Opinion Dynamics

LOUISIANA PUBLIC SERVICE COMMISSION

EVALUATION, MEASUREMENT, AND VERIFICATION CONTRACTOR

11/20/24

Opinion Dynamics

Boston | Headquarters
130 Turner St, Building 3, Suite 520, Waltham, MA 02453
617.492.1400 tel | 800.966.1254 toll free

November 19, 2024

Kimberly N. O'Brian
Kathryn H. Bowman
Louisiana Public Service Commission
602 North Fifth Street (Galves Building)
Baton Rouge, Louisiana 70821

Dear Ms. O'Brian and Ms. Bowman,

Opinion Dynamics, together with our partner, GDS Associates, appreciates the opportunity to provide our proposal and qualifications to serve as the EM&V contractor to perform evaluation, measurement, and verification of the Commission's new statewide Energy Efficiency Program. Our team brings several unique qualifications that make us ideally suited to lead this effort:

SINGULAR FOCUS ON PORTFOLIO COST EFFICIENCY AND PERFORMANCE: Opinion Dynamics is pleased to see that the top priority of the Commission is to minimize administrative costs associated with the statewide energy efficiency program while maximizing ratepayer benefits. We urge the Commission to consider the value of strategic investment in evaluation conceived to optimize cost-efficiency at the portfolio level -- least-cost and largely summative approaches rarely produce the results and context required to achieve the Commission's stated goal. Opinion Dynamics offers a value-oriented approach to portfolio evaluation designed to satisfy regulatory requirements while also providing the insight and perspective required by program administrators to maximize operational efficiency while delivering the highest possible energy savings and participant satisfaction for every ratepayer dollar invested. Beyond basic quantification and reporting of program impacts and costs, we analyze and scrutinize energy savings by measure, customer segment, program, and other relevant dimensions to identify improvements in program measure mix and customer targeting efforts across the portfolio. Similarly, our process evaluations focus on program design, evaluability, and operations to identify elements of program delivery that are performing well and those that fail to produce expected outcomes, allowing program administrators to redirect resources and focus away from underperforming strategies to those with higher potential. While we anticipate ours is not the lowest cost proposal submitted for this project, we are certain any incremental expense associated with Opinion Dynamics' approach will pay dividends in the form of greater performance and cost-effectiveness at the portfolio level,

UNPARALLELED EXPERIENCE IN PORTFOLIO EVALUATION: Opinion Dynamics is a national leader in energy efficiency program evaluation and currently leads several portfolio evaluations of similar size and scope as is requested here for utilities and Commissions across the country. In recent years we have served as the EM&V consultant for Ameren Illinois and the Illinois Corporate Commission, Ameren Missouri, California Public Utilities Commission, Dominion Energy South Carolina, Duke Energy, PSEG Long Island, and Portland General Electric, among others. Given our extensive experience evaluating energy efficiency programs for clients across the country, we are well-versed in the best-practice evaluation methods for any program design that may be included in the Louisiana statewide portfolio and ideally suited to plan and execute evaluations with the ideal balance of analytic rigor and cost efficiency.

TRM DEVELOPMENT AND POTENTIAL STUDY EXPERTISE: TRM development and maintenance and market potential studies are frequently core elements of the energy efficiency portfolio evaluations we conduct. Opinion Dynamics, and our partner GDS Associates, have extensive experience leading efforts to develop, evaluate, adapt, and maintain current Technical Reference Manuals (TRM) for clients in jurisdictions across the country, and both firms are well-versed in the specifics of

the Arkansas TRM. GDS is one of the leading providers of market potential studies in the country and has completed numerous multi-jurisdictional or statewide studies. GDS understands unique characteristics of the geography, climate and regulatory landscape in and around Louisiana, as GDS is completing a statewide study in Arkansas on behalf of the Arkansas PSC and recently completed a market potential for the City of New Orleans. GDS provides open and transparent models to clients so that they can review the study outcomes and details behind them.

EXCEPTIONAL PROJECT MANAGEMENT: We understand that effective project management and seamless collaboration with clients, program administrators, and regulatory stakeholders are critical to the delivery of cost-efficient, transparent, and actionable program evaluation. Opinion Dynamics has developed, tested, and refined a management structure centralized enough to allow for streamlined and timely communication, ensure consistency of approaches and deliverables, and avoid uncoordinated and "siloed" efforts yet flexible enough to allow for customization and prompt accommodation of shifting needs and priorities.

Once again, we appreciate this opportunity to present our qualifications and look forward to partnering with the Commission on this important effort. Our proposal is valid for 180 days.

Sincerely,

Brad Kates, CEO
Opinion Dynamics
130 Turner St., Suite 520, Waltham, MA 02453
Tel: 617-301-4635 | Email: bkates@opiniondynamics.com

CONTENTS

PROPOSAL INTRODUCTION

Opinion Dynamics Corporation is a nationally recognized energy evaluation and consulting firm specializing in the evaluation, measurement, and verification (EM&V) of energy efficiency and demand response programs, market research, and energy advisory services. Founded in 1987, Opinion Dynamics is headquartered in Waltham, Massachusetts, with other key offices in Northern and Southern California and Portland, Oregon. We are a multidisciplinary organization serving clients in the energy industry with dedicated general consulting services, data analytics, data management, engineering, and market research teams. Our team of more than 70 energy professionals includes experienced engineers, evaluation project managers, data scientists, statisticians, social scientists, survey methodologists, and sampling experts. We offer impressive depth and breadth of subject matter expertise, technical capability, and the insight gleaned from leading portfolio evaluations for clients across the country coupled with exceptional project management. We are a national leader in evaluating portfolios of energy efficiency programs.

Multi-year portfolio evaluations comprise approximately 75% of our work annually, and we have strategically built an interdisciplinary team of evaluation and project management experts to deliver the exact scope of work outlined in this RFP. We function as an integrated matrixed organization, with teams developed around key technical functions being leveraged by and collaborating with project management teams. We find this structure ideal for managing large-scale, complex, multidisciplinary projects, such as energy program portfolio evaluations, while realizing economies of scale and offering cost efficiencies. Our structure ensures ready access to appropriate subject matter expertise and analytic tools for each M&V task and each analytic choice. We seek collaboration and partnership with our clients, leveraging our extensive experience evaluating EE programs around the country, to design and execute cost-efficient well-documented and transparent evaluations that align with our clients' priorities, timelines, and budgets.

Founded in 1986, **GDS Associates, Inc. ("GDS")** is a multi-service engineering/consulting firm headquartered in Marietta, Georgia, with offices in Auburn, AL; Augusta, ME; Manchester, NH; Austin, TX; Madison, WI; Redmond, WA; and Camarillo, CA. Over the last 38 years, GDS has grown to a 180+ person consulting firm that serves clients across the United States. GDS provides engineering and consulting services to electric utility clients across the country, covering a broad range of services in the areas of power supply planning, load forecasting and statistical services, wholesale and retail rates, cost of service, transmission planning, access and pricing, demand-side management, generation development and monitoring, financial consulting, and many others.

GDS' consulting staff has extensive engineering, rate, regulatory, compliance, and expert testimony experience. GDS consultants are recognized leaders in their fields, dedicated to their clients, and innovative in their approach to delivering quality consulting services that satisfy client needs. Our energy efficiency group is comprised of specialists who assist clients with the complexities of multi-faceted energy efficiency and demand response program planning, program implementation, and evaluation. GDS has completed over 100 energy efficiency and demand response potential studies, administered and implemented energy efficiency programs in multiple states, and conducted program impact and process evaluations for many utility and government clients. GDS' long history of meeting client needs has established our reputation within the industry. In fact, most of our project assignments are derived from repeat work for existing clients or from client referrals. GDS recognizes that no two clients or problems are exactly alike, so we strive to deliver "right-fit" solutions for each client's situation.

A. OVERALL APPROACH TO THE TRANSITION OF NEW STATEWIDE EE PROGRAM

Question A1. Vision for Program/Strategic EM&V Plan

Our overall vision is to provide the Commission with cost-effective, high-quality, insightful EM&V services, that not only meet regulatory EM&V requirements but also support the Commission's stated goals of providing energy efficiency programs that offer the most dollar-for-dollar benefits to Louisiana customers while ensuring transparency and accountability. Key to our vision is to support the *long-term* success of the new EE Program and its ability to cost-effectively maximize customer energy savings and satisfaction from program launch. While minimizing evaluation spending in the early plan years might reduce *short-term* administrative costs nominally, we believe that investing in sound early evaluation will provide the information needed to ensure continuous program improvement and maximum *long-term* benefits with lower total costs at the portfolio level.

Our vision is based on experience, and several key elements: (1) Early and continued cooperation, coordination, and communication with the Commission, the utilities, the Program Administrator, and the Energy Efficiency Work Group (EEWG) to ensure transparency, a common understanding of evaluation objectives, and consideration of various perspectives. (2) Careful EM&V planning that prioritizes evaluation activities and spending based on criteria such as subprogram/measure contribution to overall savings, uncertainty in savings estimates, information gaps, and Stakeholder priorities. (3) Strong project management that ensures execution of the EM&V plan on time and on budget with an eye constantly trained on building efficiencies across evaluation and administration functions. (4) Adaptability to adjust planned EM&V activities, with Commission/stakeholder approval, based on changes to program design or implementation, market conditions, evaluation findings, etc.

Transitioning an established portfolio to new implementation and/or EM&V contractors can be a challenging task that requires careful planning and coordination to ensure minimal disruption to customers, market actors, program administrators, and utilities. In the case of EM&V services for the new statewide Energy Efficiency Program (EE Program), however, we see less of a need for a true "transition" but rather a task that involves careful coordination, communication, and planning to establish a solid foundation for cost-effective and insightful evaluations: While we do expect to coordinate with the contractor(s) that have conducted evaluations for the Quick Start Programs – ensuring that any relevant data, approaches, and insights can be leveraged and known pitfalls avoided– we do not expect much of that prior evaluation work to be directly relevant given (1) the shift to a statewide program with potentially significant changes to program design and implementation, (2) the shift in program oversight from individual utilities to the Commission, and (3) a new Program Administrator who will likely introduce new measures, systems, and procedures to meet savings goals. As such, we expect the main emphasis of the transition period to be on (a) documenting program designs and delivery strategies and determining associated EM&V data needs and availability to inform evaluation planning and ensure that the new program is evaluable; (b) developing a common understanding of evaluation goals and priorities, culminating in the first 4-year evaluation plan; (c) setting up EM&V processes and procedures that will ensure that we can hit the ground running at the start of PY2026; and (d) conducting early explorations with respect to the TRM and Market Potential Study tasks.

Our significant experience conducting portfolio evaluations nationwide equips the Opinion Dynamics Team with a valuable perspective for this effort. We have engaged in numerous utility stakeholder processes, advised on regulatory changes, developed evaluation frameworks, and helped utilities adopt new programs and technologies, collaborating with program partners and stakeholders. We are excited to help the Commission make the new EE Program a success.

Question A2. Key Performance Indicators (KPIs)

We expect to use the following leading and lagging EM&V KPIs to help identify potential evaluation threats and assess the performance of our team (including our subcontractor GDS). These may be updated, based on the final evaluation

scope. Note that we always leverage project initiation activities and communications to ensure there is alignment on evaluation priorities and performance requirements among the evaluation team, the client, and all relevant stakeholders before finalizing EM&V plans.

Leading KPIs our team has used in the past center around adherence to evaluation budgets and timelines as well as early indicators of primary data collection outcomes. They include: (1) the percentage of task budget spent relative to the percentage of task completion; (2) the percentage of task completion relative to task milestone due dates; and (3) the number of completed survey responses (or response rates) following survey soft launch. Tracking these leading indicators will allow us to quickly course-correct, should we detect a threat to evaluation outcomes. This could include identifying reasons for higher-than-expected spending and potential adjustment of EM&V approaches or redeployment of staff; deploying more staff or re-prioritizing staff time to meet critical deadlines; and/or increasing survey sample sizes or adjusting outreach methods to increase survey participation.

We expect to use similar **lagging KPIs** to assess our team's performance and inform potential adjustments to evaluation plans, EM&V approaches, or internal processes for the next plan year. Examples include: (1) the percentage of task budgets spent; (2) the number (or percentage) of key milestones completed on schedule; (3) the number of survey responses and survey response rates compared to targets (by subpopulation, if applicable); and (4) the number of completed desk reviews and site visits compared to target (by subpopulation, if applicable).

Question A3. EM&V Deliverables and Checkpoints

We expect the following key EM&V deliverables during the transition year:

Transition Plan: The Transition Plan will outline all evaluation and project management activities to be conducted during the transition year, including task budgets and timelines.

PY2026-29 EM&V Plan: The 4-year EM&V Plan will include our planned ex post gross impact and process evaluation activities as well as our approaches to exploring the development of a new Louisiana-specific TRM and conducting the Market Potential Study. The plan will include task budgets and key dates and, where applicable, sampling approaches and sample sizes for data collection/research activities. Per the planning process outlined in the RFP, the first 4-year EM&V plan "shall be filed with the Commission by May 1, prior to the start of each budget cycle." We note that this deadline might be challenging given the expected contractor selection and contract finalization dates of March and April 2025, respectively. If May 1, 2025, is a firm due date, we will meet that schedule but note that subsequent plan updates will be more likely as some of the activities that inform the planning process may not be completed until after May 1, depending on the contract execution date.

Program-Tracking Data Review Memo: A key activity we expect to conduct during the transition year is a careful review of program/measure data that the Program Administrator plans to collect. This review will ensure that key data needed to carry out EM&V activities will be collected and available to our team. Opinion Dynamics will work to embed our evaluation efforts within program delivery to the greatest possible extent, leveraging program implementation activities to support evaluation functions where feasible, eliminating duplicative data collection, and maximizing the efficiency of the evaluation effort.

