program Manager	$212	$217	$222	$227	$232
Senior Program Consultant/Senior Analyst	$193	$197	$201	$206	$211
Program Consultant/Analyst	$167	$171	$175	$179	$183
Senior Program Coordinator	$142	$145	$148	$151	$155
Administrative	$80	$82	$84	$86	$88
EcoMetric					
President/Executive Vice President	$215	$220	$224	$228	$232
Associate Vice President *Melissa Culbertson, Natural Gas Program Evaluation Lead*	$215	$220	$224	$228	$232
Senior Managing Consultant	$205	$210	$214	$218	$222
Managing Consultant II	$190	$194	$198	$202	$207
Managing Consultant I	$180	$184	$188	$192	$196
Senior Engineer/Senior Analyst	$165	$169	$172	$175	$178
Engineer III/Analyst III	$135	$138	$141	$144	$147

Rank and key personnel	Calendar year				
	2025	2026	2027	2028	2029
Engineer II/Analyst II	$125	$128	$131	$134	$137
Engineer I/Analyst I	$115	$118	$120	$122	$124
Junior Engineer/Junior Analyst	$105	$108	$110	$112	$114
Project Coordinator	$95	$97	$99	$101	$104

APPENDIX F: ADDITIONAL INFORMATION—TEAM EXPERIENCE AND QUALIFICATIONS

Firm overviews, descriptions of project experience of similar size and scope to LPSC's RFP, dashboard/reporting examples, individual biographies for key personnel, and resumes for each key personnel are provided below (Sections F.1, F.2, F.4, F.5, and F.5, respectfully). Section F.6 includes a work product example that Tetra Tech has opted to include, in addition to those requested in the RFP, to further demonstrate Tetra Tech's ability to understand the market and perform the required services.

F.1 FIRM OVERVIEWS

Tetra Tech. Tetra Tech, the proposed prime contractor to conduct evaluation, measurement, and verification (EM&V) for the Louisiana Public Service Commission's (LPSC) program, is a worldwide consulting and engineering firm focused on water, environment, sustainable infrastructure, international development, and renewable energy. Tetra Tech's team of energy experts has provided the full range of energy efficiency planning and evaluation services for over 30 years, including (1) market, process, and impact evaluations; (2) potential assessments and cost-effectiveness studies; (3) program planning and design; (4) policy and planning support; (5) benchmarking; (6) design and implementation of program tracking systems, and (7) M&V studies. Tetra Tech has conducted impact, process, and market evaluations of over 500 energy efficiency and load management programs for more than 50 utilities and energy agencies across North America.

Frontier Energy. Established in 1981, Frontier Energy, Inc. (Frontier) is an engineering and consulting firm with a strong record of delivering energy efficiency solutions for commercial, industrial, and residential sectors. Our firm's expertise encompasses demand-side management, software development, building research and consulting, commercial food service efficiency, and transportation and power. Frontier's 180 employees across seven US offices provide the highest caliber of energy efficiency and engineering services, applying in-depth knowledge of emerging and established technologies to create exceptional solutions customized to clients' needs and local conditions.

Frontier staff have worked in Louisiana since 2008, when a qualitative assessment of energy savings potential was performed for SWEPCO to determine which measures would be cost-effective for program implementation. Frontier has continued to support SWEPCO in Louisiana with services related to regulatory support, deemed savings development, program design, software for tracking and reporting—using Frontier's Program Portfolio Portal (P3®) platform—and cost-effectiveness analysis. Since 2018, Frontier has also provided similar program support for Cleco's energy efficiency portfolio.

EcoMetric Consulting. EcoMetric was founded in 2016 with a mission of providing inspired, forward-thinking advisory services to inform demand-side management (DSM) decision-making. They deliver a comprehensive range of DSM advisory services to natural gas and electric utilities and governing agencies for the residential, commercial, industrial, institutional, and government market segments. EcoMetric's principal consultants are industry leaders in the field of utility energy efficiency program measurement and verification (M&V) practices and take great pride in leveraging evaluation practices to meet regulatory needs, providing valuable information for programs. They regularly contribute to Statewide

Evaluation Frameworks, facilitate working groups, and develop and maintain Technical Reference Manuals (TRMs). EcoMetric staff are creative and passionate consultants who have conducted impact evaluations, process and market studies, net-to-gross assessments, potential studies, and market transformation evaluations, as well as provided regulatory support for natural gas and electric utilities across the United States and Canada. They constantly seek ways to leverage all available data, improve data practices, and work with programs to improve over the long run. EcoMetric is a Minority Certified Enterprise (MCE) certified by the National Minority Supplier Development Council (NMSDC) and can support the LPSC's commitment to supplier diversity.

F.2 PROJECT EXPERIENCE

The project descriptions provided below substantiate the Tetra Tech team's experience conducting projects and evaluation activities similar in size and scope to the LPSC's RFP for an EM&V contractor. We lead with Louisiana experience, followed by regional experience (Southeast), followed by evaluation experience outside of the Southeast.

Indicates the project conducted for a Louisiana-based client

Indicates that one of our provided references from Section 1.1.6 (Response to A6) can speak to the scope and quality of services provided

a. Louisiana Experience

EM&V of Program Year 2024 Portfolio of Energy Efficiency Programs, Entergy Louisiana, LLC, 2024. Tetra Tech was hired by APTIM Environmental and Infrastructure, Inc., the program administrator for Entergy Louisiana, LLC (ELL), to provide EM&V services for ELL's Program Year 2024 energy efficiency portfolio. The process and impact evaluation activities are designed to provide proactive, up-front technical assistance and meaningful feedback on program performance as the programs evolve in response to dynamic market conditions, customer and trade ally needs, and policy and regulatory changes.

Evaluated programs include residential (manufactured homes, multifamily, low-income, new construction, upstream, midstream, and online distribution), education, large commercial and industrial, and agriculture. As the EM&V contractor for PY2024, Tetra Tech (1) establishes evaluation framework and guidance; (2) develops evaluation plans that address cross-cutting, portfolio-related issues, and program-specific needs; (3) establishes M&V and due diligence procedures for implementers through comparison of QA/QC activities to industry-standard practices and surveying a sample of projects; (4) reviews tracking systems and program theories and maintains program communications; (5) conducts evaluations of program impacts through program data and interviews with program managers and key implementation delivery staff, and customer surveys for residential and commercial sectors; (6) reports on the evaluation status and results via established communication protocols, recurring status meetings, and clear project reporting; and (7) provides an essential management decision-making support service that fully meets regulatory needs.

In addition to the utility-specific projects listed above, Tetra Tech conducts several other types of energy and environmental work in the State of Louisiana, including but not limited to biogas, wind, levees, disaster recovery, debris removal, and coastal protection and restoration services.

Biogas Expansion Project, Louisiana St. Laundry Parish, 2024. Tetra Tech's BioCNG group is leading a team to assist the St. Landry Parish Solid Waste Disposal District with implementing an expansion of their successful BioCNG™ biogas conditioning system at the district's landfill in Washington, Louisiana. Tetra Tech is the co-inventor of the patent-pending BioCNG system. The District also commissioned BioCNG to design and construct an off-site renewable natural gas (RNG) fueling station with natural gas backup.

BioCNG provided design, permitting, installation, and startup for the biogas-to-RNG facility. BioCNG first installed a BioCNG 50 gas conditioning unit at the landfill in 2012 and later added a BioCNG 100 expansion unit with an off-site fueling station in 2015. BioCNG provided the gas cleanup skids, RNG storage, and fast fueling stations. The expansion system included a satellite RNG station that is fueled with RNG hauled from the landfill via a tube trailer with natural gas backup.

The results include significant air quality benefits, unique environmental education opportunities for the local community, and an invitation from the State of Louisiana for the District to travel to France to discuss its success story during a trade mission.

FEMA-Criterion Levee System Design and Verification, Flood Protection Authority–East, 2024. Tetra Tech worked with the Flood Protection Authority–East (Authority) in Louisiana to inspect, analyze, and rehabilitate the 40 Arpent Levee to meet Federal Emergency Management Agency (FEMA) requirements for levee certification.

On behalf of the Authority, our team completed the full scope of work for the certification of this system, which includes 24 miles of earthen levee system, 5 miles of steel sheet pile floodwall, seven pump stations, and five closure structures. The initial inspection of all system features informed what analyses were needed (wave, geotechnical, and structural) as well as the current performance of the levee system. At project completion, Tetra Tech documented the final condition of the system by integrating the Authority's drone aerial survey, which was supported by our Tetra Tech Delta expertise, with a physical validation and calibration field inspection.

Our team performed the environmental evaluation and permitting and benefit-cost analyses to support a grant application under the Community Development Block Grant program. The project was awarded the full requested amount, which significantly offset the cost of construction. This project was submitted to FEMA for accreditation of the levee system based on the inspection, design, and analysis performed by Tetra Tech. The accreditation will allow thousands of area residents to purchase low-cost insurance based on the reduction in risk provided by the levee.

Regulatory, Research and Development, Program Design, and Engineering Consulting Services, Southwestern Electric Power Company (Texas, Louisiana), 1999–Present. In addition to the EUMMOT work described above for Oncor, Frontier provides SWEPCO with general regulatory, program design, and engineering consultation, including assisting with statewide planning and reporting in Texas and Louisiana. Through our COMPASS program, Frontier implements most of SWEPCO's commercial energy efficiency programs, targeting all sectors. SWEPCO also uses Frontier's Program Portfolio Portal (P3®) software to track and report on its energy efficiency program portfolio. These programs also leverage several Frontier calculator tools, including the Deemed Savings Engine (DSE).

b. Regional/Southeast Experience

Evaluation of IOU Energy Efficiency Portfolios, Public Utility Commission of Texas, 2013–Present. Tetra Tech leads the statewide evaluation effort of Texas' energy efficiency programs across the eight investor-owned utilities, which includes over 130 programs. The multi-utility EM&V effort documents gross and net energy and demand impacts of the utilities' portfolios. Tetra Tech calculates program cost-effectiveness; provides feedback to the Public Utility Commission of Texas, utilities, and other stakeholders on program portfolio performance; provides ongoing technical assistance, policy, and planning support; and maintains and updates the Texas Technical Reference Manual (TRM) annually.

Tetra Tech leads statewide collaborative groups on both the TRM updates and recommendations to improve the energy efficiency programs. Evaluated programs include conventional energy efficiency programs, as well as low-income, demand response, and solar photovoltaic (PV) programs. Highlights of Tetra Tech's evaluation effort include the development of evaluation tracking and reporting systems for the PUCT. The tracking system incorporates both implementation and evaluation tracking data from multiple years of program operation and supports reporting to the PUCT and the public. The EM&V database, which is updated at regular intervals over the course of each program year, allows Tetra Tech to conduct efficient sampling across utilities, programs, and program years to complete desk reviews, customer surveys, market actor interviews, and on-site M&V as prioritized in the evaluation planning process. Annually, and working closely with the PUCT and utilities, Tetra Tech proposes activities tailored by program and measure type considering key factors that include contributions toward savings; level of savings uncertainty; availability of defensible, relevant secondary data; and importance to future portfolios.

In support of the evaluation activities and promoting transparency, Tetra Tech developed a reporting dashboard that shows project-level information related to the distribution of energy savings across Texas, energy savings by utility and measure category, and retail sales and energy savings by sector and utility. An anonymized version of the dashboard is shown in Section F.3, Figure 12.

In response to reliably delivering the highest quality work products and exemplary technical service and policy support, Tetra Tech has consistently received the highest vendor rating of an A from the state of Texas for this work.[8]

[8] Tetra Tech's latest Vendor Performance Report (published August 2024) is available on the Texas SmartBuy website: https://www.txsmartbuy.gov/vpts/19541485140/89006

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Entergy Arkansas, LLC, 2016–Present. Tetra Tech was hired by EAL to conduct EM&V of EAL's portfolio of residential and commercial energy efficiency and demand response programs. EAL's program portfolio provides a comprehensive range of customer options coupled with education and training activities. EM&V activities have included the development of both multi-year and annual detailed evaluation plans, impact evaluation, process evaluation, ad hoc analyses, investigations into increasing the cost-effectiveness of new measures, and providing updates to inputs in the Arkansas TRM. Tetra Tech staff schedule biweekly meetings with EAL and program implementation staff to review (1) larger projects that may need a measurement and verification (M&V) plan and (2) projects that are being reviewed as part of the annual evaluation cycle. Teams are set up by sector, one for C&I and one for residential (including agriculture).

EM&V activities in Arkansas are largely driven by the Arkansas Public Service Commission Rules for Conservation and Energy Efficiency Programs and the Arkansas TRM. Additionally, evaluators work closely with the Independent Evaluation Monitor (IEM) and with the Parties Working Collaboratively (PWC) to ensure consistency across the state. In this environment, our overarching approach to evaluations has been to (1) verify program tracking data and correctly apply the TRM to calculate savings following the current TRM version; (2) estimate annual gross and net energy and demand impacts for high impact measures, program, and portfolio levels; (3) adjust program-reported gross savings using the results of evaluation research, leveraging the tracking system and engineering desk reviews, metered data analysis, on-site verification, and equipment metering; (4) determine NTG estimates, which in some years, includes primary research and in other years includes consulting with the IEM to leverage prior years' analyses to apply deemed program NTG values that also recognize any changes in program design or the measure mix; (5) provide complete documentation and transparency of all evaluated savings estimates, and where relevant, compare with TRM calculations, as recommended by the IEM; and (6) provide ongoing technical reviews and guidance to EAL and implementers.

As an ad hoc service request, EAL sought to identify and serve customer segments that could benefit most from energy efficiency improvements delivered through its suite of programs. Tetra Tech proposed estimating the energy burden experienced by EAL's low-income customers via the percentage of gross household income spent on electricity costs, as industry research suggests low-income households spend almost three times as much of their income on energy needs as non-low-income households. The resulting analysis and visualizations provided EAL with a tool to identify additional areas of low-income customers for participation in their portfolio of energy efficiency programs, as required by Act 1102.

Commercial Rebate Programs Implementation, Pedernales Electric Cooperative, 2013–Present. Frontier implemented PEC's commercial rebate programs from 2013 until it was discontinued in 2019. Frontier was responsible for program design, incentive rate analysis, outreach, administration, savings calculations, invoicing, rebate payment, and reporting. Frontier has facilitated PEC's solar interconnection process since 2022. Additionally, Frontier facilitated PEC's residential rebate programs from 2013 until the program was discontinued in 2021. Services include the use of Frontier's P3 program tracking software, annual energy savings configuration using Frontier's Deemed Savings Engine (DSE), and client helpdesk support.

Regulatory and Research and Development Support, Oncor Electric Delivery Company, 1999−Present. Through collaboration with the Texas IOUs, operating collaboratively as the Electric Utility Marketing Managers of Texas (EUMMOT), Frontier assists Oncor and the other IOUs with regulatory and other research and development (R&D) efforts. Frontier serves as the primary consultant responsible for managing deemed savings development and the Texas TRM on behalf of EUMMOT. Frontier has also implemented various energy efficiency programs for Oncor, primarily focused on the installation of heat pumps in low-income and hard-to-reach residences. Oncor uses various Frontier calculator tools to provide QA/QC for their own internal calculators.

Regulatory, Research and Development, Program Design, and Engineering Consulting Services, El Paso Electric Company (Texas, New Mexico), 1999−Present. In addition to the EUMMOT work described above for Oncor, Frontier provides EPE with general regulatory, program design, and engineering consultation, including assisting with statewide planning and reporting in Texas and New Mexico. Frontier implements residential and small commercial energy efficiency programs for EPE in their New Mexico service territory. EPE also uses Frontier's Program Portfolio Portal (P3®) software to track and report on its energy efficiency program portfolio. These programs also leverage several Frontier calculator tools, including the Deemed Savings Engine (DSE).

Evaluation, Measurement, and Verification of Save for Tomorrow Energy Plan, CPS Energy, 2015−Present. Since 2015, Frontier has served as the primary EM&V contractor for CPS Energy's Save for Tomorrow Energy Plan (STEP) program portfolio covering more than 20 residential and commercial energy efficiency and demand response (DR) programs. Tetra Tech also joined the evaluation team beginning in 2023. Our work includes program design review, impact and process evaluation, cost-effectiveness analysis, reporting, and innovation. Frontier staff perform savings analysis for DR events using statistical models and Advanced Metering Infrastructure (AMI) data to support various smart thermostat, electric vehicle (EV) managed charging, and commercial load management programs. Frontier also maintains the CPS Energy Guidebook, a TRM-type document that has been adjusted to reflect San Antonio weather and local code adoption.

c. Additional Evaluation Experience

Multi-Evaluation Tasks for Massachusetts Energy Efficiency Programs in the Special and Cross-Sector Studies Area, Massachusetts Program Administrators, 2010−Present. Tetra Tech is among a team of evaluators conducting independent cross-cutting evaluation research for the seven different Massachusetts Program Administrators. Evaluation activities focus on NTG measurement, market effects, non-energy impacts, and codes and standards. From 2010 to 2016, Tetra Tech was the prime consultant on these studies, responsible for the quality and critical review of all primary data collection and market research, analysis, deliverables, budget, and staff/subcontractor oversight. Since 2016, Tetra Tech has been responsible for leading the NTG studies for C&I customers across gas and electric measures. Tetra Tech was also the lead contributor to the 2003 and 2011 NTG methodology study for C&I programs, as well as the 2017 NTG Methodology Research (TXC08), and developing consistent methodologies for self-reported residential NTG (MA19X03-B-RSRNTG). For the C&I studies, Tetra Tech used a self-reported NTG approach to estimate retrospective NTG and a consensus group comprised of PA and Energy Efficiency Advisory Council (EEAC) representatives and expert evaluators to help develop prospective ratios, which are incorporated into the statewide eTRM.

Energy Efficiency Evaluation Services, MidAmerican Energy Company, 2012−Present. Tetra Tech is leading the independent impact, process, and NTG evaluation activities of MidAmerican Energy Company's (MidAmerican) portfolio of residential and nonresidential energy efficiency and demand response programs in Iowa and Illinois. The key objectives are to verify reported energy, demand savings, and project savings; provide recommendations to improve program design and implementation; and develop a best-in-class evaluation infrastructure. In addition to program-level impact evaluation activities and ad hoc projects, Tetra Tech participates in the Iowa TRM Technical Advisory Committee (TAC). As part of the TAC, Tetra Tech provides critical input and review of updates to existing measures and the commercial measure prototype and modeling process.

The Tetra Tech team created several dashboards, a geocoding of program participants, and the development of several web-based tools for cost-effectiveness and nonresidential demand response evaluation. These tools and dashboards increased the transparency of the evaluation, making data more accessible through user-friendly, low-code visualizations. For example, Tetra Tech created a reporting dashboard for MidAmerican's Home Energy Needs Survey, which was used to inform program decisions and plan subsequent program cycles. Tetra Tech developed a participation tool during the prior evaluation cycle that mapped past program participants with demographic information, which allowed for program and resource planning. Lastly, Tetra Tech worked with MidAmerican to update its cost-effectiveness tool and developed an automated demand response savings platform in 2024. Figure 14, through Figure 17 in Section F.3, shows examples of each of the tools discussed above.

Impact Analysis of New Buildings Program, Energy Trust of Oregon, 2023−2024. Tetra Tech was selected to conduct an impact evaluation of the 2021−2022 New Buildings program. The evaluation results will be used for program savings projections, budget development, and reporting to stakeholders. The New Buildings program in 2021−2022 consisted of three different energy codes (2014, 2019, and 2021) and five tracks for incentives on new construction projects: System-Based, Market Solutions, Data Center, Whole Building, and Path to Net Zero. The Tetra Tech team provided estimates of electric and natural gas savings through a combination of facility operator interviews, virtual and in-person site visits, direct measurement of key parameters, and whole building savings analysis through energy modeling.