Data Needs Memo: During the transition year, we will also identify and document data needs from the utilities, the Commission, and the Program Administrator in a Data Needs Memo, which will include a high-level description of expected data requests and the approximate timing of those requests.

We expect the following key EM&V deliverables during the first 4-year program budget cycle:

Updated Annual EM&V Plans: By June 1 of each plan year, we will provide updated Annual EM&V Plans to the Commission. We understand that the Commission expects revisions to the original 4-year plan to be minimal. We note, however, that periodic plan reviews and updates in response to early findings are an important element of providing relevant and actionable EM&V and ensuring the best use of EM&V budgets. This is especially true for new programs that might be modified in response to early lessons learned and EM&V feedback. We will provide our rationale for any proposed changes and will work with the Commission to balance the benefits of updates against the desire for minimal revisions.

Annual EM&V Reports: By April 1, after the end of each plan year, we will file our Annual EM&V Report. Report contents will conform with the Phase II Rules and will include, at a minimum, a summary of the EE Program; a description of EM&M methods utilized; verified savings, costs, and cost-effectiveness; process findings; and recommendations for improvement.

Interim EM&V Deliverables: In addition to plans and annual reports, we expect to provide interim deliverables such as survey instruments, sampling plans, and onsite visit protocols to the Commission for review and approval. The EM&V Plan will document these interim deliverables and their timing.

TRM Planning Memo / TRM: After the conclusion of the PY1 evaluation, we will provide a memo that outlines our recommendations concerning developing a Louisiana-specific TRM versus continued reliance on the Arkansas TRM. This timing will allow us to determine high-impact measures and assess how well the Arkansas TRM reflects installed measure performance for the Louisiana statewide program and the benefits and costs of developing a Louisiana-specific TRM. If, based on our assessment, the development of a Louisiana-specific TRM is recommended and subsequently approved by the Commission, we will deliver such a TRM by the end of the first budget cycle – to the extent possible, in time for use in the Market Potential Study.

Market Potential Study: During the first 4-year cycle, our team will conduct a statewide Market Potential Study to determine potentially achievable energy savings. We plan to complete this study in 2028 so that results can be used in the planning for the next 4-year cycle.

Other Studies: Per the RFP, we expect to conduct other analyses and studies, as identified by the Commission, and have included a budget allowance for such studies.

We expect the following key checkpoints during the transition year and the first 4-year cycle:

Checkpoints: In other, similar engagements, we have found that either weekly or bi-weekly status calls with the client (i.e., the Commission) work well to ensure an efficient exchange of information. The frequency will depend on the Commission's preferences and will likely vary over the course of the transition year and 4-year cycle, with more frequent checkpoints early in the engagement and during periods of increased evaluation activity. In addition, we will schedule ad hoc checkpoints, as needed. Early in the transition year and towards the end of each plan year, we will also request meetings with the Program Administrator to obtain information needed for EM&V planning and to inform our annual report. These meetings will be critical in the early stages of the transition year as the Program Administrator finalizes the program design – our budget assumes close collaboration during these crucial planning and plan adjustment periods. Finally, we will participate in meetings with the EEWG, either in person or remotely, at the frequency established by the group. For budgeting purposes, we assume quarterly meetings throughout the five-year cycle, with additional ad hoc meetings to support discussion of specific topics or studies such as the TRM and the Market Potential Study.

Question A4. Data/Information/Interaction Needed from Utilities and Commission Staff

Timely receipt of data will be crucial to the success of our evaluation efforts. Opinion Dynamics has established and documented workflows to facilitate the process of identifying, defining, and sharing data elements required to support the evaluation effort. We will leverage these workflows, refined based on our extensive experience collaborating with utilities, commissions, and program administrators across the country, as the foundation for our work in Louisiana. While most of the needed data/information will come from the Program Administrator (see also response to Question A5), we expect to require some key inputs from the utilities and the Commission: The most likely data/information needed from the utilities to support our EM&V activities is customer data such as name, address, rate, contact information, and monthly or hourly consumption/billing data. This data would support consumption analyses to estimate program savings (and other analyses that rely on participant consumption data) and/or research activities that involve non-program participants. In addition, we will need a series of inputs for the annual cost-effectiveness analysis and for the Market Potential Study, including avoided costs, discount rates, load forecasts, and historical achievements. Expected data needed from the Commission include savings targets by relevant subpopulations (e.g., utility, district, renters, low-income customers, sector, sub-program) as well as any relevant information on regulatory schedules and requirements not already available in the Phase II rules or articulated at project initiation. We will document anticipated data needs, at a high level, in the Data Needs Memo to be developed during the transition year and will provide detailed data requests throughout the 5-year cycle.

Equally important, we will rely on the Commission for direction and guidance and the timely review, feedback, and approval of deliverables to ensure that our EM&V and other study tasks remain on schedule. We expect frequent interaction with the Commission, as outlined in the discussion of checkpoints in our response to Question A3, but only limited direct engagement with the utilities once protocols and schedules for data sharing are established and documented.

Question A5. Data/Information/Interaction Needed from the Administrator

We see early and periodic interaction with the Program Administrator as vital to the success of our EM&V efforts, for several reasons:

- With the EM&V Plan due very soon after contract award, we will need to quickly understand details about the new EE Program and its design, implementation, expected high-impact measures, etc. A comprehensive understanding of the measures and programs we will be evaluating will be key to developing an EM&V Plan that most cost-effectively uses evaluation budgets to measure achieved savings and support the success of the program.
- During the transition period and towards the end of each plan year, we will meet with the Administrator to (1) review preliminary EM&V results and understand implementation challenges and successes from their point of view, which will inform our annual report; and (2) planned changes to program design and implementation, which will inform (along with EM&V results) potential EM&V Plan updates.
- In our experience, evaluations are most successful, and evaluation findings and recommendations are most useful and actionable, when the Evaluator and the Program Administrator have open lines of communication and when the Administrator has a good understanding of the Evaluator's approaches and objectives. Our work is most effective when the Administrator realizes that we share the same overall goal – making the energy efficiency programs as successful and cost-effective as possible – and views feedback as collaborative input intended to help improve the programs rather than as a judgment or criticism of their actions. As such, we envision regular interactions with the Administrator to foster collaboration throughout the plan cycle.

In terms of data, we expect key needs to include (1) All available program design and implementation materials: These might include procedures and operating manuals, marketing/outreach plans, training and educational materials,

customer-facing materials, program theory/logic models as well as program budgets and savings, participation, and other goals, as applicable. We will request these immediately upon contract award (to inform our 4-year EM&V Plan) and any updates or new materials throughout the plan cycle. (2) Program tracking data: At the conclusion of each plan year, we will request full tracking data for the EE Program to support our impact analyses and annual EM&V report. In addition, we expect to request preliminary data for select subprograms to support EM&V activities such as surveys, in-depth interviews, and sampling for desk reviews or on-site visits. In many similar engagements, we request a mid-year data extract to provide early insights on program activity and key measures and to inform any in our planned EM&V activities that might be warranted.

We will work with Program Administrator on the cadence of data delivery, balancing the benefits of more frequent views into program progress and potential early feedback with the additional burden this might place on the Administrator. In the case of multiple different program implementation contractors, we assume that the Program Administrator will be responsible for aggregating the necessary data for program evaluation from their individual partners and will thus serve as our sole contact and source of all program participation data.

Question A6. References

References are included in the table below. Appendix D provides more in-depth information on the highlighted projects as well as additional qualifications.

Table 1. References

Client Contact Information	Project Information
Dominion South Carolina	
Sheryl Shelton Manager, Demand Side Management/Energy Conservation sheryl.shelton@dominionenergy.com (803) 217-9918	Opinion Dynamics has been conducting annual process, impact, and market evaluations for Dominion Energy South Carolina's (DESC) electric and gas DSM programs since 2010. The portfolio includes energy efficiency and demand-response programs.
Duke Energy	
Duke Energy Lead Analyst, DSM & Retail Programs jean.williams@duke-energy.com (919) 546-6847	Opinion Dynamics is one of Duke Energy's evaluation partners, tasked with the evaluation of several residential and non-residential energy efficiency and demand response programs throughout the utility's service territory (including Duke Energy Carolinas and Duke Energy Progress).
Vermont Department of Public Service	
Brian Cotterrill Energy Efficiency Program Specialist Brian.cotterill@vermont.gov (802) 828-3212	The Vermont Department of Public Service retained GDS to conduct an updated assessment of the cost-effective achievable potential for electric and natural gas energy efficiency and conservation resources for each of the Energy Efficiency Utilities (EEUs) in Vermont. GDS has performed this work for the DPS for several planning cycles since 2007.

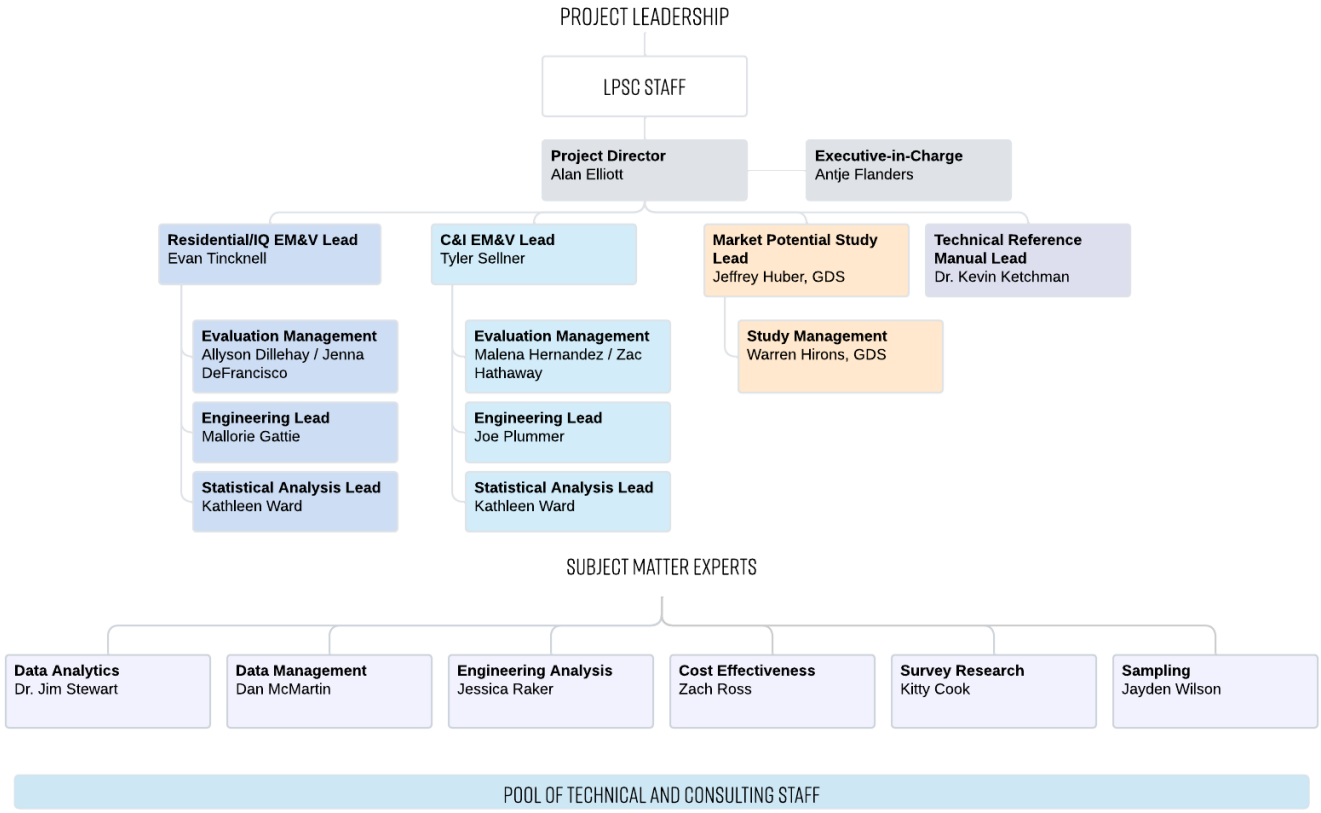
Question A7. Personnel Roles and Responsibilities

The organizational chart below summarizes how we will organize and staff the evaluation team for this engagement. In our work evaluating large program portfolios for clients throughout the country, we have found this organizational structure most effective at ensuring accountability and responsibility. By providing a single point of contact and accountability via the Project Director, we ensure streamlined and effective communication about expectations between the evaluation team and the Commission and within the evaluation team as we carry out work throughout the evaluation cycle. In addition, the Residential and Commercial and Industrial (C&I) sector leads ensure management-level responsibility for successful project execution through implementation of Opinion Dynamics' core project

management practices. Opinion Dynamics has clearly documented project roles and responsibilities, as well as defined project management processes and tools (project charters, project management software, etc.) to ensure our teams stay on track and aligned with the budget, proactively identify risks to the project, and effectively communicate up to senior decision-makers with ultimate accountability for successful project completion.

In addition to addressing accountability and responsibility, we have carefully crafted the proposed team to ensure critical evaluation expertise, a balanced mix of resources, and dedicated and highly qualified evaluation managers with experience working on similar program types, all supported by a team of subject matter experts, cross-cutting resources, and an extensive pool of consulting staff. We provide resumes for the key staff in Appendix E.

Figure 1. Organizational Chart



Question A8. Team Competencies

Our team brings unparalleled experience in energy efficiency portfolio evaluations across the country. Opinion Dynamics has served as the prime evaluation contractor for portfolios for a variety of clients, including Ameren Illinois, Ameren Missouri, California Public Utilities Commission, Dominion Energy South Carolina, Duke Energy, PSEG Long Island, and Portland General Electric, among others. GDS has completed over 100 energy efficiency and demand response potential studies, administered and implemented energy efficiency programs in multiple states, and conducted program impact and process evaluations for many utility and government clients. Combined, we can draw on over 250 experienced energy professionals to provide the suite of services outlined in the RFP and any studies identified in the future.