One of Tetra Tech's accomplishments during this evaluation was the development of a web-based reporting system using a custom dashboard. The dashboard allowed Energy Trust staff to access all completed site reports in a single, centralized location. Users could select a site and project by choosing a project's unique identifier from a drop-down menu or simply entering the characteristics of the site (address, city, zip code, etc.) into a search bar. After selecting a project, a standardized set of reporting metrics, methods, and a documentation checklist were displayed, and users could easily view estimated savings, building square footage, and building system and type. Examples of ETO's dashboard appear in Section F.3, Figure 13.

Evaluation of Conservation and Demand Management Programs, Ontario Independent Electricity System Operator, 2016–Present. EcoMetric has a long history as a trusted evaluator of IESO programs and is the prime contractor for the Impact and Process Evaluations of the Industrial Portfolio and Energy Performance Program for the IESO. EcoMetric also evaluates the IESO's Capability Building Initiatives in the 2021-2024 Conservation and Demand Management (CDM) Framework. The project includes ongoing impact, process, and market effects evaluations. Activities include the design and implementation of a stratified sampling plan, site visit planning and deployment, calculation of ex post energy savings and peak demand reduction achievements, development of 8,760 load shapes, data aggregation and advanced analytics, cost-effectiveness analysis, job impacts analysis, Greenhouse Gas (GHG) emissions analysis, net-to-gross and process interviews, and reporting of impact findings. EcoMetric also led a redesign of the IESO CDM Cost-Effectiveness Tool to include greenhouse gas impacts functionality and valuation.

Statewide Evaluator, New Mexico Public Regulation Commission, 2017–Present. EcoMetric currently leads the Statewide Evaluation Team for the New Mexico Public Regulation Commission (PRC), providing M&V services covering the four New Mexico Investor-Owned Utility (IOU) energy efficiency and load management programs. The IOUs include Southwestern Public Service Company (SPS), Public Service of New Mexico (PNM), El Paso Electric (EPE), and New Mexico Gas Company. Under the direction of the PRC, the team is responsible for conducting the sampling, data collection, savings estimation, Net-to-Gross (NTG) analysis, process evaluation, reporting, and cost-effectiveness calculations for over 45 programs, assuring that ratepayers receive value from the programs they fund. Other core tasks include an annual TRM review and an economic impact analysis to determine the non-energy effects of the program on society, such as the creation of jobs, business activity, and tax revenue.

Residential and Business Program Evaluations, Xcel Energy, 2023-Present. EcoMetric has extensive experience leading product evaluations for Xcel Energy's residential and business programs in both Minnesota and Colorado. As the primary contractor, EcoMetric conducts a comprehensive suite of evaluations, including process, impact, net-to-gross, and equity studies. These evaluations assess a broad range of programs across both sectors and involve a variety of activities, such as the design and implementation of surveys, conducting interviews with trade partners, program staff, and implementers, and providing feedback on program materials. The project also includes benchmarking, logic model development, and customer journey mapping. In addition to gathering data from participants and non-participants, EcoMetric conducts detailed reviews of program materials to evaluate effectiveness and identify areas for improvement. This thorough and multifaceted approach is aimed at providing actionable insights into the performance and impact of Xcel Energy's programs, ultimately supporting continuous improvement and program optimization.

Portfolio Evaluations, Multiple Illinois Utilities, 2018−Present. EcoMetric, as a partner to Guidehouse, plays a critical technical role in continuous impact evaluations for ComEd, Nicor Gas, Peoples Gas, and North Shore Gas programs in Illinois. They lead detailed impact evaluations and conduct engineering desk reviews, telephone interviews, site visits, free-ridership and spillover survey design, survey data analysis, and spillover surveys; findings are presented to the utilities and stakeholder groups. The programs evaluated are a range of electric-only, gas-only, and integrated programs, including custom, prescriptive, data centers, SEM, retro-commissioning, grocery efficiency, small business, school kits, compressed air, new construction, multifamily retrofits, multifamily income-eligible weatherization and kits, and foodbank distribution.

EcoMetric is also deeply involved with ComEd's Emerging Tech Initiatives and is currently evaluating all-electric new homes, very high-efficiency HVAC (variable refrigerant flow systems), insulated window shades, and building operator certification pilots. EcoMetric is evaluating the ENERGY STAR Retail Products Platform (ESRPP) market transformation initiative. EcoMetric is also providing guidance to Illinois utilities on this transformation initiative and recently authored the updated protocols for ESRPP savings methodologies in the Illinois TRM.
EcoMetric is an active participant in multiple aspects of the Illinois statewide advisory group. Through annual evaluation activities, they routinely develop and present evaluation plans, impact reports, NTG research, and cost-effectiveness results to the utilities and SAG as a whole.

EcoMetric is currently engaged with the Technical Advisory Committee (TAC) in updating the Illinois TRM by designing new measures or aggregating evaluation research to update existing measures. They are also actively participating in the market transformation working group, actively leading the development of ESRPP-specific savings protocols this year.

F.3 DASHBOARD/REPORTING EXAMPLES

This section includes dashboard examples that Tetra Tech discussed in project descriptions above.

Figure 12. Example Dashboard for the Public Utility Commission of Texas

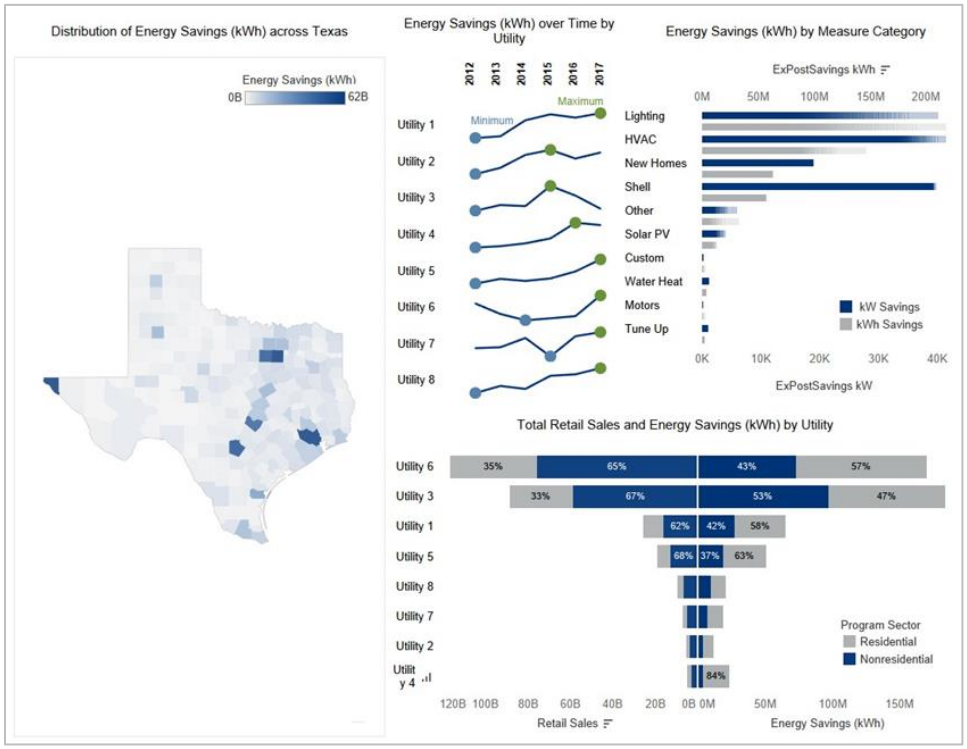
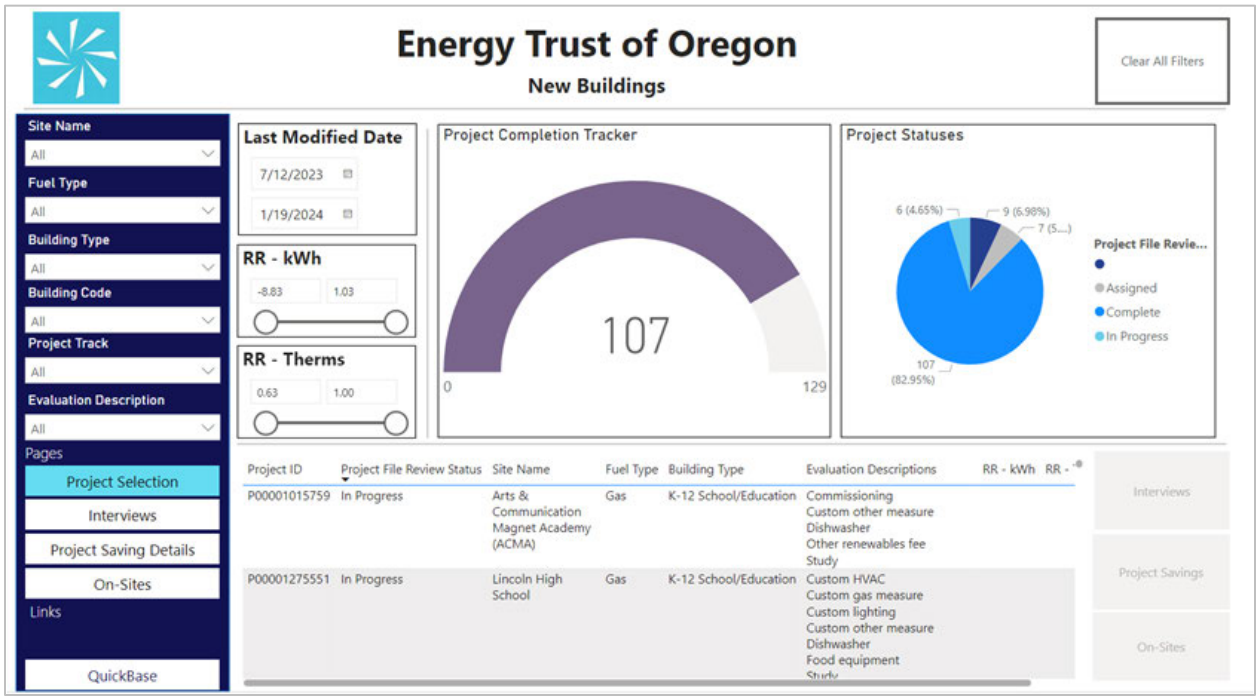


Figure 13. Example Reporting Dashboard Screens for the Energy Trust of Oregon



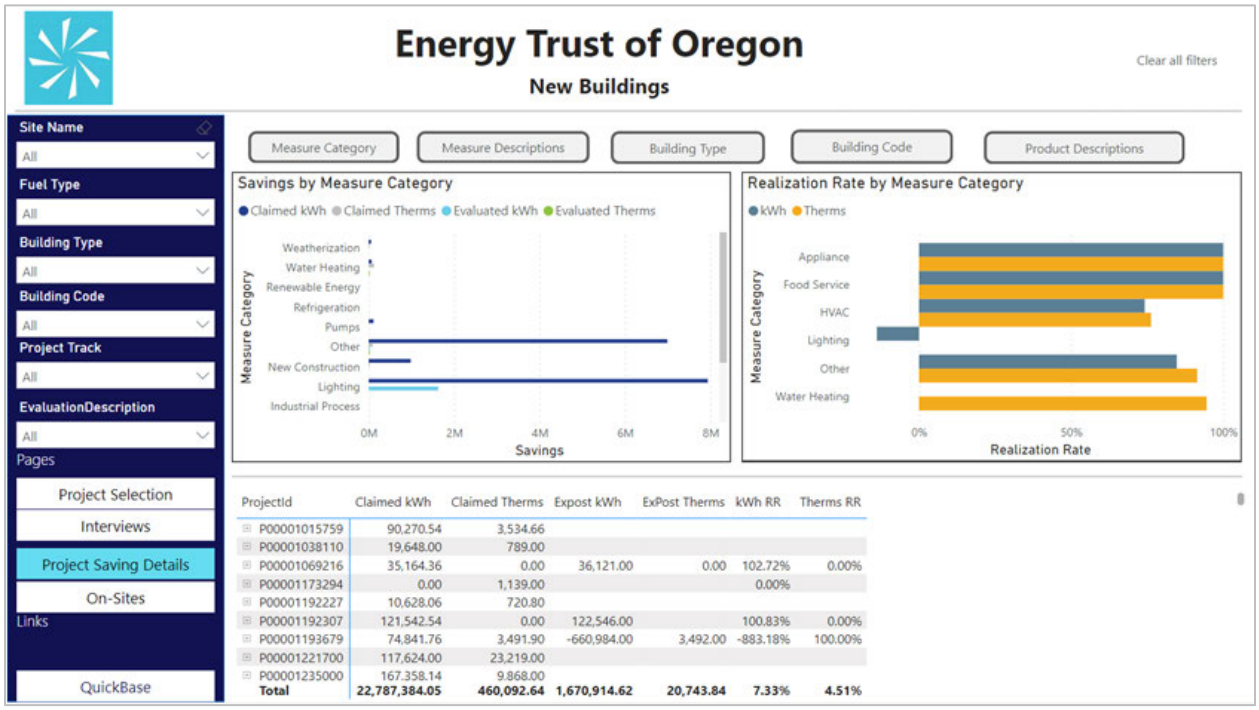


Figure 14. Example Reporting Dashboard for MidAmerican's Home Energy Needs Survey