Opinion Dynamics' philosophy, reflected in our full-service staff, is to integrate process and impact insights to uncover and deliver not only what outcomes occurred that are attributable to programmatic activities, but also the context around *why outcomes occurred* and *how to make needed improvements*. Having successfully led numerous portfolio

evaluations of comparable size and complexity requiring engagement with multiple stakeholders and coordination with program administrators, we understand the importance of exceptional project management. Opinion Dynamics has developed, tested, and refined a management structure centralized enough to allow for streamlined and timely communication, ensure consistency and uniformity of approaches and deliverables, and avoid uncoordinated and "siloed" efforts yet flexible enough to allow for customization and prompt accommodation of shifting needs and priorities.

We understand the complexities, resources, and effort required to transition EE program administration and evaluation services to new vendors and different organizational structures (e.g., utility level vs statewide). Our team brings deep qualifications in helping program administrators, sponsoring utilities, and regulators establish and expand energy efficiency programs through actionable advisory and evaluation services. We have extensive experience working with clients to stand up and integrate new program delivery and evaluation functions, define data requirements, and establish efficient protocols for communications and data capture, management, and exchange in support of cost-efficient execution of both functions. The clients who work with Opinion Dynamics know that our value is in helping them to launch and scale programs tailored to local needs and market conditions—that is why we have so many long-term clients.

Question A9. Ability to Meet Standard Insurance Requirements

Please see Appendix B.

Question A10. Financial Qualifications

Opinion Dynamics is a privately held corporation. Confidential financial statements are provided as a separate email.

B. DEMONSTRATION OF QUALIFICATIONS

Below, we provide responses to the qualifications-related questions in the RFP. Please refer to Appendix D for additional in-depth information on our team's qualifications.

Question B1. Organizational Skills

Opinion Dynamics specializes in leading large-scale portfolio evaluations that require project leadership to efficiently manage large teams and direct the efforts of numerous subcontractors, engage multiple diverse stakeholders, and integrate the findings from multiple research efforts to provide answers and insights for our clients. We understand the importance of establishing a management structure that is centralized enough to allow for streamlined and timely communication, ensure consistency and quality of approaches and deliverables, leverage every integration opportunity for cost-efficiency, and glean insights from trends and findings across research activities, yet flexible enough to allow for customization and prompt accommodation of shifting needs and priorities. Through our experience and understanding, we have developed, tested, and refined our project governance model to address these very specific needs. Opinion Dynamics' reputation for responsive, flexible, and outstanding project management is proof of its success.

As part of our EM&V work, we most often work with individual project and overall program data tracked and provided by the Program Administrator. We leverage project-level data for a number of EM&V activities, most often sample-based efforts such as participant surveys (where we might read in data from the program tracking database) or C&I impact evaluations (where we conduct project-specific analyses such as desk reviews and onsite visits). The resulting project-level information is then carefully extrapolated back to the overall program population to reflect our sampling strategies. Based on our long history of evaluation services, we have developed a suite of tools and organizational approaches that will allow us to cost-effectively carry out activities such as sampling and extrapolation, and track project data obtained to support our analyses.

Question B2. Data Analytics

We will be gathering and evaluating numerous data streams as part of our evaluation, ranging from program-tracking data and project- and program-level ex ante savings to survey data, consumption data, and data underlying cost-effectiveness analyses and the market potential study. As such, there are a variety of analytics that we might develop to assess the success or failure of particular aspects of the EE Program. Two key examples are impact analysis and survey analysis:

- All of our **impact evaluations** involve data analysis to determine the success of the program under evaluation. Our dedicated engineering and data analytics teams have many years of experience with the various accepted impact evaluation approaches, ranging from engineering analysis to desk reviews and on-site visits to consumption analysis and modeling. The most appropriate method will depend on factors such as the type of measure under analysis (prescriptive versus non-prescriptive), the level of expected savings, the number of participants with a particular measure or enduse, required evaluation rigor, and available budgets. Key outputs of these analyses are project-level or average per-participant savings as well as realization rates, which are a common measure of the program's success in realizing the tracked savings.
- Participant and market actor **surveys** often explore the experience and satisfaction of those touched by the program with program components such as application processes, program measures, program communications, program delivery staff, outreach and educational materials, and incentive levels. Responses to such survey questions are often used to develop measures of success/failure, when compared to Program Administrator goals. Opinion Dynamics originated as a market research firm and, as noted in our response to Question B6, continues to bring unparalleled experience in primary data collection and the associated analysis of the collected data streams. Our dedicated survey and qualitative research teams provide their expertise

throughout the entire process, from instrument design to fielding, coding, and data analysis. While anybody can write and field a survey, the quality of the results will only be as good as the data collected.

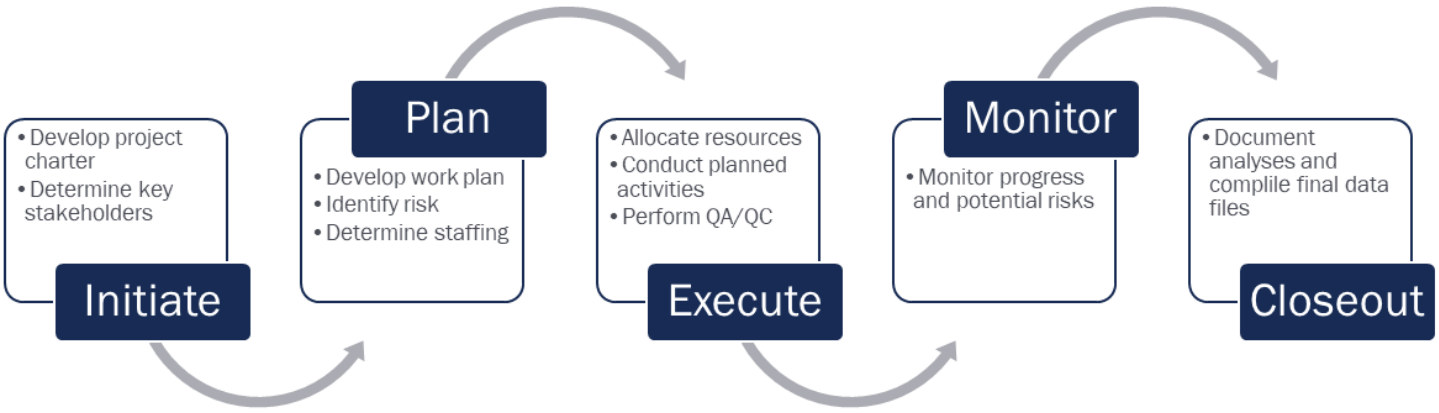
Our in-depth qualifications provided in Appendix D provide more details about our experience conducting impact analysis and primary research in support of program evaluations.

Question B3. Operating Procedures to Support Project Management

In all our work, we deliver strong project management, attention to detail, innovative methodological approaches, and a clear focus on client needs. Our project management teams leverage internal tools to track and control project resources, status, budget, deliverables, and schedules. We customize these tools for each client engagement and tailor them to provide reports at the desired level of granularity (e.g., project task, sub-program, subcontractor, etc.). We use these tools to produce inputs to internal and external project status reports with linkages to the Opinion Dynamics labor and budget accounting system (Unanet).

Opinion Dynamics' project management process is based on five core project phases, which structure how our project management teams rigorously plan, execute, and monitor each project to ensure successful completion. As shown in Figure 2, each phase is defined by a set of activities overseen by the project leadership and communicated to key stakeholders.

Figure 2. Opinion Dynamics' Project Management Process



Underlying the project management process are the company's formally articulated rules of engagement, which represent procedures that outline project roles and responsibilities, as well as how staff work together across our matrixed organization. This includes:

- Clearly defined project roles and responsibilities.
- A framework for transparently and consistently documenting project staffing (i.e., project charters).
- Processes such as Resource Planning, Project Planning, and Labor Allocation that translate staffing plans into assignments.
- Communication protocols and norms to support ongoing engagement and active collaboration across all members of the project team.

To support the company's management staff, we have aligned training with this structure, ensuring all staff serving in project management roles have a firm understanding of our approach, associated processes, tools and resources, and access to senior staff for ongoing support as needed.

Question B4. Confidentiality and Data Security

Opinion Dynamics takes the protection of Personally Identifiable Information (PII) very seriously and has worked with dozens of clients to meet their required needs in the transfer and storage of confidential data. Our experienced staff and our commitment to keeping technology current enable us to adapt to the security needs of all our clients. Over the past several years working with our utility clients, we have adjusted our data security processes to ensure they comply with increasingly stringent IT policies, and we will continue to do so as necessary.

To ensure the protection of PII, which Opinion Dynamics may possess, store, transmit, or have access to, we adhere to a comprehensive written information security plan ("WISP"). In developing the WISP, we considered administrative, technical, and physical safeguards for protecting PII, including evaluating our electronic and physical methods of accessing, collecting, storing, using, transmitting, and protecting such personal data. All staff are trained annually on our various policies, including the "Privacy Policy", "Vendor Management Policy", and "IT Security Policy" (these documents are available upon request).

Question B5. Quality Assurance/Quality Control

Conducting rigorous research and developing high-quality work products is an essential part of Opinion Dynamics' mission, and it is a central value driving the work of our staff at all levels. Opinion Dynamics has developed an integrated quality assurance and quality control (QA/QC) process, which ensures that we employ appropriate tools, technical expertise, and oversight at key points during the research and reporting process. It also ensures that we introduce all possible efficiencies to our work. The key elements of the Opinion Dynamics QA/QC process include:

- **Staffing.** Quality assurance is crucial on the backend of projects, but even more crucial is ensuring that our staff has the tools and competency to perform the job correctly in the first place. Because of this, all Opinion Dynamics staff goes through a rigorous skills assessment (covering core competencies such as survey design, database review and analysis, quantitative research, data analysis, and report writing) immediately upon hiring. Based on this review, we design a customized training and development plan to ensure that any deficiencies are appropriately addressed. This approach allows us to put each staff member in the best position to succeed based on the necessary skills required for a task.
- **Tools and processes.** Over the course of three decades of evaluation work, we have developed a suite of tools and processes to support the quality of our deliverables. This includes templates, tools with integrated safeguards and automated checks to flag potential quality issues, workflows and checklists, and training materials that provide guidance on best practices for key evaluation functions such as survey design and analysis, various types of impact analysis, and reporting. For multi-year engagements, such as this, we customize these established tools to meet the specific needs of the client/project. At the start of each engagement, these materials are listed in the project charter to ensure that staff are aware of these materials and use them, as applicable.
- **Senior technical advising and review.** Opinion Dynamics has established mandatory procedures for internal review of project deliverables and key interim products by senior staff. Each project is assigned a senior staff member as a technical advisor and/or a technical reviewer. The technical advisor is a senior staff member with specific expertise and experience in the key tasks of a given project. They are engaged throughout the project, providing guidance on methodologies and supporting the project team in the various evaluation activities, from planning to analysis and reporting. The technical reviewer is a senior staff member who is not engaged throughout the project and can thus provide a fresh perspective on the deliverable prior to delivery to the client.

Question B6. Customer Research and Actionable Recommendations

Opinion Dynamics brings unparalleled experience in primary data collection. Our multidisciplinary staff members have years of experience conducting quantitative and qualitative research (e.g., surveys, in-depth interviews, focus groups, usability studies, on-site visits) across a range of customer segments and program types and turning the findings of these customer research activities into relevant and actionable recommendations to support program improvements.

Opinion Dynamics has a dedicated **survey research team** that focuses solely on the design and implementation of all survey efforts. In a given year, we successfully field dozens of concurrent surveys with residential and nonresidential program participants, nonparticipants, building owners and managers, and trade allies across varied target markets. As part of these activities, we work closely with our clients to co-create instruments or leverage existing data collection instruments, all while ensuring the integrity of our research and evaluations are not compromised. Quality survey data is the result of a thoughtful data collection strategy, a high-quality survey instrument, and respondent outreach tailored to the specific group of interest. At Opinion Dynamics, we treat survey design as both an art and a science. Our staff are trained in the science of survey and outreach design, such as knowing the effects of using different survey modes, question types, wording, and outreach methods, and their years of experience designing surveys have made them experts in the art of making the survey user friendly, conversational, focused, and as easy to complete as possible.

As industry needs have evolved, we have developed a **qualitative research group** inside Opinion Dynamics. This group is charged with ensuring we utilize the best methods and analyze qualitative results in a systematic way. Through valid and reliable qualitative research, we can interpret and better understand the complex reality of customer experiences. Opinion Dynamics has extensive experience employing multiple qualitative research techniques including in-depth interviews, Delphi panel facilitation, and in-person and online focus group discussions and workshops. Additionally, we use well-vetted tools and frameworks to systematically analyze and develop actionable recommendations from this data. Given the complexity of analyzing qualitative data, we utilize both pre-determined coding schemas and emergent coding structures to identify thematic patterns and trends. Specifically, we utilize NVIVO, a powerful qualitative analysis tool, to manage large qualitative datasets, effectively and efficiently mine for relationships in the data, and develop evidence-based qualitative insights. Finally, we take an interdisciplinary approach by drawing on other industries where appropriate to identify the best tools and practices to meet our research objectives.

The survey industry has changed dramatically over the past decade due to declining survey response rates and societal and technological changes, as well as the COVID-19 pandemic. To meet these challenges, our survey research team stays on top of the latest methodological research, trends in response rates, and industry best practices.

Our team members have expertise across a wide variety of topics related to survey data collection, including survey modes (online, telephone, mail, mixed mode, and in-person interviewing), instrument and outreach design and wording, and the sociological and psychological foundations of survey participation. Our expertise and capabilities allow us to customize the data collection strategy to the needs of each project.

Declining survey response rates have compounded the challenges that naturally come with attempting to survey historically underserved populations. We have found that using a mail-push-to-web (MPW) fielding approach, in which we mail survey invitations to customers to complete the survey, provides the highest response rates for underserved populations. The survey invitations contain a web address, which the recipient can use to complete the survey online. We also provide a telephone number customers can call if they lack internet access or prefer to take the survey over the phone. In addition to providing two response modes to complete the survey, it is important to give all customers who complete the survey a monetary incentive. Survey completion incentives are much more effective at increasing response rates than sweepstakes or non-monetary rewards.

Question B7. TRM Development

Opinion Dynamics has supported TRM assessment and development, updates, and management for clients in a number of jurisdictions, including Vermont, Illinois, Missouri, South Carolina, Michigan, and New York. Given our extensive program evaluation experience working with clients across the country, we are familiar with countless utility-specific TRMs and every regional and/or state-specific measure savings resource, including the California DEER database, the MidAtlantic TRM, and Northwest Power and Conservation Council's Regional Technical Forum.

As part of our role as Dominion South Carolina's portfolio evaluator, Opinion Dynamics created a jurisdiction-specific TRM for residential and commercial measures based on the Mid-Atlantic TRM and other TRMs and resources. We review the TRM on an annual basis for changes in codes and standards and new measures and make updates as needed.

Our typical TRM monitoring and review process includes an annual review of the deemed savings algorithms and assumptions used to determine savings for all applicable measures to determine the need for revisions in the TRM. As a matter of course, Opinion Dynamics remains abreast of any revisions with respect to savings algorithms or underlying assumptions within the appropriate TRM and other relevant regional resources. In addition, we review program data and technical reference materials, along with any data from recently completed research projects that may be applicable to a TRM update or review. Based on these efforts we recommend and implement revisions to TRMs as needed.

Opinion Dynamics has a long history with statewide TRM update processes. For example, we represent Ameren Illinois in the Statewide TRM update process, which involves identifying needed TRM updates, conducting research to update key parameters and algorithms, reviewing other statewide research submitted as part of the TRM update process, and providing additional support as needed as a member of the state's Technical Advisory Group.

In addition to TRM development/update support, our team is familiar with many TRMs across the country, including the Arkansas TRM currently used for the Louisiana Quick Start programs. We routinely leverage the Arkansas TRM for clients who do not have jurisdiction-specific TRMs but who are a good match with Arkansas in terms of climate. Team member GDS is currently conducting a potential study in Arkansas and developed a measure database for a prior potential study conducted for the City of New Orleans.

Question B8. Working Group Participation

Our team brings deep experience providing ongoing regulatory support in a number of jurisdictions across the country. We have led and/or participated in numerous utility stakeholder processes and counseled clients facing shifting regulatory goals and priorities. We have worked in stakeholder environments as diverse as California, Missouri, Illinois, New York, Oregon, and Massachusetts. We see it as our job to effectively communicate with our clients and relevant stakeholders throughout the evaluation process to ensure we are complying with all requests in a consistent and useful manner.

Opinion Dynamics regularly provides stakeholder and regulatory support for clients across the country, including presenting evaluation findings to stakeholder groups, developing, and filing testimony for clients in regulatory proceedings, and working closely with utility regulatory and program staff to respond to regulator and stakeholder requests for technical counsel and analysis.

Notably, Opinion Dynamics participates in a plethora of Illinois stakeholder forums, including the Illinois Stakeholder Advisory Group (SAG), the Illinois Technical Advisory Committee, the Illinois Income Qualified Advisory Committee, the Illinois Net-to-Gross Working Group, and many subcommittees and working groups of the aforementioned. As a member of the Illinois SAG, Opinion Dynamics presents regularly on evaluation planning and direction, key evaluation issues that require stakeholder feedback or policy resolution (e.g., how to incorporate newly instituted building electrification efforts into the existing Illinois cost-effectiveness framework), and key evaluation findings and recommendations ranging from updated net-to-gross ratios to initial evaluation results for new pilot programs. All evaluation reports are shared with the Illinois SAG for review and comment prior to finalization. Additionally, Opinion Dynamics works with external stakeholders and Ameren Illinois to ensure that stakeholder comments are appropriately addressed and represented in deliverables, where needed. In addition to its participation in Illinois stakeholder forums, Opinion Dynamics files independent regulatory testimony each year to support Ameren Illinois in the annual portfolio reconciliation process.

Our approach to stakeholder engagement involves constant monitoring of EM&V issues and Working Group agendas, and early engagement on relevant topics. Through our experience, we have found it is far better to engage throughout the stakeholder process for a given topic, than it is to provide findings or recommendations in a vacuum at the end. For example, Opinion Dynamics facilitates regular Project Coordination Groups (PCGs) for CPUC studies, which involve sharing evaluation status, soliciting and responding to feedback, and presenting results. Opinion Dynamics will work closely with the Commission to discuss, develop, and implement the appropriate strategy for engaging in collaborative meetings.

Question B9. EM&V Plan Development

Opinion Dynamics has extensive experience drafting, reviewing, and executing EM&V Plans within the context of large, multiyear portfolio evaluations. Based on our past engagements with utility clients such as Dominion South Carolina, Ameren Illinois, Ameren Missouri, Puget Sound Energy, PSEG Long Island, and PSEG New Jersey, we will leverage our experience across each facet of the evaluation planning process to efficiently deliver a high-quality plan.

What distinguishes the Opinion Dynamics team from others is our effective communication, flexibility, and pragmatic approach to the evaluation planning process. It is relatively easy to develop a standard impact and process evaluation plan that appears to check all the boxes. It is quite another to ensure that the output of the evaluation activities codified in the plan is actionable. To do so, one's evaluation team needs to have a deep understanding of the regulatory needs and requirements, stakeholder perspectives, and operating reality, as well as the ability and willingness to articulate the value of proposed activities. The evaluation planning process is essentially an exercise in tradeoffs (i.e., where will evaluation dollars have the greatest impact on the portfolio of programs?), and Opinion Dynamics has mastered the implementation of this process as part of annual and multiyear evaluation planning processes.

As an example, in the Midwest, we work closely with the Illinois Commerce Commission (ICC) and Ameren Illinois to execute a collaborative evaluation planning process. This involves drafting an initial four-year evaluation plan that is reviewed in detail with Ameren Illinois and ICC staff before being presented to the Statewide Advisory Group, where we gather feedback from a wide range of energy efficiency plan stakeholders. Our team then develops annual evaluation plans each year that go through a similar feedback and revision process before we shift into implementation. Through this work over the past fifteen years, we have established a track record of helping our clients, the ICC and Ameren Illinois, and other stakeholders navigate tradeoffs and identify market and process research that will be most impactful in supporting both utility and statewide goals.

We also bring specific expertise in developing evaluation plans for statewide evaluation efforts. For example, Opinion Dynamics has been actively engaged in the evaluation of statewide energy efficiency programs in California for two decades. As part of our work with the California Public Utilities Commission and the various Investor-Owner Utilities (IOUs), we must navigate differences in views about the programs and the best way to evaluate them, as well as facilitate discussions that help build consensus and buy-in on the ultimate approach. We have successfully accomplished this across a range of studies on topics as diverse as whole home upgrade and small business direct install programs, as well as the energy-saving impacts of water heating technologies. Our ability to effectively engage in and lead the evaluation planning process in a setting of this nature is based on both the technical and management skills of our team. As evidenced in our staffing plan for this effort, we have a range of staff with deep experience leading stakeholder working groups focused on evaluation planning, as well as staff with the knowledge and expertise needed to distill client and stakeholder feedback into clear objectives aligned with evaluation activities. We will bring this experience to Louisiana to ensure a smooth ramp-up of evaluation activity in the state.

Question B10. EM&V Functions

We have demonstrated experience performing EM&V functions across numerous large-scale portfolio evaluation projects for a range of clients across the United States. This includes verifying energy savings from residential and C&I energy efficiency programs for annual compliance purposes, as well as verifying program costs and conducting annual cost-effectiveness analyses.

- **Savings Verification:** Our team has led numerous energy efficiency impact evaluations focused on verifying gross energy savings. We have experience with all impact evaluation methods and are adept at determining the most cost-effective approach to deliver impact evaluation results that balance rigor, funding, and stakeholder input. Our subject matter experts have the experience and technical skills to conduct impact evaluations for traditional and cutting-edge energy efficiency programs.
- **Cost Effectiveness:** Opinion Dynamics brings over a decade of experience conducting benefit-cost analysis (BCA) for our clients. Our expertise ranges from conducting industry-standard BCA tests for energy efficiency portfolios to valuation of non-energy impacts (NEIs), such as modeling and monetization of societal health benefits realized from PM2.5 emissions reductions. Opinion Dynamics staff have extensive experience with the industry's classical BCA tests (the Societal Cost Test, Total Resource Cost test, Utility Cost Test, Participant Cost Test, and Ratepayer Impact Measure Test) and have participated in the development of the National Standard Practice Manual for Distributed Energy Resources, the industry-standard handbook that has guided the development of newer jurisdictionally specific tests throughout the United States. We have directly developed BCA inputs for Ameren Illinois, Ameren Missouri, Duke Energy, PacifiCorp, the New Hampshire Program Administrators, and PSEG Long Island, among others, and have produced research that dozens of additional clients have used to support BCAs and related analyses.
- **Process Insights:** Opinion Dynamics' experience has been that integrating process and impact evaluations whenever possible is highly valuable. Process evaluation explains the "why" and "how" behind every great impact

assessment. Our firm's main objective in providing process assessments is to provide an enhanced understanding of how program processes work individually and together to influence program delivery, program participation, and the overall customer experience. Based on the results, we will provide sound and actionable recommendations related to maximizing program success.

In addition to these core functions, our team has extensive experience with the following foundational components of EM&V for large and statewide programs:

- **Data Intake and Management:** Data intake and management are crucial components of evaluations like this one. As an industry-recognized leader in the energy space, Opinion Dynamics prioritizes accurate, efficient, and standardized data management as a core capability. Our data engineers and data science team are experienced with the myriad of data management challenges unique to utility data. One key to our ongoing success is a trusted working relationship with our client's IT Departments to ensure compliance with data security and data transfer and management policies.
- **Data Collection and Analysis:** The evaluation of large statewide programs requires data from multiple sources, including participating and non-participating customers and market actors. The Opinion Dynamics team is skilled at gathering the right data for evaluation, embedding continuous data collection activities where appropriate while creating an ecosystem of diverse and user-friendly feedback to nurture learnings, and ultimately leveraging both primary and secondary data for analysis of program performance. Our multidisciplinary staff members have years of experience conducting quantitative and qualitative research (e.g., surveys, in-depth interviews, focus groups, usability studies, and on-site visits) across various residential and C&I customer segments and program types.
- **Reporting:** At Opinion Dynamics, we view reporting as a communication tool designed to provide clear, concise, and actionable information. Opinion Dynamics prides itself on clearly communicating evaluation results both on an ongoing basis and upon the achievement of key milestones. We have experience providing annual compliance reports as well as more holistic annual evaluation reports for all our portfolio clients. We also consistently provide ad hoc memos and PPT-based reporting as needed to meet client needs.

Question B11. Market Potential Study

GDS has completed over 100 studies market potential studies over the last several decades. During that time our firm has continuously improved its study approaches to account for lessons learned not only from each completed study but also within the broader energy efficiency planning and evaluation field and to reflect new developments in technology and program design, which help improve program performance. We recognize the need to continuously refine our standard approach to implement best practices, and we place high value on understanding the unique circumstances of each study, the client, and the conditions affecting the outcomes of the project, such as policy goals and the level of necessary stakeholder or intervenor engagement. No two potential studies completed by GDS follow the same script, and our models are routinely redesigned and customized for individual clients to apply the lessons we have learned.

In addition to traditional potential assessments, GDS has been involved in innovative utility program planning work as the energy delivery market and common business models have evolved. In Minnesota, GDS led a market potential study analyzing the characteristics of electric utility infrastructure improvements as conservation measures on both the generation side as well as the transmission and distribution side. Similarly, we have conducted numerous assessments of electrification and distributed energy resources potential. Many of our studies have been multi-jurisdictional and multi-fuel (electric/gas), including studies in Arkansas, California, Illinois, Indiana, Michigan, Pennsylvania, and Vermont. A brief list of relevant projects completed in the last five years is shown below.