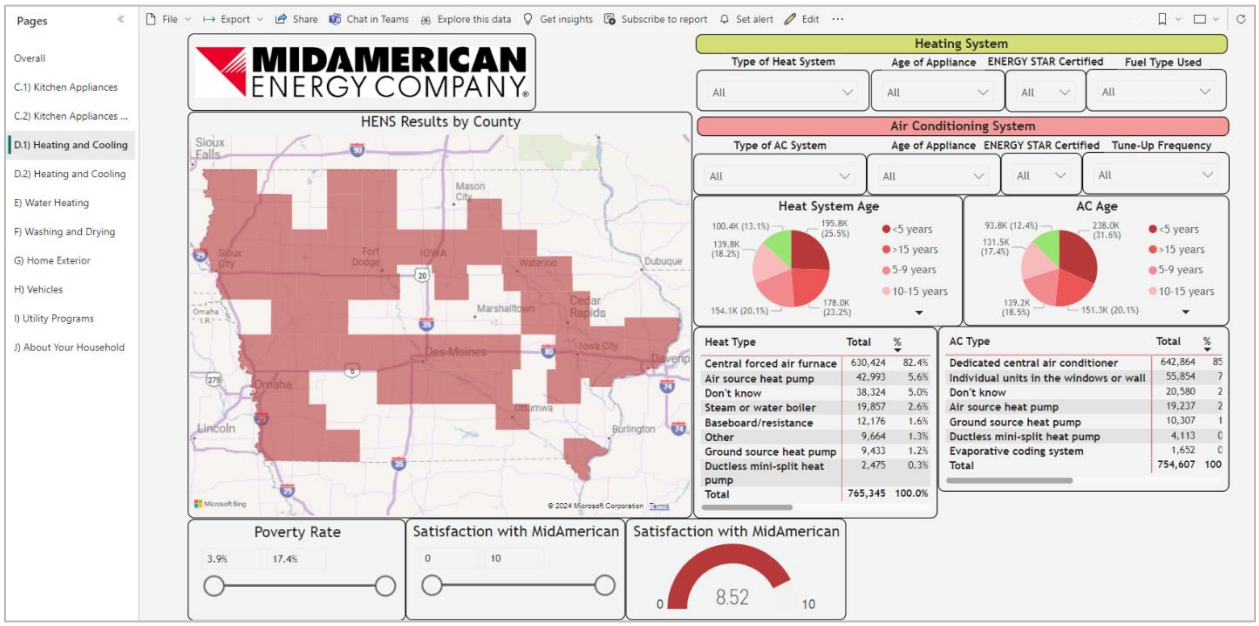


Figure 15. Example Program Participant Mapping Dashboard for MidAmerican

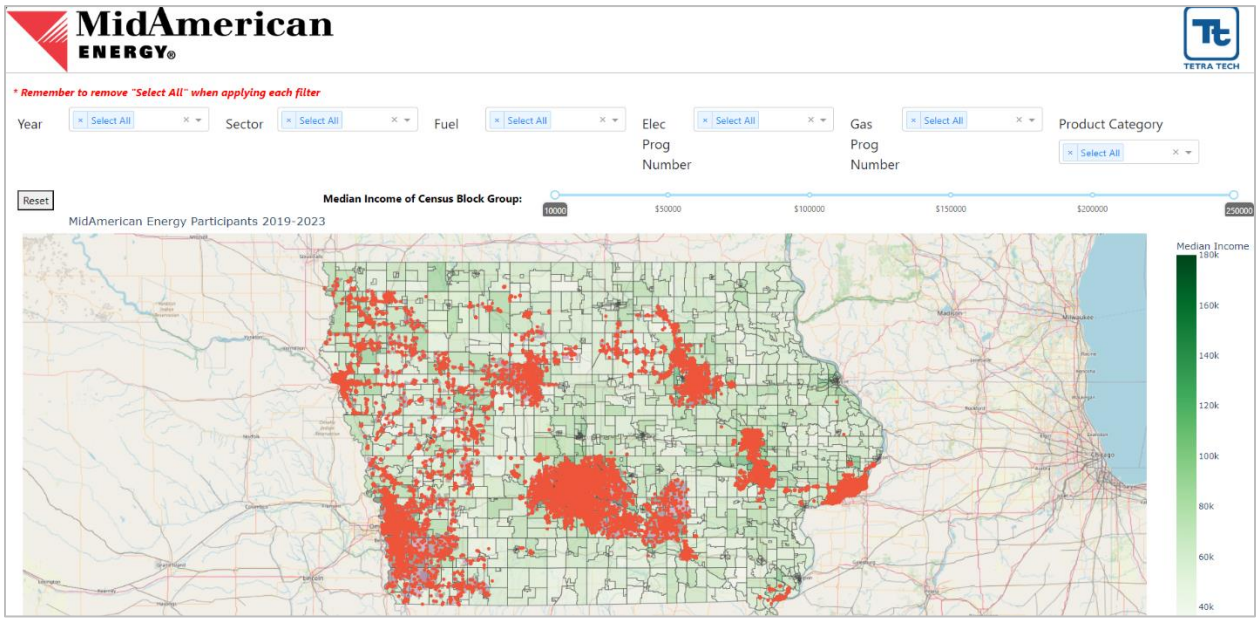


Figure 16. Example Cost-Effectiveness Calculator Developed for MidAmerican

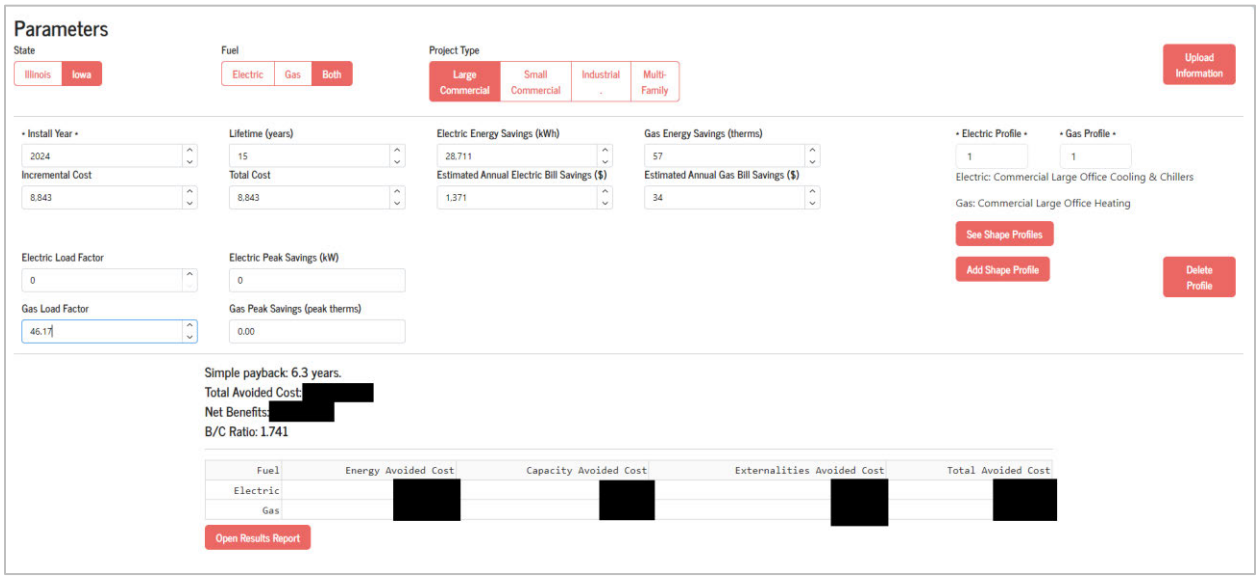
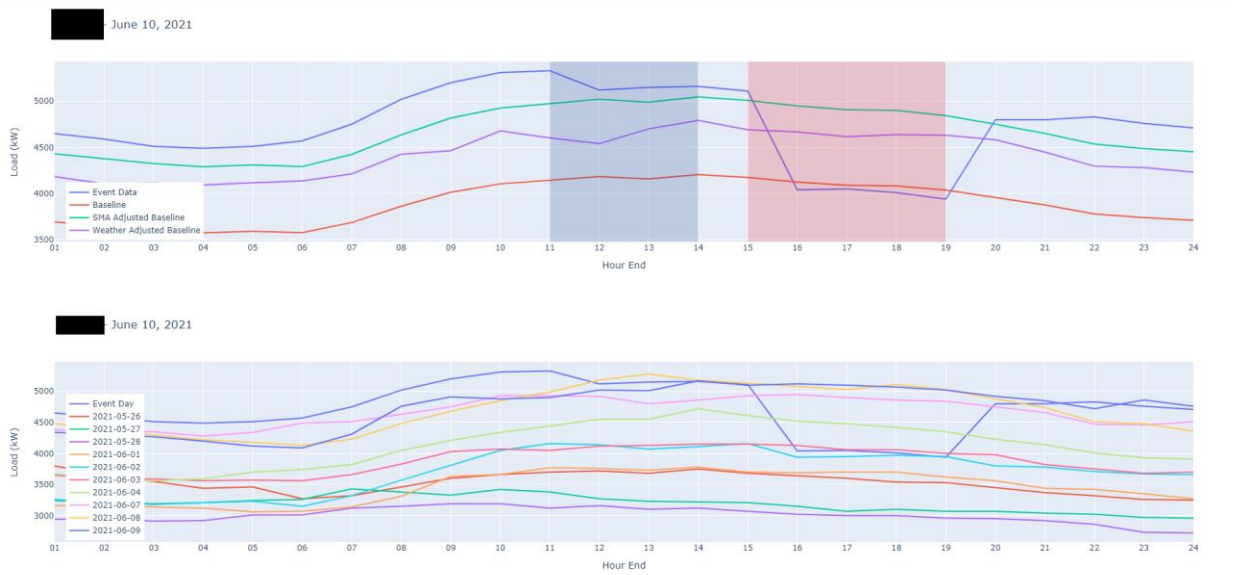


Figure 17. Example Demand Response Evaluation Platform for MidAmerican

Results for [redacted] Event Day - June 10, 2021

Hour Start	Hour End	Event Data (kW)	Baseline (kW)	Unadjusted Demand Reduction (kW)	SMA Adjusted Baseline (kW), ratio: 1.2	SMA Demand Reduction (kW)	SMA Adjusted Baseline (kW), uncapped ratio: 1.23	Uncapped SMA Demand Reduction (kW)	Weather Adjusted Baseline (kW)	Weather Demand Reduction (kW)
0	1	4,650	3,692		4,430		4,540		4,184	
1	2	4,590	3,648		4,378		4,486		4,106	
2	3	4,510	3,604		4,325		4,432		4,117	
3	4	4,490	3,575		4,290		4,396		4,092	
4	5	4,510	3,591		4,309		4,416		4,117	
5	6	4,570	3,577		4,292		4,399		4,137	
6	7	4,750	3,686		4,423		4,533		4,212	
7	8	5,020	3,862		4,634		4,749		4,426	
8	9	5,200	4,014		4,817		4,936		4,464	
9	10	5,310	4,105		4,926		5,048		4,678	
10	11	5,330	4,144		4,973		5,096		4,602	
11	12	5,120	4,184		5,021		5,145		4,540	
12	13	5,150	4,158		4,990		5,113		4,701	
13	14	5,160	4,206		5,047		5,172		4,791	
14	15	5,110	4,174		5,009		5,133		4,691	
15	16	4,040	4,124	84	4,949	909	5,071	1,031	4,667	627
16	17	4,050	4,089	39	4,907	857	5,028	978	4,615	565
17	18	4,010	4,083	73	4,900	890	5,021	1,011	4,639	629
18	19	3,940	4,037	97	4,844	904	4,964	1,024	4,631	691
19	20	4,800	3,959		4,751		4,868		4,582	
20	21	4,800	3,876		4,651		4,766		4,449	
21	22	4,830	3,779		4,535		4,647		4,296	
22	23	4,760	3,739		4,487		4,598		4,282	
23	24	4,710	3,710		4,452		4,562		4,232	
	Averages (Event Only)	4,010	4,083	73	4,900	890	5,021	1,011	4,638	628
	Contracted Amount	1,000								
	Realized Reduction			7.3%		89.0%		101.1%		62.8%

Weather factor: 42.41 kW per degree Fahrenheit, with an R^2 of 0.6501.



F.4 BIOGRAPHIES FOR KEY PERSONNEL

The biographies below highlight the Tetra Tech team's proposed key personnel's experience as it relates to their roles in conducting EM&V services for LPSC.

Lark Lee, Senior Director at Tetra Tech, has over 25 years of energy efficiency program EM&V experience, including leading statewide evaluations for Commissions for the Public Utility Commission of Texas, the Wisconsin Public Service Commission, the California Public Utilities Commission, the Maine Public Utilities Commission, and the Maryland Public Service Commission. She has conducted hundreds of research studies on energy efficiency and demand response programs in the US and abroad. Her areas of expertise include NTG and market research, policy analysis, program design, benchmarking and best practices studies, impact and process evaluation, portfolio evaluation management, training and workshop development, and expert testimony. Two of her strengths are (1) her leadership in practical portfolio-level evaluations that maximize the value of the EM&V activities and (2) her unique ability to engage a range of stakeholders to collaborate effectively. Lark's deep practical knowledge of EM&V practices and issues, along with her experience leading portfolio evaluations of similar scopes and requirements, make her an ideal candidate to support project success as the Technical Director for this project.

Theresa Wells, CAPM, Manager at Tetra Tech, has over 20 years of experience leading process and NTG evaluation and market research activities for residential and commercial energy-efficiency studies, including developing detailed evaluation plans, survey design, logic model development, sample selection, primary and secondary data collection, statistical analysis, and reporting. She has led the survey development, analysis, and reporting for numerous stand-alone studies, including income-qualified programs, new homes programs, appliance recycling programs, appliance rebate programs, demand response programs, HVAC and water heating programs, and Home Performance with ENERGY STAR® programs. Theresa is currently the project manager for Entergy Louisiana and for two Massachusetts C&I omnibus studies. She has led many program-level evaluations, including for FirstEnergy Pennsylvania, NV Energy, Texas PUCT, and Entergy Arkansas.

Katie Jakober, Principal Consultant at Tetra Tech, has over eight years of engineering consulting experience in the energy industry. Katie leads residential program evaluations for the PUCT's eight investor-owned utilities, Entergy Arkansas, and Entergy Mississippi. Her expertise spans all program types, including, upstream and midstream, multifamily, and low-income programs. She has energy efficiency commercial and residential program experience in tracking system review and analysis, engineering desk review analysis, on-site data collection and analysis, identifying and reporting key program findings, developing recommendations, performing cost-effectiveness testing, and reviewing and developing TRM measures. Katie has experience in energy modeling, energy code compliance, and sustainable design consulting and is certified as a LEED® Green Associate.

Nathan Kwan, PE, Principal Consultant at Tetra Tech, has over three years of program evaluation experience in the energy industry. Nathan leads the commercial program evaluations for Entergy Louisiana's Entergy Solutions programs, covering agriculture solutions, commercial and industrial sectors, commercial new construction, and small businesses. He also serves as the impact lead for commercial programs for Entergy Mississippi and Entergy Arkansas and provides technical assistance for Idaho Power Company and the PUCT's eight IOUs. Nathan is experienced in conducting confidence and precision calculations, tracking system reviews, and desk reviews across both residential and commercial programs. Nathan's EM&V experience spans exploring custom and continuous energy management savings methodologies, investigating HVAC tune-up methodologies and ambient weather sources, reviewing project documentation, conducting facility operator and customer in-depth interviews, performing on-site verification, and QA/QC.

Andrew Spista, Senior Associate at Tetra Tech, has over five years of experience in the energy industry. His program evaluation experience includes leading residential program evaluations, performing tracking system reviews and analyses, sampling, conducting on-site visits, and identifying and reporting key program findings. Andrew currently leads the residential evaluation for Entergy Louisiana, and he has analyzed residential and commercial programs for Entergy Mississippi, Entergy Arkansas, the PUCT's eight IOUs, and the Energy Trust of Oregon. Andrew incorporates his analysis results into client reports, remaining mindful of the technical content and making it easily understandable to non-technical viewers. He also develops graphics for information that is best interpreted visually. Andrew has built project status dashboards for multiple clients, providing an interactive tool the client can use to see the project progress in real time. Project dashboards are unique to each client but typically outline information from in-depth interviews along with the status of the interviews, details collected from on-site visits, and project savings.

Derek Neumann, CEM, Engineering Manager at Frontier Energy, has over 15 years of experience in the energy industry, with particular expertise in leading deemed savings development and EM&V projects. As a senior engineer, Derek supervises the development of deemed savings values and Technical Reference Manuals (TRMs) utility program EM&V in Texas and surrounding states. Working closely with utility program management, implementation vendors, regulatory commission staff, statewide evaluators, and other stakeholders, he provides engineering review and analysis for program design and implementation, incentive rate structures, EM&V, and cost-effectiveness.

Derek manages the implementation of energy efficiency rebate programs for residential and commercial market sectors, serving as client/evaluator liaison and account manager responsible for directing rebate processing activities. Through his evaluation and implementation-related

activities, Derek also conducts desk reviews and site audits of energy-efficient equipment installations to validate savings inputs and measure performance.

Derek is a skilled communicator with a proven ability to mediate technical discussions for multi-stakeholder teams. He is highly accessible to clients and well-versed in presenting engineering methods and analysis to widely varying audiences.

Steve Wiese, Director at Frontier Energy, has over 20 years of experience related to distributed renewable energy, energy efficiency, and demand response and brings a strong background in utility program design, implementation, and evaluation. Steve provides oversight for Frontier's implementation division and is responsible for client communication, account management, and achievement of energy efficiency and renewable energy program goals.

Steve is active in industry and community volunteer leadership roles and is the author of more than 40 energy-related reports and publications. He previously worked as a city planner and has been commended for managing multi-stakeholder teams to complete renewable energy and energy efficiency programs and projects for businesses, utilities, regulatory and other government agencies, consumers, and advocacy organizations.

Alex Rivera, Senior Program Manager at Frontier Energy, has over ten years of experience in the energy industry. He manages the product roadmap for EnerTrek® tracking solutions development and the Deemed Savings Engine, Frontier's proprietary web-based tool designed to integrate with external data sources and calculate energy and gas savings for measures as specified in technical documents including the TRMs in Texas, Arkansas, New Mexico, Minnesota, Illinois, Louisiana Deemed Savings, and the Oklahoma Deemed Savings Work Papers. He also manages Program Portfolio Portal (P3®) system administration and oversees program workflow design.

Alex is responsible for ongoing requirements gathering for maintenance, enhancements, and client interaction in Frontier's EnerTrek software division. Alex supports Frontier's web-based tracking systems for various utility program offerings, including Load Management, Low-Income Weatherization, and HVAC Rebates.

Alex is experienced in creating requirement documents related to business processes within Frontier. He also performs analyses on incoming performance data from client programs. Alex came to Frontier with nearly a decade of experience in requirements gathering and documentation, project management, and client communication.

Melissa Culbertson, Associate Vice President at EcoMetric Consulting, brings over 15 years of expertise across diverse energy sectors, ranging from efficiency to electrification to demand response. She is adept at market research, baseline, saturation, and code compliance studies, program and portfolio evaluations, strategic plan development, program design, and hands-on implementation. Melissa has led field verification studies and economic potential assessments, worked with stakeholders to develop policies, and has filed testimony for electric and natural gas portfolios.

Melissa has worked with utility partners in Louisiana, including program planning, implementation, and evaluation. She contributed to the first triennial Plans and implementation efforts and, in 2016, became an evaluator in the state. Melissa was involved in working groups and public meetings to discuss evaluation progress, address issues, and outline the next steps. Melissa co-managed the New Orleans TRM and annual updates, conducted large field studies, and stakeholder engagement, and coordinated with the implementation team. Melissa's

experience spans the Cleco, AEP SWEPCO, Entergy Gulf State, Entergy Louisiana, Entergy New Orleans, Atmos, and CenterPoint Energy service areas. In 2018, Melissa began directing the SWEPCO and Cleco evaluations at ADM Associates; later, in 2022, she began directing portfolio evaluations for Atmos. Melissa also supported Entergy Louisiana and Entergy Gulf States Louisiana, performing cost-effectiveness analyses from 2019 to 2023. Melissa managed a team of over a dozen professionals supporting the LPSC project managers, to execute annual energy efficiency and demand evaluation.

Lark Lee, Senior Director

KEY QUALIFICATIONS

Lark has over 25 years of experience in the energy industry, with particular expertise in large portfolio studies with a diverse range of stakeholders, including statewide evaluations for Commissions. Lark has conducted over 100 research studies of energy efficiency and demand response programs both in the US and abroad. Her areas of expertise include evaluation, measurement, and verification (EM&V) frameworks and management, market research, policy analysis, program design, benchmarking and best practices studies, net-to-gross (NTG) research, and process evaluation. Lark is skilled in several quantitative analysis methods as well as qualitative research. She is an effective communicator to external audiences, having (1) participated in expert panels, (2) published and presented over 50 research papers or sessions at national conferences, (3) given regulatory testimony, (4) led and/or presented to collaborative stakeholder groups, and (5) delivered training on behalf of the Association of Energy Services Professionals (AESP) and at the request of specific utilities.

PROJECT ROLE

Technical Director

AREAS OF EXPERTISE

Process evaluation; impact evaluation; NTG estimation; TRM review; market research; statistical analysis and reporting; stakeholder engagement; regulatory support

AFFILIATIONS/CERTIFICATIONS/ REGISTRATIONS

Association of Energy Services Professionals (AESP)

YEARS OF EXPERIENCE

Over 25

EDUCATION

Master of Policy Analysis, University of Wisconsin—Madison

BA, economics/political science/Spanish, Trinity University, San Antonio, TX

COMMISSION EXPERIENCE

Evaluation of IOU Energy Efficiency Portfolios, Public Utility Commission of Texas, 2013–Present. Tetra Tech has led the evaluation effort of Texas energy efficiency programs across the investor-owned electric utilities over the last 12 years. The EM&V effort documents gross and net energy and demand impacts of the utilities' portfolios. Tetra Tech calculates program cost-effectiveness; provides feedback to the Public Utility Commission of Texas, utilities, and other stakeholders on program portfolio performance; provides ongoing technical assistance, policy and planning support; and maintains and updates the Texas Technical Reference Manual (TRM) annually. Lark is the Project Director and primary liaison to the Commission and utilities for this effort, which includes presenting at statewide collaborative group meetings and working groups to solicit stakeholder input and regularly providing subject matter expertise to the Commission.

Statewide Evaluation of Low-Income and Targeted Home Performance with ENERGY STAR® Programs, Wisconsin Focus on Energy, 2000–2010. Lark led the statewide evaluations of the low-income programs and Targeted Home Performance with ENERGY STAR. These comprehensive evaluations included a rigorous analysis of program impacts, including non-energy benefits, and identified a number of process improvements resulting in improved program design and delivery. Lark also led the statewide evaluations of the Focus on Energy trainings that were designed to increase energy efficiency practices, including codes and standard training.

Evaluation of Efficiency Maine Business Program, Maine Public Utilities Commission, 2006–2007. Lark led the first impact and process evaluation of Maine's statewide commercial energy efficiency business program, Efficiency Maine.

Impact and Process Evaluation of the State of Maryland's Electric Universal Service Program, Maryland Public Service Commission, 2004–2006. Lark led the process and impact evaluation of EUSP. The longitudinal evaluation provided the client with quantitative support of the program's effect on participants' bill payment behaviors and process findings.

Impact Evaluation of Local Government Partnerships Program, California Public Utilities Commission, 2008–2009. Lark was part of the team evaluating non-resource activities and led the impact evaluation of training activities conducted by the partnerships. The evaluation quantified energy and demand savings resulting from training participant survey results and deemed savings.

UTILITY EXPERIENCE

Evaluation, Measurement, and Verification Services for Program Year 2024 Energy Efficiency Portfolio, APTIM Environmental and Infrastructure, 2024. Tetra Tech was hired by APTIM Environmental and Infrastructure, Inc., the program administrator for Entergy Louisiana, LLC (ELL), to provide evaluation, measurement, and verification (EM&V) of ELL's Program Year 2024 (PY2024 or PY10) energy efficiency portfolio. The process and impact evaluation activities are designed to provide proactive, up-front technical assistance and meaningful feedback on program performance as the programs evolve in response to dynamic market conditions, customer and trade ally needs, and policy and regulatory changes. Lark is the Technical Director for this project.

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Entergy Arkansas, LLC, 2016–Present. Tetra Tech is conducting EM&V of Entergy Arkansas, LLC's (EAL) portfolio of residential, commercial, and load management programs. The effort includes a multi-year detailed evaluation plan, impact evaluation, process evaluation, ad hoc analyses, investigations into increasing the cost-effectiveness of new measures, and updates to inputs in the Arkansas TRM. Lark is leading this portfolio evaluation.

Portfolio Net Savings Evaluation of Demand-Side Management Programs, NV Energy 2012, 2016, 2018, 2020, 2023. To inform NV Energy's integrated resource planning, Tetra Tech has led the quantitative free-ridership/spillover studies for NV Energy's demand-side management portfolio of programs in order to accurately estimate net savings resulting from the program since 2012. The Tetra Tech team determined NTG values through rigorous methodologies tailored to program type. The Tetra Tech team used the most recent prior program cycle research, benchmarking results, and in-depth discussions with NV Energy staff and their implementers about future program design and delivery changes to estimate current NTG values and project NTG values for future programs coupled with recommendations for program improvements. Lark led the 2012, 2016, and 2018 studies and served as a technical reviewer on the 2020 and 2023 studies. These efforts have included presenting to the statewide collaborative group and regulatory testimony supporting NV Energy's program plans and filings.

Evaluation of the Nonresidential Smart $aver Custom Program, Duke Energy, 2019–Present. As a subcontractor to Resource Innovation, Tetra Tech is currently leading the process and NTG evaluation of Duke Energy's Nonresidential Smart $aver Custom Incentives program in its Indiana and Carolina territories and previously in Ohio and Kentucky. Lark serves as a technical reviewer, including providing regulatory testimony as needed.