Table 2. GDS Market Potential Study Experience

Client	Study Year(s)	Market Research	Electric EE	Gas EE	Electrification
Arkansas PSC	2024	✓	✓	✓	
Joint Illinois Utilities	2024	✓	✓	✓	✓
Indiana-Michigan Power	2024, 2021	✓	✓		
Ameren Missouri	2023, 2020, 2016		✓		
Hoosier Energy	2023, 2009		✓		✓
Montana-Dakota Utilities	2023	✓	✓		
Kentucky Power Co.	2022	✓	✓		
VT Dept. of Public Service	2022, 2019, 2014, 2011, 2007		✓	✓	✓
Yampa Valley Electric Assoc.	2022				✓
CenterPoint Indiana	2022, 2018	✓	✓	✓	
CenterPoint Ohio	2022			✓	
AES Indiana	2021, 2018	✓	✓	✓	✓
City Council of New Orleans	2021		✓		
East Kentucky Power Coop.	2024, 2021, 2018, 2015		✓		
Lansing BWL	2020, 2016		✓		
CA Municipal Utilities Assoc.	2020		✓	✓	✓
NIPSCO (IN)	2020	✓	✓	✓	
DTE Energy / MI PSC	2020, 2017, 2013		✓	✓	

C. APPROACH TO EM&V FUNCTIONS

Question C1. Data Systems

How our team will utilize the Administrator's data systems will depend on the nature and functionality of the data systems in use. In many cases, we do not have direct access to the Program Administrator's systems; rather, we develop and submit formal data requests documenting the specific data elements required to support our EM&V tasks and the associated use case for each data element. Our data management team applies our automated data quality assessment protocols to assess the completeness and accuracy of the data provided. Once deemed suitable, the evaluation team leverages these data for the relevant EM&V tasks. This approach generally works well, although it places additional burden on the Program Administrator to ensure complete and timely responses to each request, and thus tends to limit the possibility of more continuous or "real-time" EM&V activities (e.g., multi-wave sampling). In other cases, however, we have direct access to the Administrator's systems and the data it contains. This access is generally limited to viewing and exporting participation data and associated supporting documentation. The ability to directly access program tracking data allows us to ensure the most cost-effective use of our evaluation budgets as we can monitor in real-time how different programs are doing relative to plans, which might trigger changes to our EM&V approaches. In some cases, e.g., non-residential programs with longer lead times such as Custom and Retro-Commissioning, available data also includes the pipeline of projects that are in early phases. Having visibility into expected participation by the end of the plan year allows us to better plan EM&V activities such as sampling for desk reviews and on-site visits. In either case (direct access or not), it is our understanding that the Program Administrator will be responsible for the aggregation of program data, if multiple implementation contractors are being used.

Other software used by the EM&V team will be limited to standard software packages that are publicly available. While we will be developing (or enhancing existing) tools to support our EM&V tasks and other studies, these tools are not proprietary and will be available to the Commission at the conclusion of the contract period. Two examples of tools we expect to develop are a tool to execute the annual cost-effectiveness analyses of the EE Program and GDS's Market Potential Study tool.

Question C2. Data System Management

We do not expect to develop software as part of this scope of work. As noted above, we expect to use standard software packages and leverage our suite of existing, non-proprietary EM&V analytic tools that will allow us to cost-effectively execute the various analyses expected under this scope of work.

Question C3. EM&V Plan

As noted earlier, our evaluation planning philosophy is rooted in working collaboratively with our clients to identify strategic portfolio goals, identify the most cost-effective ways to support those goals through evaluation research, and re-visit those evaluation priorities as conditions and goals change over time. We believe that evaluation plans must clearly articulate the "why" behind proposed evaluation activities so that our clients and stakeholders see tangible links between the evaluation team's tasks and concrete recommendations for program improvement.

At the start of the cycle, we will work with the Louisiana Public Service Commission and utility stakeholders across the state to convene an evaluation planning workshop. The goal of this workshop is to bring forward our most seasoned staff to discuss where the statewide program is today, where the LPSC wants it to go in the future, and how research evaluation can help. This upfront investment in planning will help establish the type of partnership needed to ensure evaluation funds are strategically allocated to those efforts that will help ensure value from program investments. This meeting will also help us understand the resources available and/or needed to help monitor program performance.

Following the workshop, we will draft an EM&V Plan for the LPSC's consideration. Our EM&V Plan will clearly stipulate the evaluation objectives, the level of evaluation rigor to be applied, the specific approaches and methodologies for each data collection and analytic effort, and the timeline and scope for all deliverables. The plans will also include a checklist of activities required to complete annual evaluation reports. While we anticipate minimal revisions to this document moving forward, we will treat it as a living document and update it as needed, given changing program priorities, new market developments, or regulatory preferences. We believe that all effective evaluation plans must adapt as programs and markets evolve while providing confidence that the necessary assessments will occur.

Opinion Dynamics staff are experts at planning and budgeting at the macro level, as well as one year at a time. We have planned for and kept to multi-year budgets for many clients while making sure that our research is flexible and responsive. Our plans will adapt to the information needs (program or market) and available budgets as we work closely with the LPSC and relevant stakeholders throughout the evaluation planning process to prioritize efforts. We will utilize best-practice evaluation approaches appropriate for each program and informed by industry references such as the UMP and IPMVP.

EM&V Plan examples are available at the following locations. These are available in hardcopy, upon request.

PY 2022 Statewide Midstream Commercial Water Heater Evaluation Workplan
https://pda.energydataweb.com/api/view/3883/SW%20WH%20Eval%20Workplan%20FINAL.pdf

Ameren Illinois Company Energy Efficiency Portfolio Evaluation Plan

https://www.ilsag.info/wp-content/uploads/AIC-2024-2025-Evaluation-Plan-FINAL-2024-02-28.pdf

Question C4. Annual Reporting

At Opinion Dynamics, we view reporting as a communication tool designed to provide clear, concise, and actionable information on program performance and opportunities for optimization. We also understand that reporting must be timely to meet client and stakeholder needs.

We rely on a variety of reporting formats selected to best convey the findings and recommendations in question, including reports, memoranda, presentations, and, where appropriate, interactive maps. We also understand our reports serve a variety of purposes and, therefore, audiences, and we craft deliverables to be responsive to those needs. This includes ensuring transparency in the data processing and analytical assumptions in a manner that facilitates understanding across technical and non-technical audiences.

We are adept at writing evaluation reports that meet the highest quality standards and will bring that experience to this effort. To ensure the highest quality, all Opinion Dynamics deliverables undergo a rigorous quality assurance process. Senior staff members review all deliverables to ensure that methodologies are sound, findings are relevant and presented in the best possible manner, and the deliverables meet the highest standards of quality. We also have a technical editor who reviews all deliverables for clarity, conciseness, grammar, and style.

After each program year, the Opinion Dynamics team will provide an annual evaluation report to the LPSC. The report will summarize evaluation methods and results at both the portfolio level and individual program-specific chapters. It will also compare program achievements to program goals and explain any discrepancies between ex-ante and verified savings. Annual reporting will also identify areas for process improvement and associated recommendations for facilitating changes. Finally, as needed, we will schedule calls with the LPSC in advance of the draft annual report to share major findings in advance of full reports.

Annual EM&V Report examples are available at the following locations. These are available in hardcopy, upon request.

PY2022 Statewide Midstream Commercial Water Heating Program Impact Evaluation

https://www.calmac.org/publications/PY2022_SW_Midstream_Commercial_Water_Heating_Program_Impact_Evaluation_Report-FINAL.pdf

Ameren Illinois Company 2023 Residential Program Impact Evaluation Report

https://www.ilsag.info/wp-content/uploads/2023-AIC-Residential-Program-Impact-Evaluation-Report-FINAL-2024-04-29.pdf

Ameren Illinois Company 2023 Business Program Impact Evaluation Report

https://www.ilsag.info/wp-content/uploads/2023-AIC-Residential-Program-Impact-Evaluation-Report-FINAL-2024-04-29.pdf

PacifiCorp Washington Low Income Weatherization Program Evaluation[1]

https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/environment/dsm/washington/2022_PacifiCorp_Washington_LIWP_Report.pdf

Question C5. Market Potential/Market Research

GDS employs industry-standard best practices for conducting market potential studies. Our studies begin by broadly aligning with methodologies established in the National Action Plan for Energy Efficiency's "Guide to Conducting Energy Efficiency Market Potential Studies," and then tailoring key elements of the study to meet client needs. Tailored methodological considerations take into account the appropriate techniques for cost-effectiveness screening, definitions of achievable potential, and methods for assessing near-term and long-term adoption rates. GDS has completed numerous electric and natural gas energy efficiency potential studies and baseline assessments for utilities and energy efficiency organizations (see also response to Question B11), including studies that required statewide assessments of potential broken out across multiple utilities with varied market segments and fuel/equipment saturations.

In general, GDS utilizes a bottom-up approach to the modeling of energy efficiency in the residential sector, whereby the measure-level estimates of costs, savings, and useful lives are used as the basis for developing technical, economic, and achievable potential estimates. For the nonresidential sectors, the GDS team employs a hybrid approach that includes bottom-up modeling to first estimate measure-level savings, costs, and cost-effectiveness, and then applies a top-down measure savings factor to all applicable disaggregated shares of energy load by building type. Due to the difference in sector-level approaches, the GDS team uses sector-specific models to develop the potential estimates for each utility. The sector models follow a similar structure but employ slightly different modeling logic that aligns with the bottom-up versus top-down methodology.

These studies are conducted with a mix of utility-specific and secondary data. Load forecasts, avoided costs, and historical achievements are typically requested from the participating utilities. Secondary sources are typically used to derive measure savings and secondary benefits (such as secondary fuels, water, or other non-energy benefits). GDS has prior experience utilizing the Arkansas TRM to collect measure-level data across varying climates and has a measure database from a prior potential study conducted for the City of New Orleans. We also have databases of emerging and innovative technologies for a statewide assessment in Illinois. Building and equipment stock data may be derived from utility-specific studies (if available), secondary sources (such as Energy Information Administration data), or from

[1] While the linked report is for Washington State, Opinion Dynamics conducted a multistate evaluation of this program for PacifiCorp.

primary market research (if requested). This research would be utilized to understand the types of energy-consuming equipment in homes and businesses for key end-users as well as key energy-efficient equipment saturations. Our initial scope, however, assumes that the LPSC will want to leverage existing data sources to the extent possible and GDS has extensive experience conducting market potential without substantial primary market research efforts.

Market Potential Study examples are available at the following locations. These are available in hardcopy, upon request.

https://opiniondynamics.sharefile.com/public/share/web-sa774b69d283b4ae78e8302106b7accfc

https://www.ameren.com/-/media/missouri-site/files/environment/irp/2023/ch8-appendixa.ashx

Question C6. Measure Management

Please refer to our response to Question B7.

Question C7. Stakeholder Coordination

Virtually all of our past and current portfolio evaluations have required frequent coordination with a range of parties, including utilities, regulators, program administrators, market actors, and stakeholder groups.

Frequently, when our clients are developing new programs or operating under new regulatory frameworks, they are simultaneously navigating a complex stakeholder process. We understand how these processes can result in uncertainties, require abrupt changes in plans, and can be a considerable time burden. We have led and participated in numerous stakeholder processes, counseled clients facing shifting regulatory goals and priorities, led evaluation framework development processes, and effectively collaborated with multiple program implementation partners as well as our client's internal and external stakeholders. Our team will bring this experience to help support a smooth transition from the current Quick Start programs to the new Phase II framework.

Please also refer to our response to Question B8.

Question C8. Local Staffing

Our team has offices and staff throughout the country, although not currently in Louisiana. In similar past and current engagements, we have found that we can effectively carry out all required EM&V functions – including effective communication and collaboration with the client, the program administrator, and stakeholder groups – through a combination of remote technologies and periodic in-person visits.

D. COST PROPOSAL

Question D1. Proposed Budget and Rate Schedule

Our proposed not-to-exceed budget for the transition year and the first 4-year plan cycle in included in Attachment B. The underlying hourly rate schedule is provided in Appendix A.

Our budget is below the EM&V budget cap of no more than 4% of the total EE program budget stipulated in the General Order and is based on the tasks described in the RFP, our extensive experience conducting portfolio evaluations around the country, and our review of the Phase II rules, the Quick Start Programs (including their design/implementation and evaluation), and other available materials regarding the new EE Program. For budgeting purposes, we have assumed an average annual EE program budget of approximately $80 million for the first budget cycle supporting the implementation of a comprehensive portfolio of energy efficiency program designs for residential, commercial and industrial, and income-qualified customers statewide. Since the total EE program budget and the number and diversity of EE programs requiring evaluation have not yet been determined, there is considerable uncertainty around the exact budget required to complete all EM&V activities and studies. While we are confident that we can execute the tasks stipulated in the RFP within the proposed budget, we will work with the Commission, to balance EM&V priorities with budget constraints if the size and scale of the final EE Program significantly exceeds our assumptions.

Key assumptions underlying our proposed budget include:

- **EM&V Plans.** During the transition year, we will develop the EM&V plan for the first 4-year plan cycle (2026-2029). Per RFP guidance, our budget includes minor annual evaluation plan updates in 2026-2029. As noted in our response to Question A3, based on the projected EM&V contract execution date outlined in the RFP (April, 2025) and the requirement to deliver a final evaluation plan by May 1, 2025, we may allocate additional EM&V planning budget to subsequent year plan updates.
- **EM&V Functions and Annual Reporting.** During the transition year, this budget includes the development of a transition plan as well as early activities to ensure the evaluability of the EE Program and prepare for the evaluation of PY1, e.g., a review of program design/implementation materials and the program-tracking databases, development of a data needs memo (see also responses to Questions A3 and A5), development of data exchange protocols and schedules, etc.. During the four plan years, specific EM&V functions will depend on the final size and design of the EE Program and its delivery channels. On an annual basis, we will perform impact analysis, cost-effectiveness analysis, and issue the Annual EM&V Report. We will determine and prioritize process evaluation activities as part of EM&V Plan development. Our budget assumes a process evaluation for each subprogram at least once per budget cycle and ongoing measurement of customer satisfaction.
- **EE Working Group Participation.** We assume quarterly meetings throughout the five-year cycle, with additional ad hoc meetings to support discussion of specific topics or studies such as the TRM and the Market Potential Study. Not knowing the depth and breadth of working group engagement, we have built in a cushion into this task budget.
- **Technical Reference Manual.** Given the need and value of developing a Louisiana-specific TRM has not yet been determined, our budget assumes a hybrid approach to TRM development, i.e., development of a Louisiana-specific TRM for a subset of measures (e.g., those with a substantial impact on program savings and/or those not well characterized by the Arkansas TRM), while retaining the current approach for other measures. We will work with the Commission and the Program Administrator to identify the most valuable measures to include in the Louisiana-specific TRM. If we determine that it would benefit Louisiana customers to develop a Louisiana-specific TRM, we will work with the Commission to balance the EM&V budget across all other tasks and program years.

- **Market Potential Studies.** Our budget assumes a Market Potential Study based on available program, utility, and secondary data, rather than based on new primary data collection (see also response to Question C5). We have allocated the majority of the study budget during 2027 and 2028, assuming that the study will be conducted to inform the goal-setting process for the 2030-2033 program cycle.
- **Other Analysis, Studies, and Commission Support.** We have allocated $25,000 during the transition year and $100,000 in each of the four plan cycle years to support this task.

Question D2. Accounting for Uncertainty

Opinion Dynamics has conducted portfolio evaluations for more than two decades and is therefore very familiar with each of the evaluation tasks requested in this RFP and the budget required to execute an evaluation of this scope. Having said that, many variables that determine a final EM&V scope and budget are still unknown, introducing considerable uncertainty – in particular for the EM&V Functions and Annual Reporting task. As noted above, we are confident that we can deliver annual evaluations that meet the regulatory requirements and provide insights for program improvement within the proposed budget. As part of our planning, we will carefully prioritize and calibrate the exact scope of our activities for each sector and delivery channel (e.g., the number and depth of process evaluations, the number of desk reviews and onsite visits) to match the final, agreed-upon budget.

As shown in Attachment B and noted above, we have allocated a total of $425,000 (or approximately 5% of the overall 5-year budget) to the "Other Analysis, Studies, and Commission Support" task. We will work with the Commission on the best use of this budget.

Question D3. Sample Contract/Preferred Terms

Appendix C provides a sample contract and preferred terms.

APPENDIX A. COST PROPOSAL

Attachment B provides our proposed budget for the transition period and the first 4-year plan cycle. Table 3 show the underlying hourly rates for staff highlighted in our organizational chart (see response to Question A7) as well as additional functional roles. These rates are valid for the full 5-year engagement.

Table 3. Hourly Rate Schedule

Functional Role	Title	Team Member	Blended Rate (2025-2029)
Opinion Dynamics Staff			
Executive-in-Charge	Vice President	Antje Flanders	$325
Data Analytics SME	Senior Director	Dr. Jim Steward	$285
TRM Lead	Lead Engineer	Dr. Kevin Ketchman	$275
C&I Engineering Lead	Lead Engineer	Joe Plummer	$275
Statistical Analysis Lead	Lead Data Scientist	Kathleen Ward	$275
Project Director	Director	Alan Elliot	$260
Data Management SME	Director	Dan McMartin	$260
Engineering Analysis SME	Director	Jessica Raker	$260
Cost-Effectiveness SME	Director	Zach Ross	$260
Sampling SME	Director	Jayden Wilson	$260
Residential/IQ Engineering Lead	Associate Lead Engineer	Mallorie Gattie	$240
Residential/IQ EM&V Lead	Principal Consultant	Evan Tincknell	$225
C&I EM&V Lead	Principal Consultant	Tyler Sellner	$225
Evaluation Manager	Principal Consultant	Zac Hathaway	$225
Evaluation Manager	Principal Consultant	Malena Hernandez	$225
Survey Research SME	Survey Operations Lead	Kitty Cook	$225
Evaluation Manager	Managing Consultant	Allyson Dillehay	$195
Evaluation Manager	Managing Consultant	Jenna DeFrancisco	$195
EM&V, Analysis & Reporting	Sr Consultant/Sr Engineer	Various	$180
EM&V, Analysis & Reporting	Consultant/Engineer	Various	$160
EM&V, Analysis & Reporting	Associate Consultant	Various	$145
EM&V, Analysis & Reporting	Junior Consultant	Various	$125
GDS Staff			
Market Potential Study Lead	Principal	Jeffrey Huber	$369
Market Potential Study Manager	Consultant	Warren Hiron	$297
Market Potential Study Support	Director	Various	$369
Market Potential Study Support	Senior Consultant	Various	$314
Market Potential Study Support	Project Lead	Various	$264
Market Potential Study Support	Engineer/Analyst	Various	$231
Market Potential Study Support	Associate	Various	$193

APPENDIX B. INSURANCE QUALIFICATIONS

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 09/11/2024

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 Cabot Risk Strategies, LLC 15 Cabot Road Woburn MA 01801	CONTACT NAME: Yanet Garmakani-Suben PHONE (A/C, No, Ext): (800) 222-5963 FAX (A/C, No): (781) 376-9907 E-MAIL ADDRESS: yanet.garmakani@cabotrisk.com
INSURED Opinion Dynamics Corp 130 Turner St Suite 520 Waltham MA 02453	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A : Hanover American Ins. Co. — 36064 INSURER B : Allmerica Financial Benefit — 41840 INSURER C : Crum & Forster Specialty Insurance Company INSURER D : INSURER E : INSURER F :

COVERAGES CERTIFICATE NUMBER: 24-25 COI 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.

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 CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC OTHER:			ZZND030682-08	09/12/2024	09/12/2025	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 2,000,000 $ 100,000 $ 10,000 $ 2,000,000 $ 4,000,000 $ Included
B	AUTOMOBILE LIABILITY ANY AUTO OWNED AUTOS ONLY X HIRED AUTOS ONLY X SCHEDULED AUTOS X NON-OWNED AUTOS ONLY			AWND030580	09/12/2024	09/12/2025	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
A	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED X RETENTION $ 0			UHND030811 08	09/12/2024	09/12/2025	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A					PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $
C	Tech Professional and Cyber			TEC-108095927-00	09/12/2024	09/12/2025	Each Claim or Breach Policy Aggregate Retention	$5,000,000 $5,000,000 $25,000

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

CERTIFICATE HOLDER	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

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

SERVICES AGREEMENT

This Services Agreement ("Agreement") is made effective as of the th day of , 2024 ("Effective Date") by and between XXXXXXXX, a _____ corporation with offices at _____("Client") and Opinion Dynamics Corporation, 130 Turner St.., Waltham, MA 02453, ("Supplier").

BACKGROUND

WHEREAS, the parties desire Supplier to perform _____ services ("Services") under the terms and conditions of this Agreement with each Project defined in the Statement of Work hereinafter set forth,

NOW THEREFORE, in consideration of the mutual promises and covenants set forth herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

ARTICLE 1: DEFINITIONS

1.1 "Acceptance Criteria" shall mean with respect to a Deliverable or a Service, a statement defining the criteria for acceptance of that Deliverable or Service. In no event shall the criteria for acceptance be based on the outcome of an evaluation by the Evaluator.

1.2 "Deliverable" shall mean a tangible work product to be developed for and delivered to Client, as set forth in the Statement of Work. By way of example, a "Deliverable" may consist of a plan, a report, or a design.

1.3 "Enforceable Intellectual Property Right" shall mean a proprietary right, including without limitation a trade secret, copyright, patent or trademark.

1.4 "Project" shall mean the Services to be rendered to Client, and the related Deliverables, as set forth in the Statement of Work.

1.5 "Statement of Work" shall mean the Statement of Work attached to this Agreement as Exhibit A hereto. In the event of a conflict between the Statement of Work and the provisions of this Agreement, the Statement of Work shall take precedence as to the Project described therein.

ARTICLE 2: SERVICES

2.1 Supplier shall render the Services and deliver the Deliverables set forth in the Statement of Work to Client, and Client shall perform its responsibilities set forth in the Statement of Work. Supplier shall use commercially reasonable efforts to complete work in accordance with the agreed milestones and dates set forth in the Statement of Work.

2.2 Supplier acknowledges that this is a turn-key project and, unless otherwise specifically provided in the Statement of Work, Supplier shall provide and pay for all labor, equipment, rent, materials, tools, machinery, water, heat, utilities, transportation and other facilities and services necessary for the proper preparation, execution and completion of the Services and Deliverables.

2.3 Supplier shall reasonably cooperate with all other contractors who may be performing work on behalf of Client, and Supplier shall conduct its operations so as to not unreasonably interfere with the work of such contractors.

ARTICLE 3: FEES AND EXPENSES

3.1 All fees and expenses due Supplier in connection with a Project, inclusive of taxes, shall be set forth in the Statement of Work. Payment for all work performed by Supplier in connection with a Project shall be made by Client to Supplier in accordance with the payment schedule and procedures in the Statement of Work. Client shall make final payment to Supplier after final acceptance of Services and Deliverables by Client, provided that there shall have been presented to Client and in form satisfactory to Client. All invoices shall be due and payable within thirty (30) days of receipt by Client.

3.2 CLIENT will reimburse Supplier for the reasonable travel and living expenses for Supplier personnel that are directly connected with the performance of' their duties on the Project if so provided in the Statement of Work or with the prior written consent of Client.

ARTICLE 4: TERM OF AGREEMENT

This Agreement is effective on the Effective Date and shall extend until the Statement of Work has terminated or expired, unless sooner terminated as hereinafter provided.

ARTICLE 5: DELIVERY AND ACCEPTANCE

5.1 Supplier shall furnish to Client the Deliverables, meeting notes and other working papers, if any, described in the Statement of Work in accordance with the terms of the Statement of Work in all material respects.

5.2 Supplier will exercise due professional care and competence and will perform Services in a first class, workmanlike manner. Client shall have the right to evaluate and test each Deliverable in accordance with the applicable Acceptance Criteria. Within thirty (30) days of delivery, Client shall give Supplier written notice of Client's acceptance or rejection of the Deliverables in accordance with those Acceptance Criteria. Client's acceptance of the Deliverables shall in no manner waive Client's rights under any representation or warranty set forth in this Agreement.

5.3 Supplier shall correct any deficiencies or errors and/or omissions in the Services and/or Deliverables at Supplier's cost in order that the Deliverables will meet the Acceptance Criteria.

ARTICLE 6: SUPPLIER'S USE OF CLIENT MATERIALS

No license or right is granted under this Agreement to Supplier to use, execute, reproduce, display, perform, distribute externally, sell copies of, or prepare derivative works based upon, any Client materials, except that Supplier may exercise the foregoing rights of use, execution, reproduction and adaptation within its own organization solely for the purpose of rendering performance as required by the Statement of Work. Upon completion of such performance, all Client materials (excluding any adaptations thereof) shall be returned in their entirety to Client. The terms of this Article do not, however, affect the obligations of the parties under Article 11 (*Confidentiality*) below. The obligations in this Article 6 shall not require Supplier to alter or deviate from its normal record retention policies or to expunge from its records internally generated files, references, notes, analyses or memoranda containing or relating to Services or Deliverable; provided, that such information shall be retained subject to the terms of Article 9.

ARTICLE 7: OWNERSHIP AND RIGHTS

7.1 Unless otherwise provided in the Statement of Work, Client shall, upon payment of invoices relating thereto, own all Deliverables and all U.S. copyrights in those Deliverables, and all Deliverables shall be considered work made for hire owned by Client. If any such Deliverables may not, by operation of law, be considered works made for hire (or if ownership of all right, title and interest of the U.S. copyrights therein shall not otherwise vest exclusively in Client), Supplier shall be deemed to have automatically assigned, without further consideration, the ownership of all U.S. copyrights therein to Client, its successors and assigns, upon such payment. Client, its successors and assigns, shall then have the right to obtain and hold in its or their own name copyrights, registrations, and any other protection available in the foregoing.

ARTICLE 8: PROJECT TERMINATION

8.1 Client or Supplier may terminate this Agreement for material breach thereof upon fifteen (15) days prior written notice, if the breach is not cured within the fifteen-day notice period; provided that such fifteen-day cure period shall be extended so long as the party in breach is diligently pursuing the cure of such breach. Neither party shall be obligated to provide more than one opportunity to cure a material breach during the term of this Agreement. In the event of such termination, Supplier shall immediately suspend the provision of Services and Client shall pay for all conforming Services rendered and all conforming Deliverables provided through the effective date of termination, such payment to include, but not be limited to, (i) all partially completed conforming Services and Deliverables, (ii) all non-returnable materials and other purchases relating to Services and Deliverables in Supplier's possession or control, (iii) all materials and other purchases relating to Services and Deliverables that have been ordered and are non-cancellable, (iv) cancellation and return fees on any materials or purchases relating to Services and Deliverables that may be cancelled or returned, as well as any shipping or other actual costs incurred in connection therewith, and (v) any amounts owing from Supplier to Subcontractors with respect to Services or Deliverables through the date of termination. Supplier shall promptly deliver to Client all materials and information supplied by Client in connection with the terminated Project, together with all Deliverables in process at the effective date of termination, whether complete or partially complete.

8.2 Either party may terminate this Agreement and the Statement of Work hereunder effective immediately upon giving notification thereof in the event the other party is adjudged insolvent or bankrupt, or upon the institution of any proceeding against the other party seeking relief, reorganization or arrangement under any laws relating to insolvency, or for the making of any assignment for the benefit of creditors, or upon the appointment of a receiver, liquidator or trustee of any of the other party's property or assets, or upon liquidation, dissolution or winding up of the other party's business.