Residential and Nonresidential Energy Efficiency Programs, Black Hills Energy, 2009–Present. Black Hills is committed to energy efficiency programs that both meet energy savings goals and result in high customer satisfaction. A major component of this portfolio evaluation is working with the demand-side management (DSM) staff to identify and facilitate the implementation of EM&V recommendations to improve the programs' performance. The EM&V team also provides significant input into program filings and responding to regulatory requests. Lark served as the technical director for the comprehensive evaluations of Black Hills Energy's energy efficiency portfolios in Iowa, Colorado, and Wyoming from 2009 to 2014.

Comprehensive Evaluations of Nonresidential Demand Side Management Programs, Xcel Energy, 2010–2014. Lark led the evaluations of Xcel Energy's nonresidential programs in Colorado and Minnesota. Tetra Tech worked collaboratively with Xcel Energy to develop rigorous estimates of program gross and net impacts and identify best practices and process improvements to inform future program design. Lark has also provided ad hoc technical advice to Xcel Energy as needed.

Theresa Wells, CAPM, Manager

KEY QUALIFICATIONS

Theresa is an expert in program process and net-to-gross (NTG) evaluations and has more than 20 years of experience designing and managing evaluation and research projects in both commercial and residential sectors. She is currently working on process and NTG evaluations for Massachusetts PAs, FirstEnergy in Pennsylvania, Entergy Arkansas, Black Hills Energy, and the Public Utility Commission of Texas. Recently, she worked on an NTG study to test the ongoing development of a consistent methodology for self-reported residential NTG measurement for the Massachusetts PAs.

PROJECT ROLE

Project Director

AREAS OF EXPERTISE

Process evaluation; NTG estimation; market research; benchmarking; stakeholder engagement; statistical analysis and reporting

AFFILIATIONS/ CERTIFICATIONS/ REGISTRATIONS

Project Management Institute (PMI); Member, Association of Energy Services Professionals (AESP); Certified Associate in Project Management (CAPM)

YEARS OF EXPERIENCE

Over 20

EDUCATION

Presently pursuing BA in biotechnology, Madison College

PROJECT EXPERIENCE

Evaluation, Measurement, and Verification Services for Program Year 2024 Energy Efficiency Portfolio, APTIM Environmental and Infrastructure, 2024. Tetra Tech was hired by APTIM Environmental and Infrastructure, Inc., the program administrator for ELL, to provide EM&V of ELL's Program Year 2024 (PY2024 or PY10) energy efficiency portfolio. The process and impact evaluation activities are designed to provide proactive, up-front technical assistance and meaningful feedback on program performance as the programs evolve in response to dynamic market conditions, customer and trade ally needs, and policy and regulatory changes. Theresa is the Project Manager and leads all project management responsibilities.

Multi-Evaluation Tasks for Massachusetts Energy Efficiency Programs in the Special and Cross-Sector Studies Area, Massachusetts Program Administrators, 2010–Present. Tetra Tech is among a team of evaluators in the independent cross-cutting evaluation activities area for the seven different Program Administrators. Evaluation activities focus on NTG measurement, market effects, non-energy impacts, and codes and standards. Theresa has conducted the NTG analysis for 2019, 2017, 2015, 2014, 2013, and 2011 C&I Free-Ridership and Spillover Studies and is currently managing an NTG study of C&I custom and retrofit programs. She also analyzed program data that used the standard methods for estimating NTG ratios for downstream residential programs to ensure the methodology was working as intended and assessed the effectiveness of the survey questions.

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Entergy Arkansas, LLC, 2016–Present. EAL hired Tetra Tech and its team of evaluators to conduct M&V of EAL's portfolio of residential, commercial, and load management programs. Theresa has been the NTG lead for the Residential Lighting and Appliances program and, in 2020-2021, was the Evaluation Lead for their Point of Purchase Solutions program that has residential and commercial components. As part of that program, she used a triangulated approach to produce NTG results using telephone interviews with upstream retail stores, a review of promotional sales data, and benchmarking research of similar programs to estimate NTG ratios. She currently assists with overall project management, including managing timelines and budgets and performing quality control on project deliverables.

Portfolio Net Savings Evaluation of Demand-Side Management Programs, NV Energy 2012, 2016, 2018, 2020, 2023. To inform NV Energy's integrated resource planning, Tetra Tech has led the quantitative free-ridership/spillover studies for NV Energy's demand-side management portfolio of programs in order to accurately estimate net savings resulting from the program since 2012. The Tetra Tech team determined NTG values through rigorous methodologies tailored to program type. The Tetra Tech team used the most recent prior program cycle research, benchmarking results, and in-depth discussions with NV Energy staff and their implementers about future program design and delivery changes to estimate current NTG values and project NTG values for future programs coupled with recommendations for program improvements. Theresa has managed the day-to-day survey data collection, contributed to data analysis, conducted in-depth interviews with trade allies and stakeholders, performed program benchmarking, and reported actionable results to help inform program design for both the residential and commercial sectors. Most recently, she led the NTG evaluation for NV Energy's portfolio of residential programs.

Evaluation, Measurement, and Verification of Residential and Nonresidential Conservation Programs, FirstEnergy Pennsylvania, 2012–Present. As a subcontractor to ADM Associates, Tetra Tech serves as the process and NTG evaluation lead for all energy efficiency and demand response programs offered by the four operating companies in Pennsylvania. Since 2017, Theresa has led the process and NTG evaluations for the portfolio of low-income programs and several residential programs with downstream and midstream delivery channels. and is currently the NTG lead across all residential and commercial programs. As the Evaluation Lead for these programs, Theresa managed the day-to-day process and NTG activities, including survey design, sample planning, and participant survey efforts. She has conducted in-depth interviews with program managers, implementers, contractors, retailers, and distributors to provide process and NTG results that help inform program design and are actionable.

Statewide Evaluation of Energy Efficiency Portfolios, Public Utility Commission of Texas, 2013–Present. Tetra Tech leads the statewide evaluation effort of Texas energy efficiency programs across the eight investor-owned utilities, which includes over 130 programs. This evaluation effort allows Tetra Tech to provide feedback to the PUCT, utilities, and other stakeholders on program portfolio performance and maintain a statewide TRM. Theresa is responsible for reporting residential process findings and performing NTG estimation and previously assisted with overall project management, including managing timelines and budgets.

Katie Jakober, Principal Consultant

KEY QUALIFICATIONS

Katie has over eight years of engineering consulting experience in the energy industry. Katie leads several residential program evaluations for multiple clients, including commissions with investor-owned utilities. Katie is adept at impact evaluations, cost-effectiveness testing, and code compliance. She has experience with tracking system review and analysis, on-site data collection and analysis, identifying and reporting key program findings, and TRM measure review. Katie also brings residential new construction energy modeling and sustainable design experience and is a certified LEED Green Associate.

PROJECT ROLE

Residential Lead

AREAS OF EXPERTISE

Impact evaluation; TRM review and measure analysis; cost-effectiveness testing; residential programs; and code compliance

AFFILIATIONS/CERTIFICATIONS/ REGISTRATIONS

LEED® Green Associate

BPI Multifamily Technical Committee member; ASHRAE, AESP, NEEP

YEARS OF EXPERIENCE

Over 8

EDUCATION

MBA, energy and sustainability studies, Franklin Pierce University

BS, environmental engineering, University of New Hampshire—Durham

PROJECT EXPERIENCE

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Entergy Arkansas, LLC, 2016–Present. Tetra Tech and its team of evaluators were hired by EAL to conduct EM&V of EAL's portfolio of residential, commercial, and load management programs. The effort includes impact evaluation, process evaluation, ad hoc analyses, investigations into increasing the cost-effectiveness of new measures, and providing updates to inputs in the Arkansas TRM. Katie is the Residential Sector Lead responsible for overseeing the evaluation work of the Home Energy Solutions, Multifamily Homes, Manufactured Homes, and Low-Income Solutions programs. She is also the Impact Lead for the Agricultural Energy Solutions programs overseeing on-site M&V, custom desk reviews, and process activities. Katie also reviews and makes TRM recommendations. She has also assisted with Large Commercial and Industrial Solutions and Small Business programs' desk reviews and calculations testing.

Statewide Evaluation of Energy Efficiency Portfolios, Public Utility Commission of Texas, 2013–Present. The PUCT hired Tetra Tech and its team of evaluators to conduct independent EM&V for the statewide portfolio of programs. The Tetra Tech Team is assisting the PUCT by documenting the gross and net energy and demand impacts of utilities' energy efficiency and load management portfolios; determining cost-effectiveness; preparing and maintaining a statewide TRM; providing feedback for the PUCT, utilities, and other stakeholders on program portfolio performance; and providing input into the utilities' and ERCOT's planning activities. Katie is the overall Residential Sector Lead, responsible for overseeing impact activities for all residential programs, consulting on technical assistance, and reviewing proposed measures for the statewide TRM. She also has supported the impact evaluations for solar PV and commercial programs. Katie is also the cost-effectiveness lead for the portfolio.

Independent Evaluation, Monitoring, and Verification, Entergy Mississippi, LLC, 2014–Present. Tetra Tech is the EM&V subcontractor to ICF, the third-party administrator delivering a portfolio of QuickStart energy efficiency programs for EML. Katie supported the impact evaluation for the residential energy efficiency programs through tracking system reviews, desk reviews, and reporting. Katie has consulted on new measure reviews and analysis. She has also conducted desk reviews as part of the impact evaluation of the commercial energy efficiency program.

Energy Efficiency Monitoring and Evaluation Services, MidAmerican Energy Company, 2014–Present. Tetra Tech is leading the independent process, impact, and NTG evaluation activities of MidAmerican's portfolio of residential, nonresidential, and multi-sector programs in Iowa and Illinois. The Tetra Tech team has been working collaboratively with MidAmerican to achieve the key project objectives: verify reported energy, demand, and therms project savings; provide recommendations to improve program design and implementation; and develop a best-in-class evaluation infrastructure. Tetra Tech also provides strategic insights to MidAmerican on statewide energy efficiency and demand response items such as the Clean Power Plan, NTG, and TRM development. Katie has conducted comprehensive TRM measure reviews and HVAC equipment analyses.

Comprehensive Evaluation of Black Hill's Energy Efficiency Portfolio, Black Hills Energy. Colorado 2010–Present; Iowa 2010–2013 and 2015–2018; Wyoming 2011–2014 and 2016–Present. Tetra Tech is leading the independent process and impact evaluation activities of Black Hills Energy's portfolio of residential and nonresidential programs in multiple territories. The evaluation verifies that each program is achieving the intended energy savings, provides recommended program-level NTG estimates, and confirms areas of structural success, and highlights aspects of program operations that could be improved. Katie is part of the impact evaluation team for the Colorado and Wyoming Residential New Construction programs as well as small business programs. Katie also performed on-site verification for the nonresidential programs in Iowa.

Independent Evaluation, Measurement, and Verification, State of Hawaii Public Utilities Commissioners, 2018–2021. The HPUC hired AEG and its team of evaluators to conduct independent EM&V and assessment services for Public Benefits Fee Administrator (PBFA) programs performance in 2017 and 2018, the State's energy efficiency portfolio standard (EEPS), and related policies and programs. As a subcontractor to AEG, Tetra Tech staff led both the Verification and TRM Framework tasks by documenting the gross and net energy and demand impacts of the Hawaii Energy PBFA individual energy efficiency programs and portfolio; conducted on-site project verifications; reviewed and provided updates to the statewide TRM; provided feedback to the HPUC, Hawaii Energy, and other key stakeholders on program portfolio performance; and recommended best practices in TRM implementation. Katie was responsible for the residential tracking system review calculator tool development and impact evaluation activities, including tracking system reviews and desk reviews. Katie also reviewed TRM measures and informed updates.

Evaluation, Measurement, and Verification of MEA-funded Programs for the Maryland Energy Administration, Maryland Energy Administration, 2011–2013, 2016–2019. Tetra Tech led the EM&V of MEA-funded programs. Results of evaluation activities provided MEA with tracking database improvements, outreach opportunities, increased savings accuracy, and a better understanding of how grant funding is used. Katie assisted with the impact evaluation of the residential renewable energy programs, including developing standards to measure savings for these programs. She also supported the evaluation of the Smart Energy Communities program, where she helped design and compile program data into a new tracking database and reported on process and documentation findings.

Nathan Kwan, PE, Principal Consultant

KEY QUALIFICATIONS

Nathan is an engineer with over seven years of consulting experience in a range of diverse roles in the energy industry. Currently, he evaluates the energy efficiency programs offered by utilities in several states. Previously, he served as a process engineer in the petrochemical industry and an environmental consultant in the power generation sector.

PROJECT ROLE

Commercial Lead

AREAS OF EXPERTISE

Impact evaluation; TRM review and measure analysis

AFFILIATIONS/CERTIFICATIONS/ REGISTRATIONS

Professional Engineer (PE), State of Wisconsin AESP

YEARS OF EXPERIENCE

Over 7

EDUCATION

MS, mechanical engineering, University of Wisconsin—Madison

BS, chemical engineering, The University of Texas at Austin

PROJECT EXPERIENCE

Evaluation, Measurement, and Verification Services for Program Year 2024 Energy Efficiency Portfolio, APTIM Environmental and Infrastructure, 2024. Tetra Tech was hired by APTIM Environmental and Infrastructure, Inc., the program administrator for ELL, to provide EM&V of ELL's Program Year 2024 (PY2024 or PY10) energy efficiency portfolio. The process and impact evaluation activities are designed to provide proactive, up-front technical assistance and meaningful feedback on program performance as the programs evolve in response to dynamic market conditions, customer and trade ally needs, and policy and regulatory changes. Nathan serves as the commercial lead, providing technical assistance and overseeing process and impact evaluations across the Entergy Solutions commercial and industrial, commercial new construction, agriculture solutions, and small business solutions subprograms.

Statewide Evaluation of Energy Efficiency Portfolios, Public Utility Commission of Texas, 2013–Present. The PUCT hired Tetra Tech and its team of evaluators to conduct independent EM&V for the statewide portfolio of programs. The Tetra Tech Team is assisting the PUCT by documenting the gross and net energy and demand impacts of utilities' energy efficiency and load management portfolios; determining cost-effectiveness; preparing and maintaining a statewide Technical Reference Manual; providing feedback for the PUCT, utilities, and other stakeholders on program portfolio performance; and providing input into the utilities' and ERCOT's planning activities. Nathan is currently the HVAC Tune-Up Lead and provided C&I custom technical assistance and conducted desk reviews and report writing in the residential and commercial programs.

Impact Evaluation of the C&I Portfolio, Irrigation Energy Efficiency and Demand Response, Small Business, Residential Lighting, and Multifamily Programs and Process Evaluation of the Multifamily Program, Idaho Power Company, 2018, 2020–2023. IPC hired Tetra Tech to verify claimed energy savings impacts and provide credible and reliable ex-post program energy savings for multiple programs. Most recently, impact and process evaluations of the C&I Custom, Retrofits, and New Construction programs were conducted, and previously, the Irrigation Energy Efficiency program was evaluated. Nathan joined the team in 2021; since he joined, he has conducted desk reviews and phone verification visits for the C&I Custom program. Nathan also conducted QA/QC on desk reviews, performed on-site verification visits,

generated reports, and conducted in-depth interviews with architects and engineers for the C&I Retrofits and New Construction programs.

Evaluation of New Buildings Energy Efficiency Program, Energy Trust of Oregon, 2023–2024. The Energy Trust of Oregon hired Tetra Tech and its team of evaluators to conduct EM&V for its New Buildings Program. The evaluation provides Energy Trust with research-based evidence of whether energy savings are achieved and reports observations with recommendations to improve the accuracy of future ex-ante savings estimates, future engineering studies, and the results of future impact evaluations. The Tetra Tech team is providing estimates of electric and natural gas savings through a combination of facility operator interviews, virtual and in-person site visits, direct measurement of key parameters, and whole-building savings analysis through energy modeling. Nathan has conducted documentation reviews, facility operator interviews, virtual site visits, and final evaluated savings analysis for new construction, commercial, and multifamily buildings incentivized by the program, following both prescriptive energy modeling and custom methodologies.

Comprehensive Evaluation of Colorado, Iowa, and Wyoming Energy Efficiency Portfolios, Black Hills Energy. Colorado 2010–Present; Iowa 2010–2013 and 2015–2018; Wyoming 2011–2014 and 2016–Present. Tetra Tech has led the independent process and impact evaluation activities of Black Hills Energy's portfolio of residential and nonresidential programs in multiple territories. Each program is evaluated once over the program cycle to verify it is achieving the intended energy savings. Tetra Tech provides recommended program-level NTG estimates, confirms areas of structural successes, and highlights aspects of program operations that could be improved. Nathan conducted tracking system and desk reviews for the Wyoming Consumer Products, Wyoming C&I Custom, Colorado Residential New Construction, and Colorado Income Qualified Weatherization programs. He also provided guidance and feedback on developing Colorado Gas's Program Implementation Manual.

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Entergy Arkansas, LLC, 2016–Present. EAL hired Tetra Tech and our team of evaluators to conduct EM&V of the portfolio of residential, commercial, and load management programs. The effort includes a multiyear detailed evaluation plan, impact evaluation, process evaluation, ad hoc analyses, investigations into increasing the cost-effectiveness of new measures, and providing updates to inputs in the Arkansas TRM. Nathan is currently the Small Business, Point of Purchase Solutions (POPS) Impact lead and identifies and reports on key program findings for Entergy Arkansas. He has also led in-depth exploration into HVAC tune-up and Strategic Energy Management (SEM) methodologies, including the exploration of ambient weather data sources. Within the program, Nathan has conducted confidence and precision calculations, tracking system reviews, and desk reviews in Manufactured Homes, Multifamily Homes, Home Energy Solutions, Large Commercial & Industrial, Small Business, Public Institution Solutions, and CoolSaver programs.

Evaluation, Measurement, and Verification (EM&V) of Energy Efficiency Programs, Entergy Mississippi, LLC, 2021–Present. Tetra Tech is the EM&V subcontractor to ICF, the third-party administrator delivering a portfolio of QuickStart energy efficiency programs for Entergy Mississippi, LLC (EML). Tetra Tech's EM&V services include both impact evaluation and process evaluation. Nathan is currently the Impact Lead for the Agricultural Energy Solutions; Small Business; and Commercial, Industrial, Government, and Education programs. He has conducted in-depth interviews of program participants and contractors, provided technical assistance to program implementation, and performed tracking system reviews, desk reviews, and on-site verification visits for the program.

Andrew Spista, CEM, Senior Associate

KEY QUALIFICATIONS

Andrew is an engineer at Tetra Tech with over five years of experience in the utility industry. His work includes engineering analysis, constructing dashboards, and developing visualizations. Before joining Tetra Tech, Andrew had over three years of experience as an energy efficiency engineer working as a program implementer for ComEd's standard and custom programs. He conducted project reviews, reviewed TRM information, and analyzed data trends for the program.

PROJECT ROLE

Reporting Lead

AREAS OF EXPERTISE

Impact evaluation; TRM review; research; reporting

AFFILIATIONS/CERTIFICATIONS/ REGISTRATIONS

Certified Energy Manager (CEM)

YEARS OF EXPERIENCE

Over 5

EDUCATION

MS, renewable and clean energy, University of Dayton

BS, mechanical engineering, University of Dayton

PROJECT EXPERIENCE

Evaluation, Measurement, and Verification Services for Program Year 2024 Energy Efficiency Portfolio, APTIM Environmental and Infrastructure, 2024. Tetra Tech was hired by APTIM Environmental and Infrastructure, Inc., the program administrator for ELL, to provide EM&V of ELL's Program Year 2024 (PY2024 or PY10) energy efficiency portfolio. The process and impact evaluation activities are designed to provide proactive, up-front technical assistance and meaningful feedback on program performance as the programs evolve in response to dynamic market conditions, customer and trade ally needs, and policy and regulatory changes. Andrew leads the residential evaluation, which consists of conducting a tracking system review for each of the programs, reviewing the source calculations, and providing technical assistance.

Statewide Evaluation of Energy Efficiency Portfolios, Public Utility Commission of Texas, 2013–Present. Tetra Tech is leading the statewide evaluation effort of Texas energy efficiency programs across the eight investor-owned utilities, which includes over 130 programs. The EM&V effort documents the energy and demand impacts of the utilities' portfolios and calculates program cost-effectiveness. Tetra Tech provides feedback to the PUCT, utilities, and other stakeholders on program portfolio performance and prepares and maintains a statewide TRM. Andrew drafts reports and develops visualizations for the reporting. He also reviews documentation and assists with data management and cost-effectiveness calculations.

Evaluation, Measurement, and Verification of the New Buildings Program, Energy Trust of Oregon, 2023–2024. The Energy Trust of Oregon hired Tetra Tech and its team of evaluators to conduct EM&V for its New Buildings Program. The evaluation provides Energy Trust with research-based evidence of whether energy savings are achieved and reports observations with recommendations to improve the accuracy of future ex-ante savings estimates, future engineering studies, and the results of future impact evaluations. The Tetra Tech team is providing estimates of electric and natural gas savings through a combination of facility operator interviews, virtual and in-person site visits, direct measurement of key parameters, and whole-building savings analysis through energy modeling. Andrew built a dashboard that provided an analysis of the results of the evaluation team's findings and the progress of the evaluation.

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Entergy Arkansas, LLC, 2016–Present. EAL hired Tetra Tech and its team of evaluators to conduct EM&V of EAL's portfolio of residential, commercial, and load management programs. The effort includes impact evaluation, process evaluation, ad hoc analyses, investigations into increasing the cost-effectiveness of new measures, and providing updates to inputs in the Arkansas TRM. Andrew joined the team in 2022; he has worked on the impact evaluation by reviewing project documentation and completing engineering reviews. He currently analyzes and reports the Home Energy Solutions and the Multifamily program results. He has also conducted site visits for several of the residential programs. Andrew also completed impact and process sampling for residential programs and supports the data infrastructure.

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Entergy Mississippi, LLC, 2014−Present. Tetra Tech is the EM&V subcontractor to ICF, the third-party administrator delivering a portfolio of QuickStart energy efficiency programs for EML. Tetra Tech's EM&V services include both impact evaluation and process evaluation. Andrew leads the HVAC and Tune-Up program and reports the results.

Power BI Improvements for Port Authority of New York New Jersey (PANYNJ), BridgeNet International, 2022 - Present. BridgeNet International hired Tetra Tech to improve the functionality of their dashboard, which displays fleet operators and their noise level departure scores. BridgeNet is also currently working on visualizing the runways for JFK Airport. Andrew is helping BridgeNet add the logos of specific airlines to better present airline noise level information. Andrew is also currently providing support for implementing the functionality of a dashboard displaying the arrivals and departures on the runways for JFK.

Power BI Improvements for SNA, BridgeNet International, 2022. BridgeNet International hired Tetra Tech to improve the functionality of its dashboard, which displays fleet operators and their noise level departure scores. Andrew wrote code that placed each operator in their appropriate tier and created a slicer based on the results of the code. This improvement helped eliminate the need for additional slicers and allowed simpler navigation within the dashboard. It also improved the organization of the data within the visual.

Carrie Koenig, Director

KEY QUALIFICATIONS

Carrie has led process evaluations for residential and C&I energy efficiency and demand response programs, including small business evaluations, as well as market research studies, benchmarking, and best practices studies. As part of these studies, Carrie has led the development of detailed evaluation plans, survey design, logic model development, sample selection, primary and secondary data collection, statistical analysis, and reporting. These evaluations include participant surveys, nonparticipant surveys, benchmarking, and trade ally research utilizing a range of different survey modes to understand market characteristics and trends. Carrie has also led the survey development, analysis, and reporting for numerous stand-alone net-to-gross (NTG) studies and those embedded with process evaluations. She is familiar with multiple methodologies used across different regions and has recently worked with FirstEnergy, Rhode Island Energy, NV Energy, Black Hills Energy, and the Massachusetts Program Administrators. Carrie also has experience working with stakeholder groups and providing expert testimony.

PROJECT ROLE

Process and NTG support

AREAS OF EXPERTISE

Process evaluation; NTG estimation; market research; project management; benchmarking; stakeholder engagement; statistical analysis and reporting; regulatory support

AFFILIATIONS

Association of Energy Service Professionals (AESP)

American Association for Public Opinion Research (AAPOR)

YEARS OF EXPERIENCE

Over 20

EDUCATION

BBA, business management, marketing, Viterbo University

PROJECT EXPERIENCE

Evaluation, Measurement, and Verification of FirstEnergy Companies' Energy Efficiency and Conservation Programs, Jersey Central Power & Light Company, New Jersey, 2022–Present. JCP&L, the FirstEnergy Company in New Jersey, provides energy efficiency programs to its customers as part of the New Jersey CleanEnergy Act. As a subcontractor to ADM Associates, Tetra Tech serves as the process and NTG evaluation lead for the C&I sector, Direct Install and Energy Solutions for Business programs, and the Home Optimization and Peak Demand Reduction programs. The evaluation provides feedback to FirstEnergy on program processes and performance, identifies areas that worked well and areas for improvement, and supports the company's reporting to the New Jersey Statewide Evaluation Manager. Carrie serves as the assignment manager, leading Tetra Tech evaluation activities.

Multi-Evaluation Tasks for Massachusetts Energy Efficiency Programs in the Special and Cross-Sector Studies Area, Massachusetts Program Administrators, 2010–Present. Tetra Tech is among a team of evaluators in the independent cross-cutting evaluation activities area for the seven different Program Administrators. Evaluation activities focus on NTG measurement, market effects, non-energy impacts, and codes and standards. Carrie has led the sampling, survey design, telephone data collection, analysis, and reporting for 2017, 2015, 2014, 2013, and 2011 C&I electric and gas free-ridership and spillover studies. She recently led a study recommending standardized methods for estimating NTG ratios for downstream residential programs.

Demand-Side Management Net-to-Gross, Appliance Saturation, and Market Transformation Studies, NV Energy, 2012, 2016, 2018, 2021, 2023–Present. Tetra Tech is leading a free-ridership/spillover study to recommend NTG values for NV Energy's demand side management, demand response, and energy efficiency programs for their 2024 Integrated Resource Plan. Tetra Tech previously led the free-ridership/spillover, residential appliance saturation, and market transformation studies with program participants and residential customers for NV Energy's demand-side management portfolio of programs. Each year, Tetra Tech determined NTG values for the programs through rigorous methodologies tailored to program type, including reviewing new program designs and benchmarking to help inform the program plan. Carrie is the assignment manager and previously provided testimony on behalf of NV Energy.

Comprehensive Evaluation of Colorado, Iowa, and Wyoming Energy Efficiency Portfolios, Black Hills Energy. Colorado 2010–Present; Iowa 2010–2013 and 2015–2018; Wyoming 2011–2014 and 2016–Present. Tetra Tech has been leading the independent process and impact evaluation activities of Black Hills Energy's portfolio of residential and nonresidential programs in multiple territories. Each program is evaluated once over the program cycle to (1) verify it is achieving the intended energy savings, (2) provide recommended program-level NTG estimates, (3) confirm areas of structural success, and (4) highlight aspects of program operations that could be improved. Carrie has led process evaluations for numerous programs across each territory, including schools-based energy education, low-income, residential, and nonresidential programs that include small businesses. Carrie also serves as the resource lead for this project and is responsible for project budgeting, contracting, tracking, and invoicing.

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Entergy Arkansas, LLC, 2016–Present. Tetra Tech leads the evaluation activities of EAL's portfolio of residential, commercial, and load management programs. The effort includes a multiyear detailed evaluation plan, impact evaluation, process evaluation, ad hoc analyses, investigations into increasing the cost-effectiveness of new measures, and providing updates to inputs in the Arkansas TRM. Carrie oversees the process and NTG evaluations and previously led a general population study to understand customer awareness of EAL's offerings and satisfaction with the company's service. Across the program-specific evaluations, surveys are designed to capture feedback on elements of program participation, including satisfaction.

Evaluation, Measurement, and Verification of Residential and Nonresidential Conservation Programs, FirstEnergy Pennsylvania, 2012–Present. The FirstEnergy Companies are providing energy efficiency and demand response programs to their customers under Pennsylvania Act 129. As a subcontractor to ADM Associates, Tetra Tech is serving as the process and NTG evaluation lead for all programs offered by the four operating companies in Pennsylvania. The evaluation helps FirstEnergy understand program processes, identify improvements, inform impact evaluation activities, plan for future programming, and support the company's reporting to the statewide evaluator hired by the Pennsylvania Public Utility Commission. Carrie led the process evaluation for the portfolio of nonresidential and low-income programs, which included questions on satisfaction with several elements of program participation.

Najoua Jouini, PhD, Manager

KEY QUALIFICATIONS

Najoua is a sustainability and energy consultant with over 13 years of experience leading research studies and projects across a wide range of sectors and stakeholders. Her unique skills allow her to support process and impact evaluation activities for a wide range of gas and electric energy efficiency programs. Najoua has conducted various process evaluation activities for residential and commercial programs, including evaluation planning, survey design and pretesting, in-depth interviewing, logic model design, benchmarking, focus group facilitation, sample design, case studies, and NTG measurement. For impact evaluation activities, she conducted desk reviews, tracking system reviews, TRM updates, and load management analyses. Najoua has leveraged the research results to provide comprehensive and actionable strategies to sponsors to improve operations and achieve their desired goals.

PROJECT ROLE

Load management support

AREAS OF EXPERTISE

Sustainability assessment; social responsibility; stakeholder engagement; process and impact evaluation; market research; energy efficiency; data analysis and reporting

AFFILIATIONS/CERTIFICATIONS/ REGISTRATIONS

Certificate: Energy Analysis and Policy, University of Wisconsin—Madison; Certificate: Environment, Business and Social Responsibility, University of Wisconsin—Madison; AESP; Electric Utility Industry Sustainable Supply Chain Alliance (EUISSCA); Suppliers Partnership for the Environment

YEARS OF EXPERIENCE

Over 13

EDUCATION

PhD, environmental studies, concentration in sustainability, environmental and social life cycle assessment, University of Wisconsin—Madison

MS and BS, mechanical engineering, concentration in energy systems analysis, University of Stuttgart—Germany

RELEVANT PROJECT EXPERIENCE

Statewide Evaluation of Energy Efficiency Portfolios, Public Utility Commission of Texas, 2013–Present. Tetra Tech is leading the statewide evaluation effort of Texas energy efficiency programs across the eight investor-owned utilities, which includes over 130 programs. The EM&V effort documents gross and net energy and demand impacts of the utilities' portfolios and calculates program cost-effectiveness. Tetra Tech provides feedback to the PUCT, utilities, and other stakeholders on program portfolio performance and prepares and maintains a statewide TRM. Najoua supports the impact evaluation of energy efficiency projects by assessing energy savings estimations and providing feedback to Texas utilities. Najoua is the load management and process evaluation lead. She is responsible for the impact evaluation (meter data analysis, TRM updates, and technical support) of all load management programs (summer, winter, residential, commercial) and process evaluations (surveys and market research) of the eight utilities' load management, residential, and commercial programs.

Independent Evaluation, Monitoring, and Verification, Entergy Mississippi, LLC, 2014–Present. Tetra Tech is the EM&V subcontractor to ICF, the third-party administrator that is delivering a portfolio of energy efficiency programs for Entergy Mississippi, LLC (EML). Tetra Tech's evaluation, measurement, and verification (EM&V) services include both impact evaluation and process evaluation. Results obtained during the evaluation will provide consistency and accuracy in evaluation and reporting in order to assist Entergy Mississippi in accurately planning and forecasting current goals. Najoua leads the process and NTG evaluation activities for all residential and commercial programs. Her responsibilities have

included planning, program staff interviews, sampling, data collection through surveys, analysis, and reporting with key recommendations.

Comprehensive Evaluation of Colorado, Iowa, and Wyoming Energy Efficiency Portfolios, Black Hills Energy. Colorado 2010–Present; Iowa 2010–2013 and 2015–2018; Wyoming 2011–2014 and 2016–Present. Tetra Tech has been leading the independent process and impact evaluation activities of Black Hills Energy's portfolio of residential and nonresidential programs in multiple territories. Each program is evaluated once over the program cycle to (1) verify it is achieving the intended energy savings, (2) provide recommended program-level net-to-gross (NTG) estimates, and (3) confirm areas of structural success and highlight aspects of program operations that could be improved. Najoua has led the impact and process evaluations of the New Construction, Small Business, and Schools programs. Evaluation activities include planning, program staff interviews, sampling, desk reviews, tracking system reviews, data collection, analysis, and reporting with recommendations.

Energy Efficiency Monitoring and Evaluation Services, MidAmerican Energy, 2012–Present. Tetra Tech and its team of evaluators are leading the independent process, impact, and NTG evaluation activities of MidAmerican's portfolio of residential and nonresidential programs in Iowa, South Dakota, and Illinois. Tetra Tech is also providing MidAmerican with strategic insights on statewide energy efficiency and demand response items such as the Clean Power Plan, NTG, and TRM development. Najoua supported the process evaluation of MidAmerican's load management programs. She also led the process evaluation of the Commercial New Construction and the Commercial Energy Solutions programs. Evaluation activities included planning, program staff interviews, sampling, data collection, analysis, and reporting with recommendations. In addition, Najoua supported the impact evaluation of MidAmerican's Small Business program and conducted cost-effectiveness and weather trend analysis studies.

Evaluation, Measurement, and Verification of CPS Energy's Energy-Savings Programs, CPS Energy, 2023–Present. As a subcontractor to Frontier Energy, Tetra Tech is conducting EM&V activities to assist in the evaluation of energy reductions for emerging technologies as well as CPS Energy's weatherization, demand response, electric vehicle, solar, and energy efficiency programs. Results obtained during the evaluation will provide consistency and accuracy in evaluation and reporting in order to assist CPS Energy in accurately planning and forecasting current goals. Najoua leads the process and NTG evaluation activities for all residential programs. Her responsibilities have included planning, program staff interviews, sampling, data collection through surveys, analysis, and reporting with key recommendations.

Evaluation, Measurement and Verification of Residential and Nonresidential Conservation Programs, FirstEnergy Pennsylvania, 2012–Present. The FirstEnergy Companies provide energy efficiency and demand response programs to their customers under Pennsylvania Act 129. Tetra Tech (subcontractor to ADM Associates) is leading the process and NTG evaluations for all programs. The evaluation helps FirstEnergy understand program processes, identify improvements, inform impact evaluation activities, plan for future programming, and support the company's reporting to the Statewide Evaluator hired by the Pennsylvania Public Utility Commission. For Phase III (2016–2020), Najoua led the process evaluation of the Residential Behavioral Demand Response program for multiple years. For Phase IV (2021–2025), Najoua led the process evaluation of the Residential Home Energy Reports (HERs) program and Online Audit for multiple years. Evaluation activities include planning, program staff interviews, sampling, data collection through surveys or in-depth interviews, analysis, and reporting with key recommendations.

Graham Thorbrogger, Senior Associate

KEY QUALIFICATIONS

Graham is an engineer at Tetra Tech with an educational background in mathematics and electrical engineering. He is a certified Engineer in Training in Wisconsin with prior experience in commercial electrical substation design. Graham brings over four years of experience in design engineering and impact evaluation; his energy-efficiency program evaluation experience includes (1) residential and commercial tracking system review and analysis, (2) engineering desk reviews and analysis, (3) conducting market actor in-depth interviews, and (4) identifying and reporting key program findings.

PROJECT ROLE

Engineering support

AREAS OF EXPERTISE

Impact evaluation, TRM review, tracking database review

REGISTRATIONS/AFFILIATIONS/ CERTIFICATIONS

Engineer in Training (EIT), State of Wisconsin; ASHRAE; The Institute of Electrical and Electronics Engineers (IEEE)

YEARS OF EXPERIENCE

Over 4

EDUCATION

BS, electrical engineering, University of Wisconsin—Madison

BA, mathematics, Lawrence University

PROJECT EXPERIENCE

Statewide Evaluation of Energy Efficiency Portfolios, Public Utility Commission of Texas, 2013–Present. Tetra Tech is leading the statewide evaluation effort of Texas energy efficiency programs across the eight investor-owned utilities, which includes over 130 programs. The EM&V effort documents gross and net energy and demand impacts of the utilities' portfolios, calculating program cost-effectiveness. Tetra Tech provides feedback to the PUCT, utilities, and other stakeholders on program portfolio performance; and prepares and maintains a statewide TRM. Graham assisted with the impact evaluation by building a database to house impact review data, reviewing project documentation, and completing engineering reviews.

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Idaho Power Company, 2020–Present. IPC hired Tetra Tech to conduct EM&V for many programs. Graham has been part of the impact evaluation team for the Agricultural Irrigation, Shade Tree, New Construction, and C&I Retrofit programs. Graham built databases to combine impact and process evaluation data, reviewed project documentation, completed engineering desk reviews and tracking system reviews, completed impact calculations for shade trees, and conducted in-depth participant interviews.

Energy Efficiency Monitoring and Evaluation Services, MidAmerican Energy, 2012–Present. Tetra Tech is leading the independent process, impact, and NTG evaluation activities of MidAmerican's portfolio of residential, nonresidential, and multi-sector programs in Iowa and Illinois. The Tetra Tech team has been working collaboratively with MidAmerican to achieve the key project objectives: verify reported energy, demand, and therms project savings; provide recommendations to improve program design and implementation; and develop a best-in-class evaluation infrastructure. Tetra Tech is completing an incremental cost study for residential furnaces, air conditioners, and central air-source heat pumps to assess the reasonableness of incremental cost values in the Iowa TRM. Tetra Tech also provides strategic insights to MidAmerican on statewide energy efficiency and demand response items such as the Clean Power Plan, NTG, and TRM development. Graham assisted with the impact and process evaluations by reviewing project documentation, completing engineering desk reviews and tracking system reviews, and conducting trade ally interviews.

Comprehensive Evaluation of Colorado, Iowa, and Wyoming Energy Efficiency Portfolios, Black Hills Energy. Colorado 2010–Present; Iowa 2010–2013 and 2015–2018; Wyoming 2011–2014 and 2016–Present. Tetra Tech leads the independent process and impact evaluation activities of Black Hills Energy's portfolio of residential and nonresidential programs in multiple territories. Each program is evaluated once over the program cycle to (1) verify it is achieving the intended energy savings, (2) provide recommended program-level NTG estimates, and (3) confirm areas of structural success and highlight aspects of program operations that could be improved. Graham built a database to house impact review data, developed custom programming to calculate prescriptive energy savings, reviewed project documentation, completed engineering desk reviews and tracking system reviews, researched deemed savings values, interviewed program participants, and presented the results for several programs since 2021.

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Entergy Arkansas, LLC, 2016–Present. EAL hired Tetra Tech and its team of evaluators to conduct EM&V of EAL's portfolio of residential, commercial, and load management programs. The effort includes impact evaluation, process evaluation, ad hoc analyses, investigations into increasing the cost-effectiveness of new measures, and providing updates to inputs in the Arkansas TRM. Graham assisted with the impact evaluation by building a database to house impact review data, reviewing project documentation, and completing engineering desk reviews and tracking system reviews.

William Lindsey, PhD, Principal Consultant

KEY QUALIFICATIONS

William is a mathematics expert who applies statistical knowledge to solve real problems and inform client decision-making. He is particularly adept at presenting complicated information to a general audience. As a university professor, William taught mathematical statistics, multivariate statistical modeling, and econometrics. His academic research included projects that used large amounts of data and advanced analytical methods. His work has been presented at professional conferences and in peer-reviewed journals. William joined Tetra Tech in October of 2022.