ARTICLE 9: CONFIDENTIALITY

In the course of performing the Services, either party (the "Disclosing Party") may use and disclose to the other party (the "Receiving Party") software, other products, personnel data, Customer Information, business and technical information, and consulting methodologies of the Disclosing Party ("Proprietary Materials") that may or may not be licensed under separate agreements. The Receiving Party agrees to safeguard and keep confidential the Proprietary Material, and to use

such Proprietary Materials only internally in the course of the Receiving Party's business. The Receiving Party will limit the use of, and access to, the Proprietary Materials to the Receiving Party's employees whose use of, or access to, the Proprietary Materials is necessary for the Receiving Party's internal business use. The Receiving Party will have in effect, and will enforce, rules and policies designed to protect against unauthorized use or reproduction of the Proprietary Materials and other confidential information, including instruction of and written agreements with the Receiving Party's employees and contractors to insure that they use and protect the Proprietary Materials in a manner which protects the Disclosing Party's proprietary rights. The Receiving Party shall not provide access to the Disclosing Party's Proprietary Materials to any third party unless such third party has signed a confidentiality agreement with the Disclosing Party. The Receiving Party shall have no obligation of confidentiality with respect to Proprietary Materials that: (i) were rightfully in possession of or known to the Receiving Party without any obligation of confidentiality prior to receiving them from the Disclosing Party; (ii) are, or subsequently become, legally and publicly available without breach of this Agreement; (iii) are rightfully obtained by the Receiving Party from a source other than the Disclosing Party without any obligation of confidentiality; (iv) are developed by or for the Receiving Party without use of the Proprietary Materials and such independent development can be shown by documentary evidence; (v) are transmitted by a party after receiving written notification from the other party that it does not desire to receive any further Proprietary Materials; or (vi) are disclosed by the Receiving Party pursuant to a valid order issued by a court or government agency, provided that the Receiving Party provides the Disclosing Party (a) prior written notice of such obligation and (b) the opportunity to oppose such disclosure or obtain a protective order.

ARTICLE 10: INTELLECTUAL PROPERTY INDEMNITY

10.1 Client will notify Supplier, in writing, of any claim against Client that any Deliverable, or the use thereof, infringes an Enforceable Intellectual Property Right. Upon being notified of any action brought against Client based on such a claim, Supplier, at its sole cost, shall indemnify and defend Client in the action, perform any negotiations for settlement or compromise of the action, and pay any and all settlements reached and/or costs and damages awarded in the action, together with reasonable attorneys' fees; provided, however, that to the extent that any action is based upon a claim that material furnished to Supplier or inserted into any Deliverable by Client, or the use of such material, infringes an Enforceable Intellectual Property Right, Client, at its sole cost, shall indemnify and defend Supplier in the action, perform any negotiations for settlement or compromise of the action, and pay any and all settlements reached and/or costs and damages awarded in the action, together with reasonable attorneys' fees. Supplier shall conduct and control, through counsel of its choosing, the defense, settlement, adjustment or compromise of any Enforceable Intellectual Property Right claim. Supplier may effect the settlement, adjustment or compromise of any such claim without the written consent of Client so long as Client is indemnified in full and is not required to admit any culpability or accept any restrictions on its future operations. The expense of any such defense, settlement, adjustment or compromise, including such counsel, shall be borne by Supplier. Client may elect to participate, with counsel of its choosing and at its own expense, in a claim being defended by Supplier. If Supplier does not diligently pursue the defense, settlement, adjustment or compromise of such claim, Client shall have the right to settle such claim; provided, however, that Client may not effect the settlement, adjustment or compromise of such claim without the written consent of Supplier, which consent

shall not be unreasonably withheld. The non-controlling party shall reasonably cooperate with the controlling party's request in connection with the defense of any such claim.

10.2In the event of any such action for infringement of an Enforceable Intellectual Property Right Supplier will, with the consent of Client: (a) obtain for Client or Supplier the right to use the infringing material, (b) modify the Deliverables so as to render them non-infringing and functionally equivalent, or (c) provide Client with functionally equivalent substitute Deliverables. Any remedy under this paragraph shall be undertaken at the expense of the party that furnished the infringing material.

ARTICLE 11: WARRANTIES

Supplier warrants that, at the time of delivery to Client, the Deliverables will not infringe any Enforceable Intellectual Property Right of any third party. Supplier makes no warranty with respect to third party rights in any materials furnished to Supplier by Client. In addition, Supplier warrants that all Services will be performed and all Deliverables will be provided: (i) in a timely and professional manner by appropriately skilled personnel; (ii) in a manner that conforms to high standards for quality in the field of energy efficiency; and (iii) in compliance with any and all applicable laws or regulations, including, without limitation, the Order, and in a manner that does not violate any such laws or regulation.

Supplier further warrants that any and all Deliverables (with respect to tangible property) created and/or delivered by Supplier under this Agreement or the Statement of Work shall be free from defects in material and workmanship. In addition to Supplier's warranties set forth in this Agreement, (i) Supplier hereby assigns to Client any and all warranties provided to Supplier by any manufacturer or seller of the Deliverables or any components thereof and (ii) Supplier shall take all steps necessary to pass through any third party warranties provided in connection with the Project, Services or Deliverables.

EXCEPT AS EXPRESSLY SET FORTH IN THIS AGREEMENT, SUPPLIER DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES, CONDITIONS OR REPRESENTATIONS INCLUDING, WITHOUT LIMITATION, (I) IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, (II) WARRANTIES OF TITLE AND AGAINST INFRINGEMENT AND (III) WARRANTIES ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE. TO THE EXTENT ANY IMPLIED WARRANTY CANNOT BE EXCLUDED, SUCH WARRANTY IS LIMITED IN DURATION TO THE EXPRESS WARRANTY PERIOD.

ARTICLE 12: INSURANCE

Without limiting the scope or extent of the protection afforded Client or the liabilities assumed by Supplier herein, Supplier and any subcontractors shall obtain and maintain in force for the entire life of this Agreement the following insurance and name Client Corporation, its subsidiary and affiliates as additional insured on primary and non-contributory basis and include a severability of interest provision:

(A) Commercial General Liability insurance on the premises and Services covered by this Agreement and specifically including, without limitation, contractual liability insurance to cover liability assumed by Supplier with combined single limits, per accident, of not less $1,000,000 for bodily injury, including death and property damage.

(B) Worker's Compensation insurance with statutory limits and employer's liability insurance with limits of not less than $500,000.

(C) Comprehensive Auto Liability insurance which has minimum combined single limits for bodily injury and property damage of $1,000,000 per accident. The Comprehensive Auto Liability policy shall include owned and blanket non-owned and hired coverage.

(D) Commercial Umbrella Liability insurance with limits of not less than $1,000,000 per occurrence. Such umbrella shall be excess over all other coverage required in this section, except Worker's Compensation.

(E) Professional Liability insurance with limits of not less than $1,000,000.

Supplier shall require their insurance carriers, with respect to all insurance policies, to waive all rights of subrogation against Client, its directors, officers, agents and employees, and Supplier shall indemnify Client against any loss or expense, including reasonable attorneys' fees, resulting from the failure to obtain such waiver.

Supplier shall, before the commencement of any Services, furnish Client with a certificate from an insurance carrier acceptable to Client stating that policies of insurance carrier acceptable to Client have been issued by it to Supplier and any subcontractors providing for the insurance listed above and that such policies are in force. All such certificate(s) shall state that the insurance carrier(s) will give Client thirty (30) days prior written notice (by first class mail) of any cancellation or material change in such policies, addressed to Client, Attention: .

ARTICLE 13: INDEMNITY

13.1 Both parties shall defend, indemnify and save harmless the other party, its parent, affiliates and subsidiaries, and their respective directors, officers and employees, from and against any and all claims, demands, losses, damages, attorney fees and expenses caused by or resulting from any act or omission of Supplier, its agents, employees, or subcontractors, including consultants, arising out of or in connection with the Services to the fullest extent permitted by law: (i) for bodily injuries, including death, to any person, including, but not limited to, third parties, employees of Client, Supplier or subcontractor and their respective dependents or personal representatives; (ii) for illness and disease to any person including, but not limited to, third parties, employees of Client, Supplier or subcontractor and their respective dependents or personal representatives; (iii) for personal injury, including, but not limited to, libel, slander, defamation or injury arising from the violation of any individual right protected by any Federal or State law, to any person including, but not limited to, third parties, employees of Client, Supplier or subcontractor and their respective dependents or personal representatives; (iv) for damage to both personal and real property, including contamination of air, soil and water of Client, as well as any other entity or person, including adjoining, adjacent, or nearby property, buildings, driveways, walks, yards, fences and livestock, including the loss of use thereof sustained by any person or entity; and (v) for liability arising out of or by virtue of any law, Federal or State, whether statutory or common law, or any ordinance, regulation or rule of any public body or corporation, whether created or existing under and by virtue of any Federal or State law under which Client, Supplier or subcontractor is or may be alleged to be liable or responsible by virtue of ownership, control, action or failure to take action, in connection with the Services.

13.2 Supplier shall not be obligated to indemnify Client against any liability, losses, claims, damages, costs and expenses arising from Client's sole negligence.

13.3 In addition to and without limiting the indemnification provided under paragraph 13.1, Supplier agrees to indemnify and save harmless against any liability for any and all federal, state and local withholding taxes, penalties and interest (including, but not limited to, any amount paid in professional fees related to such taxes, penalties and interest) with respect to:

(a) Supplier's employees provided in connection with the Services rendered under this Agreement; and

(b) Independent contractors hired by Supplier and provided in connection with the Services rendered under this Agreement, even if such independent contractors are determined by the Internal Revenue Service or state or local taxing authority to be employees of the Client for withholding tax purposes.

13.4 Supplier shall conduct and control, through counsel of its choosing, the defense, settlement, adjustment or compromise of any claim covered by this Article 13. Supplier may effect the settlement, adjustment or compromise of any such claim without the written consent of Client so long as Client is indemnified in full and is not required to admit any culpability or accept any restrictions on its future operations. The expense of any such defense, settlement, adjustment or compromise, including such counsel, shall be borne by Supplier. Client may elect to participate, with counsel of its choosing and at its own expense, in a claim being defended by Supplier. If Supplier does not diligently pursue the defense, settlement, adjustment or compromise of such claim, Client shall have the right to settle such claim; provided, however, that Client may not effect the settlement, adjustment or compromise of such claim without the written consent of Supplier, which consent shall not be unreasonably withheld. The non-controlling party shall reasonably cooperate with the controlling party's request in connection with the defense of any such claim.

ARTICLE 14: INDEPENDENT CONTRACTORS

Supplier and Client shall at all times be independent parties. Neither party is an employee, joint venturer, agent, or partner of the other; neither party is authorized to assume or create any obligations or liabilities, express or implied, on behalf of or in the name of the other. The employees, methods, facilities and equipment of each party shall at all times be under the exclusive direction and control of that party.

ARTICLE 15: ASSIGNMENT

Supplier may not assign any rights or delegate any obligations created by this Agreement without the prior written consent of Client. Client may not assign any rights or delegate any obligations created by this Agreement without the prior written consent of Supplier, which consent shall not be unreasonably withheld. Notwithstanding the foregoing, each party shall have the right to assign this Agreement to an Affiliate. "Affiliate(s)" means any entity that directly, or indirectly through one or more intermediaries, controls or is controlled by, or is under common control with, a party. Each party shall have the right to disclose Deliverables to Affiliate(s) and allow the use of the Deliverables by Affiliate(s) under conditions of confidentiality. Each party shall have the right to assign its rights under this Agreement, in whole or in part, to Affiliate(s); provided that the Affiliate(s) to whom such rights are assigned assume the duties of such party. Any assignment in violation of this Agreement is void. This Agreement shall be binding upon the successors, legal representatives and permitted assigns of the parties.

ARTICLE 16: FORCE MAJEURE

Neither party shall be considered in default in the performance of any obligation hereunder to the extent that the performance of such obligation is prevented or delayed by a Force Majeure Event, which is defined to include a fire, flood, explosion, strike, war, insurrection, embargo, government requirement, act of civil or military authority, act of God, or any similar event, occurrence or condition which is not caused, in whole or in part, by that party, and which is beyond the reasonable control of that party. The parties shall take all reasonable action to minimize the effects of a Force Majeure Event. If a Force Majeure Event prevents or delays the performance of a party for thirty (30) days, the other party shall thereafter have the right to terminate each affected Project upon written notice at any time before such performance resumes.

ARTICLE 17: SEVERABILITY

If any provision of this Agreement is found invalid or unenforceable by a court of law or an arbitration panel, the remainder of this Agreement shall continue in full force and effect.

ARTICLE 18: RESERVATION OF RIGHTS

A delay or failure in enforcing any right or remedy afforded hereunder or by law shall not prejudice or operate to waive that right or remedy or any other right or remedy, whether of a similar or different character.

ARTICLE 19: ENTIRE AGREEMENT

This Agreement, together with the Statement of Work executed by the parties, constitutes the entire agreement of the parties, superseding all prior agreements and understandings as to the subject matter herein. No modification or waiver of the provisions of this Agreement shall be valid or binding unless contained in a written document that is signed by both parties. Notwithstanding any course of dealings of the parties at any time, no purchase order, invoice or similar document shall be construed to modify any of the terms of this Agreement, unless the document (a) is signed by Supplier and Client and (b) expressly refers to this Article 19 and to all provisions of this Agreement that the parties intend to modify by such document.

ARTICLE 20: NEGOTIATED TERMS

The provisions of this Agreement are the result of negotiations between Client and Supplier. Accordingly, this Agreement shall not be construed in favor of or against either party by reason of the extent to which the party or any of its professional advisors participated in its preparation.

ARTICLE 21: HEADINGS

The headings used in this Agreement are intended for convenience only. They are not a part of the written understanding between the parties, and they shall not affect the construction and interpretation of this Agreement.

ARTICLE 22: COUNTERPARTS

This Agreement may be executed in two or more counterparts, each of which shall be considered an original hereof but all of which together shall constitute one agreement.

ARTICLE 23: NOTICES

Notices hereunder may be given by any means reasonably calculated to timely apprise the other party of the subject matter thereof and no notice shall be deemed deficient if in writing, or promptly confirmed in writing, and personally delivered, by express courier, or mailed first-class, postage prepaid, or sent by electronic mail or facsimile. Notice shall be deemed given on (i) the date of delivery or refusal in the case of personal delivery, (ii) the delivery or refusal date, as specified on the return receipt, in the case of over-night courier, express courier, or registered or certified mail or (iii) when received in the case of an e-mail or facsimile.