PROJECT ROLE

Data analysis support

AREAS OF EXPERTISE

Statistical analysis; mathematical modeling; data visualization; large group management; effective presentations

REGISTRATIONS/CERTIFICATIONS/ AFFILIATIONS

Google Data Analytics Certificate

YEARS OF EXPERIENCE

Over 6

EDUCATION

PhD, mathematics, Purdue University

MA, mathematics, Oakland University

BSC, mathematics, Oakland University

LOCATION

Wisconsin

PROJECT EXPERIENCE

Statewide Evaluation of Energy Efficiency Portfolios, Public Utility Commission of Texas, 2013–Present. Tetra Tech is leading the statewide evaluation effort of Texas energy efficiency programs across the eight investor-owned utilities, which includes over 130 programs. The EM&V effort documents the energy and demand impacts of the utilities' portfolios and calculates program cost-effectiveness. Tetra Tech provides feedback to the PUCT, utilities, and other stakeholders on program portfolio performance and prepares and maintains a statewide TRM. William joined the project in 2023. He performed a consumption analysis on a residential customer sector, which included weather-corrected consumption models of meter data over multiple years.

Evaluation, Measurement, and Verification of Energy Efficiency Programs, Entergy Arkansas, LLC, 2016–Present. Tetra Tech leads the evaluation activities of EAL's portfolio of residential, commercial, and load management programs. The effort includes a multi-year detailed evaluation plan, impact evaluation, process evaluation, ad hoc analyses, investigations into increasing the cost-effectiveness of new measures, and providing updates to inputs in the Arkansas TRM. William joined the project in 2022 and has spearheaded the modeling and analysis of the demand response programs, which included large-scale models of AMI meter data.

Comprehensive Evaluation of Colorado, Iowa, and Wyoming Energy Efficiency Portfolios, Black Hills Energy. Colorado 2010–Present; Iowa 2010–2013 and 2015–2018; Wyoming 2011–2014 and 2016–Present. Tetra Tech has been leading the independent process and impact evaluation activities of Black Hills Energy's portfolio of residential and nonresidential programs in multiple territories. Each program is evaluated once over the program cycle to (1) verify it is achieving the intended energy savings, (2) provide recommended program-level NTG estimates, (3) confirm areas of structural success, and (4) highlight aspects of program operations that could be improved. William joined the team in 2023. He has helped plan and perform a billing analysis of Black Hills Energy's behavioral program.

Nonresidential Energy Efficiency Program Evaluations, Duke Energy, 2016–Present. As a subcontractor to Nexant, Tetra Tech is responsible for the process and NTG evaluations of Duke Energy's Nonresidential Custom program in its Midwest and Carolinas territories. In addition to the custom program, Tetra Tech also conducted a process and NTG evaluation of their Nonresidential Assessment program in the Carolina's territory. William has worked on sampling and calculating NTG, including free-ridership and spillover, for the C&I sectors. He also performed an analysis of the spillover trends between evaluations.

Savings Assessment Services, Utilidata, 2018–Present. Tetra Tech is providing independent assessments of Utilidata's EM&V savings for its Volt/VAR optimization (VVO) equipment, which is being deployed for several utilities. Tetra Tech does this by employing Utilidata's automated Conservation Voltage Reduction (CVR) Protocol #1. Per Utilidata's standard protocol, the VVO technology is initially implemented in a test, or M&V, period to operate on alternating days for a 90-day M&V period. Under contract to Utilidata, Tetra Tech evaluates the system performance for this time period, estimating energy and demand savings and CVR factors. William has helped analyze the data, including aggregating, modeling, and visualizing the meter data.

Derek Neumann

Senior Engineer/Senior Technology Solutions Associate

Profile

Derek Neumann is a Certified Energy Manager (CEM) with over 15 years of experience in the energy industry with particular expertise in leading deemed savings development and evaluation, measurement, and verification (EM&V) projects. As Senior Engineer, Derek supervises development of deemed savings values for Technical Reference Manuals (TRMs) and utility program EM&V. Working closely with utility program management, implementation vendors, regulatory commission staff, statewide evaluators, and other stakeholders, he provides engineering review and analysis for program design, implementation, incentive rate structures, EM&V, and cost-effectiveness.

Derek manages the implementation of energy efficiency rebate programs for residential and commercial market sectors, serving as client/evaluator liaison and account manager responsible for directing rebate processing activities. Through his evaluation and implementation-related activities, Derek also conducts desk reviews and site audits of energy-efficient equipment installations to validate savings inputs and measure performance.

Derek is a skilled communicator with a proven ability to mediate technical discussions for multi-stakeholder teams. He is highly accessible to clients and well-versed in presenting engineering methods and analysis to widely varying audiences.

Education/Certifications/Professional Associations

B.S., Mechanical Engineering, The University of Texas at Austin, Austin, TX
Certification in Business Foundations, The University of Texas at Austin, Austin, TX
Certified Energy Manager
AESP (Association of Energy Services Professionals); AEE (Association of Energy Engineers)
ASME (American Society of Mechanical Engineers)

Project Experience

Evaluation, Measurement & Verification (EM&V)

- EM&V of Save for Tomorrow Energy Plan (STEP) Energy Efficiency Portfolios, CPS Energy, 2015-Present.
- EM&V of CPS Energy Vendor Energy Efficiency and Demand Response Program Implementation, CPS Energy, 2017-Present.
- EM&V of High-Performance New Construction and Residential New Construction Energy Efficiency Portfolios, Independent Electricity System Operator, formerly Ontario Power Authority, 2013-2016.

- LED Roadway Lighting Pilot Evaluation, Oncor, 2010-2012.

Deemed Savings Development

- Statewide deemed savings development for Texas TRM, Electric Utility Marketing Managers of Texas (EUMMOT) and Public Utility Commission of Texas (PUCT), 2013 to present.
- Pre-TRM Statewide Deemed Savings Development for Texas Investor-Owned Utilities, PUCT, and EUMMOT, 2011 to 2014.
- Statewide deemed savings development for Louisiana IOUs, American Electric Power Southwestern Electric Power Company (AEP SWEPCO), and Cleco Corporation (Cleco), 2017 to present.
- Statewide deemed savings development for Arkansas TRM, Arkansas Public Service Commission (AR PSC) and Arkansas Parties Working Collaboratively (PWC), 2011 to 2016
- Supporting deemed savings development for New Mexico TRM on behalf of El Paso Electric, 2009 to present.
- Supporting deemed savings development for Illinois TRM on behalf of GTI Energy, 2019 to present.

Calculator Development

- Engineering support and QA/QC for Deemed Savings Engine (DSE), multiple electric and gas utilities
- Development and maintenance of Lighting Survey Form (LSF) Commercial Lighting Calculator, multiple electric utilities spanning several states, including Texas, Louisiana, and New Mexico, 2011 to present.
- Development and maintenance of Air Conditioning Evaluator (ACE) Commercial HVAC Calculator, multiple electric utilities spanning several states, including Texas, Louisiana, and New Mexico, 2013 to present.
- Development and maintenance of Cool Roof Calculator (CRC), multiple electric utilities spanning Texas and Louisiana, 2013 to present.
- Development and maintenance of Residential Marketplace and Load Management calculators, El Paso Electric Texas and New Mexico, 2022 to present.

Steven M. Wiese

Director of Implementation

Profile

Steve Wiese provides oversight for Frontier's implementation division and is responsible for client communication, account management, and achievement of energy efficiency and renewable energy program goals.

With over 20 years of experience related to distributed renewable energy, energy efficiency, and demand response, he brings a strong background in utility program design, implementation, and evaluation. Steve has broad experience with implementation and contractor outreach for energy efficiency, demand response, and renewable energy programs.

Energy efficiency programs currently directed by Steve include:

- Residential and Hard-to-Reach
- Targeted Low Income
- Multifamily New Construction
- Multifamily HVAC
- Multifamily Direct Install
- Small Business
- Residential Solar Photovoltaic
- Commercial Solar Photovoltaic
- Appliance Rebates

Steve is active in industry and community volunteer leadership roles and is the author of more than 40 energy-related reports and publications. He previously worked as a City Planner and has been commended for managing multi-stakeholder teams to complete renewable energy and energy efficiency programs and projects for businesses, utilities, regulatory and other government agencies, consumers, and advocacy organizations.

Education/Certifications/Training

Master of Business Administration, Graduate School of Business, The University of Texas at Austin

Master of Public Affairs, LBJ School of Public Affairs, The University of Texas at Austin

Bachelor of Arts in Biological Sciences and Public Policy, The University of California at Davis

Frontier Energy Experience

2014 to present

- Responsible for the delivery of kW and kWh savings via implementation of 19 energy efficiency and renewable energy programs for 9 electric and gas utility clients in 4 states.
- Contribute to all phases of the program lifecycle, from design and implementation to evaluation. Provide expertise in support of program development, outreach, and regulatory affairs.
- Hire and manage all program implementation field and office staff.
- Steve's work at Clean Energy Associates and Frontier in jointly implementing solar/photovoltaic programs for Texas utilities since 2009 has resulted in the installation of over 20 MW of distributed solar energy capacity.

Prior Experience

Owner, Founder, Principal Consultant, Clean Energy Associates, 2007 – 2014

- Managed multi-stakeholder teams to initiate, plan, execute, monitor, and complete renewable energy programs and projects for businesses, utilities, regulatory and other government agencies, consumers, and advocacy organizations.
- Provided expert knowledge leading to improved performance of distributed and utility-scale PV installations.
- Engaged extensively in solar business development in Texas, managed strategic partner relationships, promoted and supported sales channels, and routinely met and exceeded contracted goals.
- Leveraged deep experience in solar policy and regulatory affairs, power purchase agreements, leases, and renewable energy credit trading.

Professional Affiliations & Activities

- Texas Property Assessed Clean Energy (PACE) Implementation Group, Co-Chair (with Senator Kip Averitt, 8/2013 – present) of the Program Design Working Group
- Austin Local Solar Advisory Committee, Chair, May – November 2012. Chaired (elected) 20-person committee appointed by Austin City Council and achieved a unanimous recommendation on a final Strategic Plan for Local Solar in Austin through 2020.
- Texas Renewable Energy Industries Association (TREIA) – President (elected) of the Board of Directors (February 2010 – January 2013). Member (elected) of the Board 2009 – 2011. Co-chair of solar and distributed generation committee 2007 – 2009. Member since 1996. Recipient of Volunteer of the Year award in 2008 and Member of the Year award in 2012.

Alex Rivera

Senior Program Manager/Technology Product Manager

Profile

Alex Rivera manages the product roadmap for EnerTrek® tracking solutions development and the Deemed Savings Engine, Frontier's proprietary web-based tool designed to integrate with external data sources and calculate energy and gas savings for measures as specified in technical documents including the Technical Reference Manuals (TRMs) in Texas, Arkansas, New Mexico, Minnesota, Illinois, Louisiana Deemed Savings, and the Oklahoma Deemed Savings Work Papers. He also manages P3® system administration and oversees program workflow design.

Alex is responsible for ongoing requirements gathering for maintenance, enhancements, and client interaction in Frontier's EnerTrek software division. Alex supports Frontier's web-based tracking systems for various utility program offerings, including Load Management, Low Income Weatherization, and HVAC Rebates.

Alex is experienced in creating requirement documents related to business processes within Frontier. He also performs analyses on incoming performance data from client programs. Alex came to Frontier with nearly a decade of experience in requirements gathering and documentation, project management, and client communication.

Education/Certifications/Training

Master of Business Administration, Computer Information Systems, Texas State University, San Marcos, TX

B.A., Economics, Certificate of Business Foundations with Distinction, University of Texas, Austin, TX

Concentration: Computer Science, Austin Community College, Austin, TX

Frontier Energy Experience

2013 to present

- Responsible for capture, analysis, and documentation of business requirements and translation into system functionality.
- Interact with client and project team members during all phase of system development.
- Coordinate with the development team and customers to ensure on-time project completion.
- Interact with engineering staff to ensure that savings calculations in EnerTrek® software division products match the calculations appearing in TRMs and other technical documents.

- Maintain updated applications documentation and training materials.
- Coordinate and lead end-user trainings.
- Assist in preparation of testing strategy and test plans; guide users acceptance testing.
- Support testing to ensure issues are identified and solution matches requirements.
- Contribute to marketing of software products.
- Perform help desk functions supporting all software users.
- Administer Deemed Savings Engine accessibility, performance, and accuracy.
- Assist in program implementation.
- Analyze program performance and measure-specific changes and communicate impact to stakeholders.
- Coordinate with consulting and engineering teams on business development opportunities.
- Serve as EnerTrek point of contact for coordination with evaluation, measurement, and verification teams.
- Assist in EnerTrek administrative review and implementation of protocols and procedures changes.

Amy Martin

Vice President

Profile

Amy Martin is a utility regulatory policy professional with a thorough understanding of energy efficiency program evaluation, measurement, and verification **(**EM&V**)** and cost-effectiveness. She brings more than 15 years of experience calculating energy efficiency program and portfolio savings impacts and assessing the costs and benefits of various Demand Side Management (DSM) measures. At Frontier, Amy provides leadership and oversight for consulting and engineering staff for a wide array of regulatory, program design, deemed savings development, implementation, and EM&V projects.

Amy has built a reputation for diligence and integrity through her extensive regulatory consulting work, preparing annual energy efficiency plans and reports and providing expert witness testimony in support of utility DSM filings. She works closely with utilities, regulatory commissions, statewide evaluators, utility management and legal counsel, and other stakeholders. She presents at utility commission hearings and workshops and serves as stakeholder consensus-builder for statewide cost-saving initiatives.

Education/Certifications/Training

Master of Public Affairs, LBJ School of Public Affairs, The University of Texas at Austin
Bachelor of Science in Biology, The University of Texas at Austin – emphasis in Ecology/Evolution/Behavior

Frontier Energy Experience

2008 to present

- EM&V of Save for Tomorrow Energy Plan (STEP) Energy Efficiency Portfolios, CPS Energy, 2015 to present.
- EM&V of CPS Energy Vendor Energy Efficiency and Demand Response Program Implementation, CPS Energy, 2017 to present.
- EM&V of High Performance New Construction and Residential New Construction Energy Efficiency Portfolios, Independent Electricity System Operator (IESO), formerly Ontario Power Authority (OPA), 2013 to 2016.
- Statewide Deemed Savings Development for Texas Technical Reference Manual (TRM), Public Utility Commission of Texas (PUCT) and Electric Utility Marketing Managers of Texas (EUMMOT), 2014 to present.
- Pre-TRM Statewide Deemed Savings Development for Texas Investor-Owned Utilities, PUCT and EUMMOT, 2009 to 2014.

- Amy served as stakeholder consensus-builder for statewide collaborative efforts related to deemed savings proposals and presented results at EUMMOT planning meetings and at public meetings for the PUCT.
- Energy Efficiency Program Design & Plan Filing, El Paso Electric New Mexico (EPE NM), 2009 to present.
- Statewide Deemed Savings Development for Arkansas TRM, Arkansas Public Service Commission (PSC) and Arkansas Parties Working Collaboratively (PWC), 2011 to 2016.

General Activities & Other Experience

- Provide oversight on a variety of projects, including cost-effectiveness analyses, evaluation, measurement and verification (EM&V) activities, and energy and water efficiency program planning and design.
- Support all ten investor-owned electric utilities in Texas, analyzing potential impacts of legislation, assisting with regulatory filings, coordinating meetings and workshops, and collaborating with the Public Utility Commission of Texas and the statewide EM&V evaluator. Responsible for ongoing enhancements to Frontier's Cost-Effectiveness Calculator tool, and experienced in using DSManager.
- Previously led a five-year bi-annual evaluation estimating the energy savings and demand reduction resulting from an educational behavioral program designed to encourage conservation at a grassroots level. Other notable contributions include assisting in the preparation and development of the Texas Renewable Energy Resource Assessment statewide potential study sponsored by SECO, and evaluating the EUMMOT statewide CFL program.

Karl Dyke

Program Manager

Profile

Karl Dyke graduated with a Master's degree in Economics from Texas A&M University, where his core studies focused on financial econometrics, statistics, forecasting, emerging technologies, and philosophy. He has experience analyzing commodity markets and complex economic systems and utilizes his enthusiasm for analytics to assist with cost-efficiency calculations and deemed savings development. Karl's technical skillset includes fluency in the R, Python, and SAS statistical programming languages, various Business Intelligence tools, and advanced work in Microsoft Excel. He uses these skills to accomplish a wide variety of analytical tasks ranging from data engineering and visualization to providing inference based on statistics and economic theory.

Education/Certifications/Training

M.S., Economics, Texas A&M University (Concentration in Financial Econometrics)
B.S., Agricultural Economics, Texas A&M University (Concentration in Rural Entrepreneurship and Minor in Philosophy)

Frontier Energy Experience

April 2019 to present

- For multiple Texas, Louisiana, and New Mexico clients, assessed energy efficiency plans' cost-effectiveness and provided forecasted estimates of future energy/demand savings, modeled incentive payments, and various summary ratios.
- Yearly, summarized and standardized multiple years' worth of results from each Investor-Owned Utility and continued to provide the Electric Utility Marketing Managers of Texas' (EUMMOT) with their yearly report.
- Assisted with general ad-hoc analysis of various utilities' incentive rate structures.
- Successfully coded and investigated a non-linear programming optimization function which maximized bonus and reduced lost revenue for a Texas utility.
- Assisted with the data engineering for a large-scale "consumption analysis," which evaluated the effectiveness of residential energy efficiency efforts for the City of San Antonio, Texas, using highly granular electricity load data from AMI meters.
- Yearly, assisted with the development of energy efficiency and demand response deemed savings and engineering algorithms for Texas' Technical Reference Manual (TRM).

- Worked with the Texas Steel Mill Coalition in analyzing the effect of a shift in the Operating Reserve Demand Curve (ORDC) and assisted with research on how the Real-Time Co-optimization (RTC) effort by ERCOT will affect the energy efficiency landscape.

Prior Experience

Independent Contractor, Crude Oil Market, February 2019 – August 2019

- Computed econometric time series models (e.g., ARIMA) using Python 3.7 in a command-line environment.
- Converted time series to supervised learning input for new forecasting approaches based on machine learning techniques.
- Incorporated qualitative insight garnered from market environment into forecasting methods for extra explanatory power.

Graduate Teaching Assistant, Department of Agricultural Economics, College Station, TX, August 2016 – May 2017

- Instructed 40-155 students on the intricacies involved in the formulation of a small business plan and encouraged the development of innovative solutions to counter analytical, organizational, and intuitive problems faced in such endeavors.
- Collaborated with various mentors on the improvement of small business feasibility analysis.
- Evaluated students' performance in a capstone course, assigned grades, and provided feedback.

Trade & Business Development Inter, Texas Department of Agriculture, Austin, TX, June 2015 – August 2015

- Consolidated agricultural market data fluctuations into a standardized format to inform 6,000+ industry professionals of the daily market environment.
- Investigated new techniques for the development of a local market news price reporting methodology.
- Instructed a new full-time employee on the techniques necessary for success in presumed position.

Lucy Zhu

Program Manager/Statistical Analyst

Profile

Since joining Frontier in 2013, Lucy Zhu has excelled in organizing, analyzing, and interpreting complex data, especially large-scale interval recorded data. She uses statistical models to analyze the impact of various energy efficiency and pricing programs on energy usage; designs experiments to analyze the impacts of various pricing programs or technologies on energy or water consumption behavior; and provides assistance on projects related to energy efficiency, electric demand response, and energy economics.

Lucy is adept in statistics programming software such as R, SAS, SQL, and STATA. She is familiar with various statistical methods such as ANOVA, logistic regression, panel data regression analysis, time series, sample selection, principal component analysis (PCA), structural equation modeling (SEM), Bayes' theorem and data mining. Lucy is also experienced in experimental design such as sample determination and randomized controlled trial (RCT).

Education/Certifications/Training

M.S., Statistics, The University of Texas at Austin
B.A., Economics, Fudan University, Shanghai, China
Currently: Part Time Graduate Student in Power Electronics and Power Systems Track,
Electrical and Computer Engineering Department, The University of Texas at Austin
Society of Actuaries Exam P (Probability) – Passed with highest possible score

Frontier Energy Experience

Evaluation, Measurement, and Verification (EM&V) of Save for Tomorrow Energy Plan (STEP) Demand Response Portfolios, CPS Energy, 2015 to present

- Lead EM&V analysis on demand response programs portfolio.
    - Perform savings analysis on demand response events for residential EV managed charging program, residential smart thermostats, bring-your-own thermostats (BYOT), behavioral demand response, and commercial load management using statistical models and AMI data.
- Perform savings analysis on residential EV rebate program starting 2021.
- Communicate with clients on their needs and saving goals.
- Develop workplans for demand response program evaluations including sample size determination and stratification, experimental design with current available resources, and timeline planning.
- Conduct benefit cost analysis on demand response programs and provide recommendations for clients.

AEP Texas Electric Vehicle Charger Research & Development Project, 2021 to present

- Market research, sample design, and EM&V design
    - Perform comprehensive market research for EVs within AEP Texas area.
    - Design stratified representative EV samples based on budget, geographical distribution, and EV type.
    - Help design data monitoring approaches and evaluation methodologies based on available data and timeframe.
- Data monitoring and analysis
    - Periodically monitoring participants' charging behavior based on high definition interval charging data.
    - Make behavior adjustment recommendations based on collected data.
    - Statistical analysis to identify or quantify possible savings for level 2 vs level 1 charging.

Residential and Small Commercial Demand Response Pilot Program, El Paso Electric Company, 2017 – 2019

- Led estimating of deemed savings including sample size determination and stratification, data collection and cleaning, interval recorded data analysis with regression.

Identification of Peak Period Impacts for Texas Technical Reference Manual (TRM), Public Utility Commission of Texas (PUCT) and Electric Utility Marketing Managers of Texas (EUMMOT), 2013 – 2016

- Helped identify peak hours for different TRM zones using logistic regression. The peak hours identified served as one of the base assumptions for various energy efficiency programs deemed savings estimate.

Analyze Load Reduction Impacts for Wind and Peak Time Pricing - A DOE-funded Pecan Street project, 2013 – 2015

- Used panel data analysis and difference-in-difference (DID) model to quantify participants' savings with low pricing during wind period (nighttime) and high pricing during summer peak afternoons.

ERCOT Retail Demand Response and Dynamic Pricing Project, 2013 – 2014

- Helped quantify ERCOT system-wide savings for price spike period using regression analysis and baseline analysis.

Nick Campbell

Senior Program Coordinator/Direct Install Lead

Profile

Nick Campbell has led hundreds of direct install projects since joining Frontier Energy in late 2016. His team of installers specializes in delivering energy-efficient solutions to customers on behalf of large electric and natural gas utilities. Nick's expertise extends beyond direct installs of resource-saving items such as LED replacement lights, low-flow shower heads, and water-saving faucet aerators. A college degree in game design and development and professional experience in website production and graphic design make him a natural at using computer technology to collect, analyze, track, and verify data collected at project sites. Through Nick's leadership, more than 20,000 data points have been collected on direct install activities and energy analyses at multifamily buildings served by Xcel Energy and CenterPoint Energy, a number continues to grow, with data for each project benchmarked and tracked using sophisticated software.

Education/Certifications/Training

Bachelor of Science in Game Design and Development, Brown College, Mendota Heights, Minnesota

Frontier Energy Experience

Direct Install Technician/Lead, October 2016 to Present

- Led more than 450 direct install projects, overseeing teams of direct install technicians.
- Interact with customers on site, answering questions about energy efficiency upgrades.
- Set proper expectations with customers about what is offered through the joint Xcel Energy and CenterPoint Energy Multi-Family Building Efficiency program and Center Point Energy's Natural Gas Energy Analysis program.
- Assisted in the creation of iForm data collection survey tool for direct install activities.
- Oversee quality assurance for all installations, managing equipment inventory and shipments and ensuring accurate counts of installed equipment.
- Created customer satisfaction surveys in GreenRope (survey software).
- Set up new clients and projects and verify data inputs into program tracking software.
- Benchmark historical energy consumption for multifamily buildings.
- Validate meter information for each multifamily building (especially verifying master vs. individually metered buildings).
- Perform QA/QC for new software tracking tools.
- Enter energy savings measures from direct installs into Salesforce and reconcile with Energy Insight records.

- Perform data collection—over 20,000 data points collected on direct install activity and energy analysis of multifamily buildings.
- Has participated in energy audits for ~30 multifamily buildings.

Prior Experience

Inventory Specialist, Best Buy, Eden Prairie, MN, February – June 2016

- Unloaded trucks and delivered products to sales floor; organized and cleaned warehouse; greeted and assisted customers; helped with security.

Freelance Graphic Designer, DWDurkee, LLC, Eden Prairie, MN, June – October 2016

- Recreated characters and designed new, unique characters for Comic Strip Factory™.

Freelance Graphic and Web Designer, Night Fox, LLC, Minneapolis, MN, September 2015 – June 2016

- Created company logo and designed business cards.

Web Production Assistant, Avallo Web Development, Maple Grove, MN, February – June 2015

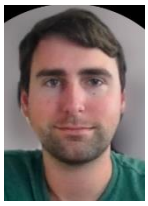
- Coded in HTML and CSS to create websites for clients; created website icons using Adobe Illustrator; edited pictures in Adobe Photoshop.

QA Tester, Activision, Eden Prairie, MN, April – November 2014

- Documented bugs for Call of Duty©: Advanced Warfare; regressed bugs to see if they were still present; helped new testers document bugs; led team to test multiplayer bugs.

Adam Groenhuyzen, P.E.

Senior Engineer



Profile

A recent hire by Frontier, Adam Groenhuyzen brings over 8 years in the energy profession, with experience that encompasses leading and providing technical support for third-party programs for the commercial sector, including CPS's Commercial Energy Efficiency Programs and RXcLite offering. He has led independent evaluations of energy project submissions, as well as liaising with program evaluators, defending program claims, and improving savings calculations methodologies. Adam has created and maintained energy savings calculation tools, and performed field data logging and energy analysis and calculations for non-deemed energy projects.

Education/Certifications/Professional Associations

Master of Engineering in Mechanical Engineering, Texas A&M University, College Station, TX
B.S., Mechanical Engineering, Texas A&M University, College Station, TX
Professional Engineer, Texas Board of Professional Engineers (PE# 150831)
Certified Measurement & Verification Professional, Association of Energy Engineer

Frontier Energy Experience

August 2024

- Engineering and implementation support for projects.

Prior Experience

Energy Engineer III, CLEAResult Consulting, March 2021 – July 2024

- Served as project lead for the CPS Energy RCxLite offering in San Antonio. Acted as a technical expert, bringing the RCxLite measure within parity of benchmark programs across the company.
- Led relationships with third-party program evaluators, defending program claims and improving savings calculation methodologies.
- Member of the M&V Review Committee, providing peer review for others' M&V projects. Performed various Measurement & Verification activities within this capacity.
- Recognized as Subject Matter Expert within several committees/SME groups across the engineering team, including HVAC Tune-Up program, Evaluation committee, Calculator/Tool Development group, & Deemed Team.
- Engineering lead for measure template design & review as part of a major project tracking platform migration.

Energy Engineer II, June 2016 – March 2021

- Provided primary technical support for CLEAResult's contract as the third-party implementor of CPS Energy's Commercial Energy Efficiency Programs. Utilized in state and national programs due to established expertise.
- Led independent evaluations of energy efficiency project submissions for calculation accuracy and sufficient documentation as industry leader.
- Created and maintained several Excel-based energy savings calculation tools for various technologies, inclusive of lighting and HVAC.
- Performed field data logging and subsequent analysis and calculation for non-deemed energy projects.

Engineering Technician, Part-Time, Lackey de Carvajal Cx, May 2016 – April 2017

- Assisted with building commissioning efforts.
- Performed an energy use benchmark assessment for Bexar County facilities.

Student Technician, Texas A&M Industrial Assessment Center, June 2012 – December 2015

- Reviewed and analyzed processes and facilities of 29 mid-sized manufacturing plants within Texas.
- Identified and quantified energy savings opportunities for facilities in comprehensive reports.
- Led assessment surveys, served as point of contact between IAC and host facilities, and compiled assessment reports containing recommendations for process improvement.
- Cumulative recommended savings of $3,199,451 and cumulative implemented savings of $1,580,600.

Manufacturing Technology Engineer, Intern DuPont – Packaging & Industrial Polymers Division, May 2013 – August 2013

- Provided mechanical engineering support at Sabine River Works ethylene copolymer autoclave facility.
- Worked within large manufacturing facility, learning about the management of change process, and communicating projects and ideas with the various business units at the facility.
- Directed projects including pump analysis, life-cycle analysis of specialty valves, and large capital projects.

Melissa Culbertson

Associate Vice President, EcoMetric Consulting

melissa@ecometricconsulting.com
512.633.1490

EDUCATION

December 2010
BBA, Economics
Texas State University, TX

EXPERIENCE

EcoMetric
Associate VP
2024 to present

ADM Associates
Senior Director
2016 to 2024

CLEAResult Consulting
Senior Manager
2008 to 2016

STAKEHOLDER GROUPS

EEWG with the LPSC

Parties Working Collaboratively in Arkansas

New Orleans City Council Stakeholder Advisory Group

NREL & DOE WAP Multifamily Housing SME Committee

Cascade Conservation Advisory Group

Regional Technical Forum

PROFESSIONAL TESTIMONY

"In the Matter of the Application for Approval of SWEPCO's Initial Energy Efficiency Program Docket No 07-082-TF Direct Testimony (2020 & 2021)

"Approval of OG&E's Demand Program Plan." [PUD 201500247] OG&E, Oklahoma OCC. (2015)

BIO

Melissa brings over 15 years of extensive expertise across diverse energy sectors, ranging from efficiency to electrification to demand response. Her multifaceted experience encompasses market research, baseline, saturation and code compliance studies - along with portfolio and program evaluations, strategic plan development, program design, and hands-on implementation. She has spearheaded field verification studies, conducted comprehensive assessments of technical and economic potential, and advised on pioneering policies with stakeholders. Melissa has led impact, process, market, and cost-effectiveness evaluations, and has filed testimony for both electric and natural gas portfolios.

Melissa has worked with many of the utility partners in Louisiana and has been a part of the planning, implementation and evaluation of the programs since 2014 starting with her contributions to the first triennial Plans and implementation efforts. Starting in 2016, Melissa became an evaluator in the state. Melissa's experience spans across the Cleco, AEP SWEPCO, Entergy Gulf State, Entergy Louisiana, Entergy New Orleans, Atmos and CenterPoint Energy service areas.

RELEVANT PROJECTS

AEP SWEPCO Louisiana and Arkansas

Annual Portfolio Evaluation (2016 to 2024)
Quick Start Triennial DSM Plan (2014)

Melissa directed the ADM evaluation of the ENERGY STAR® award-winning portfolios in both Arkansas and Louisiana, which include electric vehicles, induction cooking and other electrification measures, low-income weatherization, and demand response programs. Also includes the annual Arkansas TRM update, an annual portfolio evaluation, retail shelving study, LIHEAP and arrearage analysis, residential new construction and small commercial economic and market research studies, incentive benchmarking study, as well as successfully operating within an active evaluation oversight committee.

Cleco Louisiana

Annual Portfolio Evaluation (2016 to 2024)
20 Year Potential Study (2015)
Quick Start Triennial DSM Plan (2014)

Melissa has worked with Cleco since 2014 while on the CLEAResult implementation team, collaborating on the development of the first Quick Start Plan. After transitioning to an evaluation role in 2016, Melissa directed the portfolio evaluation until 2024.

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"Atmos Energy to Establish the EECR Rate." [Docket 2010-AD-2] Atmos Energy, Mississippi PSC. (2014)

"In the Matter of the Application for Approval of SWEPCO's Initial EE Program Plan." [Docket 07-082-TF] SWEPCO, Arkansas PSC. (2014 & 2015)

Panels & Presentations

Co-Presenter on the AESP Training, "Best Practices in Virtual Evaluation." (2021)

Speaker at the AESP Annual Panel, "If it doesn't make dollars, it doesn't make sense: Making sense of cost effectiveness analysis." (2020)

Panelist at the IEPEC panel, "Don't Just Sit There: Start Making your Data Insights Actionable!" (2019)

Co-Presenter on AESP webinar, "Minding the Gap: Keeping Track of Program Recommendations." (2019)

Panelist at AESP Summer Conference, "Like a "Robo-Suit," can Auto-M&V tools and methods augment traditional EM&V?" (2018)

Speaker in AESP Annual Session, "Gas Efficiency Programs – What does it take to pass cost-effectiveness tests." (2016)

Panelist at IEPEC, "EM&V 2.0: The Future of Evaluation." (2015)

Speaker at ACEEE Summer Study, "Turning today's data into tomorrow's reality." (2014)

Entergy Gulf State and Entergy Louisiana

Annual Portfolio Evaluation (2016 to 2024)

Melissa directed the ADM cost-effectiveness evaluations of the ELL and EGSL portfolios.

Atmos Energy in Louisiana

Annual Portfolio Evaluation (2022 to 2024)

Melissa directed the ADM evaluation of the Atmos Energy portfolio in 2022. This evaluation included impact, process and cost-effectiveness evaluations.

Entergy New Orleans

Energy Smart Evaluations (2016 to 2024)
Commercial New Construction Code Compliance Study (2023)
Residential Appliance Saturation Study (2022)
Arrearages Study (2020)
Retail Lighting Shelving Study (2019)

At ADM, Melissa managed the Energy Smart evaluations, including EE, battery, electric vehicle, low income/residential weatherization and demand response programs. Also includes the New Orleans TRM update process; an annual impact, process and cost-effectiveness evaluation; leading the design of focus groups with market actors; special studies on residential appliance saturation and commercial code compliance; as well as participation in an engaged regulatory stakeholder group.

Oklahoma Gas & Electric Arkansas and Oklahoma

Annual Portfolio Evaluation (2017 to 2024)
Oklahoma Energy Efficiency and Demand Response Plan (2015)

Melissa has worked with OG&E since 2015 while on the CLEAResult implementation team, collaborating on the development of their filed EE and DR Plan. In 2017, Melissa began co-directing the ADM evaluations in both Oklahoma and Arkansas while at ADM, which continued until 2024. These evaluations involved an engagement regulatory group in both states.

Duke Energy

Five-Year Five-State Potential Studies (2013)

Melissa led the CLEAResult measure-specific potential studies across five service territories for Duke Energy. The studies included the estimation of energy and demand savings, adoption curves, incentive projections and incremental cost contributions, and attribution across five years. The studies included equipment for data centers, dry type transformers and other energy efficiency measures. Also, a data center market research study was performed to identify non-traditional data centers, such as for nonprofits, in their territories. These studies included engineering reviews, market research, field studies, billing analysis and in-depth interviews for cost data.

Mike Frischmann

Executive Vice President, EcoMetric Consulting

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608.799.8266

Licenses

Professional Engineer
Mechanical Engineering
Minnesota

EDUCATION

June 2009
MS Mechanical Engineering
University of Wisconsin - Madison

December 2007
BS Mechanical Engineering
University of Wisconsin - Madison

EXPERIENCE

EcoMetric
Executive VP
2018 to present

Michaels Energy
Director – Evaluation & Research
2009 - 2018

STAKEHOLDER GROUPS

Parties Working Collaboratively in Arkansas

Illinois Stakeholder Advisory Group

Michigan Energy Optimization Collaborative

BIO

Michael Frischmann is Executive Vice President at EcoMetric Consulting. Mike is constantly seeking continuous improvement initiatives that accelerate utility economics and deliver value to utility end-users. He has 15 years of experience in the energy industry providing expertise on technologies, programs, and policies for demand side resources. Mike's expertise spans multiple facets of the energy efficiency industry including engineering, data collection & research design, program evaluation & implementation, measure characterization, and data analytics. He enjoys looking for innovative ways to leverage technology and advancements in data science to further improve the reach, accuracy and cost effectiveness of program evaluations. Mike holds BS and MS degrees in Mechanical Engineering and is a registered Professional Engineer in Minnesota.

RELEVANT PROJECTS

Arkansas Independent Evaluation Monitor

Annual Portfolio Evaluation (2012-2018)

Mike was one of the impact evaluation subject matter experts, and engineering lead for the Independent Evaluation Monitor team in Arkansas. Over the six years in this role, he led the oversight of impact evaluations conducted by the utility evaluation contractors, ensuring they met the Arkansas TRM protocols, and were consistent with industry best practices. Mike was also the lead engineer and project manager for the annual Arkansas TRM update, where he facilitated feedback from all interested stakeholders in the Parties Working Collaboratively (PWC) and was the project manager ensuring that TRM updates were done on time. He also led the annual presentation of the TRM to the PWC and worked with other IEM team members to garner consensus on the TRM updates.

New Mexico Utility Evaluations

Annual Portfolio Evaluation (2018 to Present)

Mike currently serves as the executive in charge, and principal investigator for the comprehensive evaluations of the New Mexico electric and gas utility energy efficiency and demand response programs in New Mexico. In total, EcoMetric and their subcontractors complete six total evaluations from three natural gas and three electric utilities. Mike is the current main point of contact for the Public Regulatory Commission Staff, presenting regular updates and facilitating overviews of evaluation activities, answering questions about evaluation results, and executing Staff's requests within each evaluation. Over the six years on this project, Mike has led individual impact evaluations for all utilities, designed the

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cost effectiveness tools and processes, and has led the bi-annual TRM update process in New Mexico, ensuring that utility requests are met and the TRM remains a strong resource for all New Mexico utilities.

Illinois Utility Evaluations

Portfolio Evaluations for ComEd, Nicor Gas, Peoples Gas and North Shore Gas (2009 - Present)

Mike is one of the key staff members conducting impact evaluations for ComEd's, Nicor Gas', Peoples Gas', and Northshore Gas' residential, commercial, and industrial programs in Illinois. He has touched on all aspects of the evaluation process over this time, from site visits and data collection, engineering analysis, process evaluation, net-to-gross research, cost effectiveness, and economic impacts. Currently, Mike is leading the impact evaluations for many of the largest programs in the state, including prescriptive, product distribution, multifamily, and energy efficiency kits. Additionally, Mike is leading the investigations into numerous emerging technologies, such as all-electric homes, ultra-high-efficiency commercial HVAC, small business energy management, and automated system optimizations. He is also providing subject matter expertise on market spillover, and market transformation program designs, savings methodologies, and natural market baseline development. Finally, Mike is a critical part of the annual Illinois TRM update process, providing measure reviews, conducting measure update research, and engaging with the statewide technical advisory group on measure comments.

Pennsylvania Statewide Evaluator

Utility Evaluation Oversight (2018 - 2021)

Mike led EcoMetric's role on the PPUC Statewide Evaluation team to verify the energy savings and peak demand reduction claims made by seven large electric distribution companies (EDC) for the Act 129 DSM portfolio. He worked directly with each EDC's evaluators to ensure their activities were consistent with the TRM and standing PUC guidance. Mike also led updating the PA Technical Reference Manual for Phase IV, providing guidance to EcoMetric and other evaluation team members on TRM characterizations and strategies. He was a significant contributor to the Phase IV market potential study by leading the market potential analysis for combined heat and power projects across the state.

Xcel Energy Portfolio Evaluation

Colorado and Minnesota Portfolio Evaluations (2022-Present)

Mike is the overall executive-in-charge of EcoMetric's work evaluating Xcel Energy's portfolio of programs in Colorado and Minnesota. He is responsible for overseeing and executing program evaluations which exceed Xcel Energy's expectations and meet the necessary regulatory requirements for EM&V of the portfolio. Program evaluations range in complexity, and include gross impact, net savings research, process evaluation, and examining underrepresented voices in both state territories. Mike was key in launching and building a solid foundational relationship between EcoMetric and Xcel Energy staff and ensuring that EcoMetric's ongoing activities are delivered in a cost effective and timely manner.

Jenna Bagnall

Senior Managing Consultant, EcoMetric Consulting

Jenna@ecometricconsulting.com
774-563-2035

EDUCATION

May 2011
BS, Applied Economics
Colorado State University

December 2013
MS, Agricultural & Applied Economics
University of Wyoming

EXPERIENCE

EcoMetric
Senior Consultant
2024 to present

Encolor Consulting
Director
2023 to 2024

TRC
Senior Consultant
2019 to 2023

Panels & Presentations

Trust Based Energy Services – Building a VPP Marketplace (panelist), AESP Summer Conference, August 2023. Indianapolis, ID.

"Midstream Gas Sasquatch – Elusive or Illusive?", International Energy Program Evaluation Conference (IEPEC), January 2022. San Diego, CA.

Lessons Learned from Swimming Upstream, panel presenter, 2021 Midwest Energy Solutions Conference, February 2021 (virtual). MEEA Panel on Midstream Program Evaluation

'The Great Migration: Moving Energy Efficiency

BIO

Jenna Bagnall recently joined as a subject matter expert on Process and Market Research. Jenna has spent more than 10 years evaluating energy efficiency programs across all sectors including resource acquisition and market transformation programs, portfolio level design, and cost-effectiveness screening. She brings a deep understanding of the challenges and barriers faced in both researching and implementing programs, as well as experience with evaluation of non-energy related benefits through various qualitative and mixed-method approaches. Formerly a Director of Research and Strategy with Encolor Consulting, she has supported strategic planning initiatives and the development of evaluation and research methods to better understand and develop programs to serve the historically underserved populations, such as rural and low-income individuals, across the country.

RELEVANT PROJECTS

PSE&G in New Jersey

Commercial and Industrial Net-to-Gross Evaluation

EcoMetric is part of the team evaluating PSE&G's portfolio of residential and commercial programs on an annual basis. Jenna is supporting EcoMetric's role in the process evaluations for the C&I Prescriptive program, which includes downstream and midstream components. The process evaluation work includes surveys and net-to-gross analyses for selected programs.

Paducah Power Supply in Kentucky

EV Readiness Plan

As project lead, Jenna performed an Equity Assessment for Paducah Power System that compared regional transportation electrification programs based on equity and inclusion metrics. This assessment provided key inputs and recommendations for how the installation of electric vehicle chargers can be leveraged to enhance the economic and wellbeing of all residents in Paducah.

NV Energy in Nevada

Portfolio Planning & Process Evaluation

Encolor Consulting supported NV Energy through their 2023 Stakeholder Engagement and Portfolio Planning Process. She oversaw all primary research activities that were leveraged to support the DEI, Product Development, and Federal Funding Working Groups. Her research included conducting focus groups with small businesses and community-based organizations in the Southern and Northern regions of Nevada.

ECOMETRIC

Programs to Midstream," International Energy Program Evaluation Conference (IEPEC), August 2019. Denver, CO.

"Double Ratio Estimation: Friend or Foe?," International Energy Program Evaluation Conference, August 2017. Baltimore, MD.

"Market Survey of Natural Gas Heating and Water Heating Supply Houses and Installers," October 2017. Prepared for National Grid New York.

Consumers Energy in Michigan

Commercial and Industrial Sector Evaluation

Jenna was responsible for management of process and market research evaluations for Consumers Energy. She was also a significant contributor to research, planning and design of the Consumers Energy EWR portfolio. Her responsibilities included management of multiple evaluation and research projects, including budget management and directing internal and contract staff to ensure delivery of high- quality products and services.

Xcel Energy in New Mexico, Colorado and Minnesota

Net Attribution and Process Evaluations

Jenna is responsible for management of process evaluations for Xcel Energy including the most recent research to support the identification and evaluation of the Underrepresented Voices. She was also a significant contributor to research, planning and design. Her responsibilities included management and delivery of the research, including budget management and directing internal and contract staff to ensure delivery of high- quality products and services.

Southern California Edison in California

California Statewide Wants and Needs Study

As project lead, Jenna was responsible for management and execution of the Commercial & Industrial Wants and Needs Study for the four California Investor-Owned Utilities (IOUs) including, Southern California Edison (SCE), Pacific Gas & Electric (PG&E), San Diego Gas & Electric (SDG&E), and SoCal Gas. For this study, Jenna executed a series of in-depth interviews, and surveys, with business customers to investigate the energy wants and needs throughout the State of California. This research was funded through all four IOUs to better understand how programs were maybe missing the needs of their customers.

Glenn Gavi

Senior Managing Consultant, EcoMetric Consulting

glenn@ecometricconsulting.com

EDUCATION

August 2024
PostGrad, Data Science
CalTech
Pasadena, CA

November 2017
ME, Renewable Energy and Energy Efficiency
University Rey Juan Carlos
Madrid, Spain

July 2016
MS, Mechanical Engineer
RIT
Rochester, NY

May 2012
BS, Civil Engineer
NM Tech
Socorro, NM

EXPERIENCE

EcoMetric
Senior Managing Consultant
2024 to present

DNV
Senior Consultant
2016 to 2024

Verogy
Business Analyst
2018 to 2018

Panels & Presentations

Poster Presenter at the ACEEE Summer Conference, "Pipe Insulation Evaluation Best Practices." (2023)

Publications

Co-Author, "A Comparison of Motivational and Informational Contexts for Improving Eco-Driving Performance",

BIO

Glenn Gavi is an accomplished Energy Engineer and Data Scientist with a deep commitment to optimizing energy systems and driving value for utility providers and their customers. With over 10 years of experience in the energy sector, Glenn has honed his expertise in data-driven analysis, custom metering, and energy efficiency program evaluation. His work spans MA, CA, and several other regions and territories. Evaluation of energy-saving programs experience includes gross and NTG evaluation, whole building or localized energy metering, advanced statistical modeling, demand response evaluation, and the integration of emerging technology evaluation to enhance program effectiveness. Glenn is passionate about utilizing data science to uncover innovative solutions that improve energy efficiency, reduce costs, and maximize program impact. He holds an M.S. in Mechanical Engineering and a Postgraduate degree in Data Science, and he has a proven track record of leading cross-functional teams to deliver high impact results.

RELEVANT PROJECTS

CPUC Group D Portfolio- California

Custom Programs Evaluation (2022 to 2024)

As a core member of the portfolio management team for the California Public Utilities Commission (CPUC) Group D Custom Program evaluation, he provided strategic oversight and management of the Group D contract with DNV. The role encompassed administration of complex custom program evaluations, including Commercial Industrial and Agricultural Custom (CIAC), Normalized Metered Energy Consumption (NMEC), and Strategic Energy Management (SEM) initiatives, with a focus on rigorous gross and net-to-gross impact assessments. He was instrumental in directing the Ex-Ante Custom Project Review (CPR) evaluations, ensuring full compliance with regulatory standards and the delivery of precise, actionable insights. Technical responsibilities included leading continuous improvement initiatives for the CPR process, optimizing data transfer protocols and data ingest processes in collaboration with CEDARs data leads, and supporting CPUC supervisors and managers in refining the overall portfolio strategy to align with Group D evaluation objectives.

New Mexico Public Regulation Commission

Evaluation of IOU's Electric and Gas Programs (2024 to present)

Glenn is the Portfolio Manager of EcoMetric's work as part of the team evaluating more than 40 efficiency and load management programs in New Mexico covering residential, commercial, and industrial customers. He oversees the data cleaning and intake of energy efficiency tracking data and site-specific consumption/API data. The evaluation also includes a critical assessment of the current New Mexico TRM, individual program and measure level cost-effectiveness, demand response

ECOMETRIC

Transportation Research Part F: Psychology and Behavior (2017)

Co-Author, "Assessing the Seismic Preparedness of NM, New Mexico Department of Homeland Security and Emergency Mitigation" (2010)

Certifications

Python Programming, Advanced SQL Queries, Python for Data Science – Udemy, Pluralsight, IBM (2020 – 2024)

Languages

English (Native)

Spanish (Fluent)

program evaluation, net-to-gross research, and providing policy and national evaluation guidance to the New Mexico utilities and PRC.

MA EEAC and MA PAs Ad Hoc Research & RI Custom Electric and Gas Evaluation

Project Evaluation (2016 - 2021)

As Project Manager for Massachusetts' and Rhode Island's Custom Electric and Custom Gas Energy Efficiency program evaluations, Glenn led comprehensive evaluation services aimed at delivering tri-annual gross savings realization rates through an annual rolling sampling approach. In his role as a senior engineer, Glenn provided critical oversight and expertise in reviewing site evaluation EM&V plans and ensuring the overall quality of site evaluations. He was instrumental in maintaining project consistency, delivering results on schedule, and managing all aspects of client engagement to ensure the highest level of service and satisfaction. Completed additional ad hoc efforts for studying measure technologies and creating energy savings calculators for statewide use.

Connecticut EEB Statewide Program Evaluation

Evaluation of IOU's Outreach, Market Penetration, and Equity Analysis (2018 to 2020)

Project Manager for CT's Energy Efficiency program reach and effectiveness from technology and equity positions geographically across the State of CT. Primary responsibilities included data ETL for program data from 2017-2020 and integration with demographic data for households based on census block groups. Results provided targeting capabilities for implementation teams to comply with market penetration and equity regulatory responsibilities.

ECOMETRIC

Kyle McKenna

Senior Managing Consultant, EcoMetric Consulting

kyle@ecometricconsulting.com
319.855.8406

EDUCATION

May 2013
MEng, Mechanical Engineering
Iowa State University
Ames, IA

May 2011
BA, Engineering Science
Wartburg College
Waverly, IA

EXPERIENCE

EcoMetric
Senior Managing Consultant
2018 to present

Michaels Energy
Energy Evaluation Engineer
2013 to 2018

PRESENTATIONS

Speaker at the AESP Annual Session, "It's Easy AM-I Right?" (2020)

BIO

Kyle McKenna is a dynamic Managing Consultant at EcoMetric Consulting, where he specializes in commercial evaluations. With over seven years of engineering experience, Kyle has led impact evaluations for a diverse range of programs. He has worked extensively on a wide variety of commercial sector projects, from office buildings and retail spaces to manufacturing facilities and large-scale industrial operations. His expertise spans complex energy system analysis, whole-building energy simulations, and in-depth data analysis. Kyle's technical acumen extends to reviewing, updating, and maintaining comprehensive technical reference manuals, as well as developing and optimizing program tracking systems through advanced programming and coding. Proficient in data analytics with Python, he is adept at transforming large, complex datasets into actionable insights that drive measurable results.

RELEVANT PROJECTS

Public Service Electric and Gas Company in New Jersey

Annual Program Evaluations (2021 to Present)

EcoMetric is part of the team evaluating Public Service Electric and Gas Company (PSE&G) portfolio of residential and commercial programs on an annual basis. Kyle manages the impact and process evaluations of the Prescriptive (downstream and midstream) program. Kyle manages the day-to-day activities for the evaluation that includes desk reviews, site inspections, metering, and customer surveys. EcoMetric also conducts ad hoc research studies that focus on customer segmentation, metering studies, and C&I weatherization measure characterization, which include drafting measures to be included in the New Jersey CEF2 TRM.

New Mexico Public Regulation Commission

Annual Evaluation of Statewide Programs (2018 to Present)

At EcoMetric, Kyle McKenna manages a team evaluating over 40 energy efficiency and load management programs in New Mexico, verifying electric and natural gas savings across residential and commercial sectors. As project manager, he ensures timely completion of objectives while maintaining quality standards. Kyle is the main point of contact for utility clients, providing updates, managing expectations, and addressing needs. He also leads the drafting of evaluation reports, translating complex data into clear, actionable insights for an active group of stakeholders.

ECOMETRIC

Commonwealth Edison Company

Annual Impact Evaluations (2018 to Present)

Kyle plays a key management role in the impact evaluation of the Commonwealth Edison Company (ComEd) Large C&I and multifamily programs. He oversees the evaluation process, ensuring data accuracy by reviewing implementer workpapers and managing onsite Measurement & Verification (M&V) for projects in the C&I Prescriptive program. His responsibilities include conducting project file reviews, coordinating site visits, deploying meters, and supervising energy savings calculations.

Kyle has led evaluations for some of ComEd's largest energy users, including auto manufacturers, skyscrapers, and chemical plants. He delivers detailed site-specific reports, ensuring compliance with PJM forward capacity market guidelines for peak demand savings. His thorough approach to data analysis and impact evaluation helps drive both operational efficiency and cost savings for clients.

Department of Natural Resources and Environmental Control of Delaware

Annual Portfolio Evaluation (2018 to 2021)

Kyle served as the Project Manager for the ongoing evaluation of the Department of Natural Resources and Environmental Control (DNREC) portfolio of programs, focusing on verifying electric and gas savings across the residential and commercial sectors. This evaluation included a detailed assessment of energy impacts and program delivery, as well as quantifying non-energy benefits from DNREC's residential income-qualified Weatherization Assistance Program. Kyle managed all evaluation tasks and maintained regular communication with DNREC staff. He collaborated closely with DNREC to develop workplans, present findings, and attend EEAC and EM&V subcommittee meetings. Under his leadership, the EcoMetric team completed over 200 engineering desk reviews, analyzed billing data from more than 600 residential customers, and conducted interviews with 250 participants to ensure accurate savings verification.

F.6 WORK PRODUCT—ACEEE PAPER ON ENERGY BURDEN

Tetra Tech coauthored an abstract on energy burden metrics (*Another Step Forward: Continuing to Build Energy Resiliency Informed by Customer Electric Burden*) with Entergy Arkansas, LLC, for ACEEE's 2024 conference. The abstract was accepted at the highest level.

For the electronic version of our proposal submittal, the document is titled *Work Product Sample_Tetra Tech_Energy Burden_ACEEE.pdf*. The sample included in the hard copy proposals is embedded within the appendix.

APPENDIX G: SAMPLE EM&V PLAN DOCUMENTATION (RESPONSE TO QUESTION C3)

Due to file size constraints for the electronic submittal, the Tetra Tech team has opted to provide sample EM&V plan documentation as separate files. Samples included in the hard copy proposals are embedded within the appendices. The table below outlines the client and EM&V firm, the selected report, and the file name used for our electronic submittal. We have also chosen to provide a link to the electronic reports, if available.

Table 3. Sample EM&V Plan Documentation—The Tetra Tech Team

Client and EM&V firm	Report	File name for electronic submittal
Public Utility Commission of Texas (PUCT) Tetra Tech	Evaluation, Measurement, and Verification Plans for Texas Utilities' Energy Efficiency Portfolios—2023 **Online link(s):** EM&V Plan **Note: The link above routes to a zip file with filings for EEIP review. The file titled "Appendix_PY2023 Evaluation Plan_final.pdf" is the most recent EM&V Plan that Tetra Tech developed for the PUCT.*	*EM&V Plan Documentation Sample_Tetra Tech_PUCT_PY2023.pdf*
Entergy Arkansas, LLC (EAL) Tetra Tech	Evaluation, Measurement, and Verification Plans for Entergy Arkansas, LLC—Program Years 2020−2023, Bridge Program Year 2023 Update **Online link(s):** N/A, not publicly available	*EM&V Plan Documentation Sample_Tetra Tech_EAL_BY2023.pdf*

APPENDIX H: SAMPLE ANNUAL REPORTING (RESPONSE TO QUESTION C4)

Due to file size constraints for the electronic submittal, the Tetra Tech team has opted to provide sample annual reports as separate files. Samples included in the hard copy proposals are embedded within the appendices. The table below outlines the client and EM&V firm, the selected report, and the file name used for our electronic submittal. We have also chosen to provide a link to the electronic reports, if available.

Table 4. Sample Annual Reports—The Tetra Tech Team

Client and EM&V firm	Report	File name for electronic submittal
Public Utility Commission of Texas (PUCT) Tetra Tech	Volume 1. Investor-Owned Utilities (IOUs) Energy Efficiency Report Program Year 2023—DRAFT Volume 2. ERCOT Utility-Specific Energy Efficiency Report Program Year 2023—DRAFT Volume 3. Outside-of-ERCOT Utility-Specific Energy Efficiency Report Program Year 2023—DRAFT **Online link(s):** The PY2023 annual report drafts are available on the Public Utility Commission of Texas Interchange Filing site[9]. Final reports will be filed under Project #38578[10] the week of November 18, 2024. Reports for prior program years are available on the Texas Efficiency website[11].	*Annual Report Sample_Tetra Tech_PUCT_Volume 1_PY2023.pdf* *Annual Report Sample_Tetra Tech_PUCT_Volume 2_PY2023.pdf* *Annual Report Sample_Tetra Tech_PUCT_Volume 3_PY2023.pdf*
CPS Energy (CPS) Frontier Energy	Evaluation, Measurement, and Verification of CPS Energy's FY 2024 DSM Portfolio **Online link(s):** • FY2024 STEP Annual Evaluation, Measurement, and Verification Report[12] Additional reports are available on CPS Energy's website[13].	*Annual Report Sample_Frontier Energy_CPS_FY2024.pdf*

[9] https://interchange.puc.texas.gov/search/documents/?controlNumber=38578&itemNumber=136
[10] https://interchange.puc.texas.gov/search/filings/?UtilityType=A&ControlNumber=38578&ItemMatch=Equal&DocumentType=ALL&SortOrder=Ascending
[11] https://texasefficiency.com/emv-docs/
[12] https://www.cpsenergy.com/content/dam/corporate/en/Documents/FY2024-STEP-Evaluation-Report.pdf
[13] https://www.cpsenergy.com/en/about-us/programs-services/sustainable-tomorrow-energy-plan.html

APPENDIX I: SAMPLE MARKET POTENTIAL/MARKET RESEARCH STUDIES (RESPONSE TO QUESTION C5)

Due to file size constraints for the electronic submittal, the Tetra Tech team has opted to provide sample market potential/market research studies as separate files. Samples included in the hard copy proposals are embedded within the appendices. The table below outlines the client and EM&V firm, the selected report, and the file name used for our electronic submittal. We have also chosen to provide a link to the electronic reports, if available.

Table 5. Sample Market Potential/Market Research Studies—The Tetra Tech Team

Client and EM&V firm	Report	File name for electronic submittal
NV Energy Tetra Tech	DSM Market Potential Study **Online link(s):** NV Energy DSM Market Potential Study[14] **Note: The link above routes to the full report. Tetra Tech's DSM Market Potential Study appears on pages 124-217 of 346. Tetra Tech has included only this excerpt for the hard copy versions of the proposal.*	*Market Potential Study Sample_Tetra Tech_NV Energy_Pages 124-217.pdf*
California Energy Commission Frontier Energy	Demonstration of High-Efficiency Commercial Cooking Equipment and Kitchen Ventilation Systems **Online link(s):** CEC-500-2021-021[15]	*Market Research Example_Frontier Energy_CEC_2021.pdf*

[14] https://www.nvenergy.com/publish/content/dam/nvenergy/brochures_arch/about-nvenergy/rates-regulatory/recent-regulatory-filings/nve/irp/2021-irp-filings/NVE-21-06-IRP-VOL11.pdf.
[15] https://www.energy.ca.gov/sites/default/files/2021-05/CEC-500-2021-021.pdf.