TO SUPPLIER:
Opinion Dynamics Corporation
130 Turner St.
Waltham, MA 02453

TO CLIENT:

Either party may from time to time change the individual(s) to receive notices under this section and its address for notification purposes by giving the other party prior written notice of the new individual(s) and address and the date upon which the change will become effective.

ARTICLE 24: ENGAGEMENT OF SUBCONTRACTORS AND CONSULTANTS

24.1 Supplier shall not delegate or subcontract any of its obligations under this Agreement, or engage consultants, without Client's prior written approval. Client shall have the right to approve or disapprove the use of proposed subcontractors or consultants not identified in the Statement of Work in its sole discretion. Subcontractors and consultants will be engaged subject to all applicable terms and conditions of this Agreement. Approved subcontractors and consultants shall bill Supplier directly for their Services, it being understood that such charges are considered as part of the fee due Supplier pursuant to the Statement of Work. Client shall have the sole right to approve the terms of any agreements between Supplier and its consultants or subcontractors providing Services hereunder and shall be provided a fully executed copy of any such agreement.

24.2 Supplier shall remain responsible for obligations, services and functions performed by subcontractors and consultants to the same extent as if such obligations, services and functions were performed by Supplier's employees and for purposes of this Agreement such work shall be deemed work performed by Supplier. Supplier shall be Client's sole point of contact regarding the Services, including with respect to payment.

24.3 Client shall have the right to direct Supplier to replace any subcontractor or consultant if the subcontractor's or consultant's performance is materially deficient, good faith doubts exist concerning the subcontractor's or consultant's ability to render future performance because of changes in the subcontractor's or consultant's ownership, management, financial condition, or otherwise, or there have been material misrepresentations by or concerning the subcontractor or consultant.

24.4 Supplier shall not disclose Client Confidential Information to a subcontractor or consultant unless and until such subcontractor or consultant has agreed in writing to protect the confidentiality of such Confidential Information in a manner substantially equivalent to that required of Supplier

under this Agreement.

ARTICLE 25: SURVIVAL

The provisions of Articles 6, 7, 9, 10, 11, 12, 13, 15, 17, 18, 19, 20, 21, 22, 23 and 25 shall survive any expiration, cancellation or termination of this Agreement.

ARTICLE 26: LIMITATION OF LIABILITY

IN NO EVENT WILL EITHER PARTY BE LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR COVER OR FOR INCIDENTAL, SPECIAL, CONSEQUENTIAL (INCLUDING LOSS OR CORRUPTION OF DATA OR LOSS OF REVENUE, SAVINGS OR PROFITS) OR EXEMPLARY DAMAGES, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE PRICING REFLECTS THIS ALLOCATION OF RISKS AND LIMITATION OF LIABILITY BETWEEN THE PARTIES.

THE AGGREGATE LIABILITY OF SUPPLIER AND, IF APPLICABLE, ITS AFFILIATES, AND THEIR RESPECTIVE OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR OTHER REPRESENTATIVES, ARISING IN ANY WAY IN CONNECTION WITH THIS AGREEMENT—WHETHER UNDER CONTRACT LAW, TORT LAW, WARRANTY OR OTHERWISE—SHALL NOT EXCEED THE TOTAL AMOUNT PAID BY CLIENT TO SUPPLIER HEREUNDER.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their authorized representatives, to be effective as of the Effective Date above.

CLIENT		**SUPPLIER**	
By:	_____	By:	_____
	Authorized Signature		Authorized Signature
	_____		_____
	Name		Name
	_____		_____
	Title		Title
	_____		_____
	Date		Date

APPENDIX D. IN-DEPTH TEAM QUALIFICATIONS

Below, we provide in-depth descriptions of our team's most relevant, recent experience in the areas of portfolio evaluation, TRM development and maintenance, and market potential studies.

ENERGY EFFICIENCY PORTFOLIO EVALUATION QUALIFICATIONS

Dominion Energy South Carolina: 2010–Present Energy Efficiency Portfolio Evaluation

Opinion Dynamics has been conducting annual process, impact, and market evaluations for Dominion Energy South Carolina's (DESC) electric and gas DSM programs since 2010. The portfolio includes energy efficiency and demand-response programs. The programs are aimed at residential and commercial customers and include resource acquisition, educational, and behavioral components. The effort includes annual evaluation planning and management, coordination with a statewide regulatory advisory group, TRM review, market research, consumption analyses, on-site data collection, NTG analyses, measure verification, and engineering analyses. Each year, the evaluation activities are modified to reflect the current program and market information needs.

This is an ongoing engagement with DESC, and we are contracted to continue these annual evaluations until 2025. This project has a perfect track record of meeting, and often exceeding, every annual deliverable deadline for reporting to the South Carolina Office of Regulatory Affairs. In addition, this project has a perfect track record of coming under annual budget targets every year for the past 14 years.

As part of this engagement, Opinion Dynamics is providing the following related research objectives and methods:

- **Annual Program Impact and Process Evaluations**: Core to this engagement is developing an annual EM&V report and completing all associated evaluation activities. Project deliverables include an annual report documenting energy and demand savings attributable to DESC's portfolio of energy efficiency program impacts, including an examination of net effects (free ridership and spillover) and actionable recommendations for continuous program performance improvement derived from process research activities. Impact evaluation activities include engineering desk reviews, statistical analyses, site M&V, in-field and document-based verification activities, and periodic updates to net-to-gross factors for key end-uses and programs.
- **Stakeholder Engagement**: our team meets with the DESC stakeholder advisory group on a quarterly basis to share plans for evaluation and results, present evaluation and research results, and facilitate discussion among the group to identify what is going well and what needs improvement from both a program design and implementation and evaluation perspective.
- **New and Expanding Program Design**: Over the last decade, we have partnered with DESC program staff to advise on key design and implementation strategies as DESC grows existing programs and adds new offerings to its portfolio. For example, DESC expanded its Home Energy Check-Up program to offer weatherization measures to customers that would benefit the most. Our consultants advised DESC program and implementation staff on best practices for marketing, data tracking, and customer enrollment while also providing the energy and demand savings values for the new offering. We also engaged and coordinated with a statewide advisory group on this offering, as it was intended to address the advisory group's concern that the portfolio should be doing more for low- to moderate-income customers. Further, DESC created new programs in 2021 targeting the multifamily market and a Strategic Energy Management program targeting commercial customers. In both cases, we advised

DESC on key aspects of the application process, marketing strategies, data tracking, and energy savings values to help them launch these new initiatives.

- **TRM Support:** See discussion in the "Additional TRM Qualifications" section below.
- **Market Characterization Studies**: In 2011, Opinion Dynamics conducted a comprehensive baseline study to gather equipment penetration and saturation data, detailed information regarding key building and end-use equipment characteristics (e.g., type/configuration, efficiencies, fuel, vintage, occupancy/operating schedules), and customer demographics for residential customer segments. These data were developed to inform program planning, understand market characteristics, and establish baselines against which future market effects could be assessed. This study was conducted again in 2013, 2017, and 2019. The most recent market data served as key inputs into DESC's latest potential study.

Duke Energy: Residential and Non-Residential Portfolio Evaluation and PJM FCM M&V

Opinion Dynamics is one of Duke Energy's evaluation partners, tasked with the evaluation of several residential and non-residential energy efficiency and demand response programs throughout the utility's service territory. Opinion Dynamics has conducted multiple evaluations of Duke Energy's programs. Programs evaluated to date include residential lighting (several program designs), residential assessments, appliance recycling, low income (several program designs), small business energy efficiency and demand response, commercial buildings behavioral modification, and non-residential prescriptive. Evaluations generally include process as well as gross and net impact analysis. We have used a variety of research and analytical approaches, including in-depth interviews, participant and/or non-participant surveys, market actor interviews and surveys, on-site visits, billing and other regression analysis, engineering analysis, sales data modeling, and discrete choice modeling. In the absence of available utility-specific or statewide TRMs, each of our evaluations includes an in-depth review of the program's ex ante deemed savings assumptions and recommendations for updates. We have also conducted lighting hours-of-use studies for residential and commercial customers. In the Carolinas, this work includes an active regulatory process in which Opinion Dynamics works with Duke Energy to respond to regulator data requests and questions about evaluation methodologies and results.

In addition to our evaluations of the energy efficiency programs (listed above), Opinion Dynamics has supported Duke Energy in other studies and M&V effort, including:

- **Duke Energy: Low- and Moderate-Income Study:** Opinion Dynamics was retained by Duke Energy to assess the reach of its residential energy efficiency program portfolio among low- and moderate-income (LMI) populations and the impact of program participation on alleviating energy burden and other challenges among this population. As part of the study, we worked to (1) characterize LMI customer participation in Duke Energy's residential energy efficiency programs, (2) compare their participation rate and patterns to that of non-LMI customers, (3) identify LMI customer attributes that predict participation, (4) identify key drivers and barriers to participation among LMI customers, (5) assess the impact of participation on ability to pay energy bills on time, and 6) recommend strategies to cost-effectively increase LMI customer participation through programmatic enhancements. Our approach is built upon a mix of qualitative and quantitative research methods and a variety of data streams, including years of historical participation data, customer data, billing data, and census data, among others. This study effectively combined quantitative modeling techniques with participant and non-participant research to assess drivers of and barriers to LMI customer participation and to quantify non-energy impacts resulting from LMI customer participation. Further, the study supplemented this quantitative assessment of LMI customer engagement with powerful qualitative insights in the form of case studies that add color and texture and help illuminate LMI participants' life circumstances, their energy-using systems, energy affordability, ability to stay on top of their energy bills while being comfortable, motivations to participate in Duke Energy's energy efficiency

programs, and their experiences following program participation, including changes in energy burden, comfort, health, and other factors.

- **Duke Energy: M&V Efforts to Support Bidding of Energy-Efficient Resources into PJM Forward Capacity Markets.** Duke Energy engaged Opinion Dynamics in a multi-year effort to support bidding energy efficiency resources into PJM's forward capacity markets. Opinion Dynamics developed M&V plans and reports and conducted necessary primary data collection activities and extensive engineering analyses across the nominated residential and nonresidential programs to meet PJM's requirements as stipulated in Manual 18B. PJM accepted our M&V plans, reports, and nominations without any concerns, and all our verification activities met and exceeded the levels of rigor required by PJM.

Ameren Illinois (AIC): 2008–2024 Energy Efficiency Portfolio Evaluation

Opinion Dynamics has served as Ameren Illinois' research and evaluation partner since 2008 and is currently under contract through the evaluation of the 2024 program year.

We provide a comprehensive suite of evaluation services, including annual evaluation planning and management, program-tracking database review, quantitative and qualitative research, on-site M&V and data collection, net-to-gross research, cost-effectiveness analysis, and engineering and statistical analysis. We also provide advising services for Ameren Illinois on a regular basis, including support in program design, stakeholder engagement, evaluation methodology, and framework guidance. Additionally, we support Ameren Illinois as they consider new approaches to ensure the success of their portfolio through assistance with the design, implementation, and evaluation of pilots, as well as market studies to support future portfolio objectives.

We are regular participants in two major statewide and multi-utility Illinois forums: the Energy Efficiency Stakeholder Advisory Group, which guides energy efficiency policy, and the Illinois Technical Advisory Committee, which makes annual updates to the Illinois TRM. In both groups, our team is frequently asked to lead stakeholder discussions on subjects as diverse as evaluation studies on specific topics, how to appropriately adjust evaluation efforts to account for COVID-19, recommended approaches, and refinement of protocols for net-to-gross analysis.

Opinion Dynamics has worked with Ameren Illinois since the start of their energy efficiency portfolio in 2008 to assess how well the various program offerings were performing and how effectively they serve the needs of Ameren Illinois' electric, gas, and dual-fuel customers. As the only dual-fuel (electric and gas) program administrator in Illinois, Ameren Illinois is uniquely positioned as a program administrator in the state, and Opinion Dynamics works closely to ensure that unique position is carefully represented in our evaluation efforts. As the integrated portfolio has matured, Opinion Dynamics has utilized annual process and impact evaluations of the utility's residential and nonresidential energy efficiency programs to monitor portfolio health and performance. The programs, which provide both electric and gas savings, are comprised of a full suite of residential offerings (including low-income, retrofit, multifamily, upstream, and midstream programs), business offerings (including prescriptive, custom, small-business direct install [SBDI], retro-commissioning, and midstream programs), and pilots including virtual commissioning and market transformation programs.

Examples of specific support Opinion Dynamics has provided for Ameren Illinois include the following:

- **Societal non-energy impact (NEI) research to support annual cost-effectiveness testing and planning.** Opinion Dynamics conducted a societal NEI estimation study to quantify benefits associated with emission reduction from the Ameren Illinois energy efficiency portfolio. Benefits from both avoided electric generation and localized gas combustion were quantified. We then monetized these benefits for inclusion in cost-effectiveness testing, where

they have been recently used in Ameren Illinois's most recent energy efficiency plan filing with the Illinois Commerce Commission.

- **Net-to-gross review and research.** For Ameren Illinois' residential and nonresidential portfolios, we provide ongoing feedback on net-to-gross ratios (NTGRs) for planning purposes. This involves conducting early research efforts as well as literature reviews and stakeholder discussions. We also conduct regular retrospective net-to-gross research to inform updating NTGRs for prospective use under the Illinois evaluation framework.
- **Steam trap measure review and updates.** In conjunction with a statewide group, Opinion Dynamics led a detailed literature review and provided recommendations to Illinois utilities and stakeholders around appropriate Illinois TRM characterization for one of the portfolio's largest natural gas efficiency measures, steam trap replacement and repair. Opinion Dynamics also participated in a follow-on working group to further refine and update the measure characterization based on several of the recommendations in our initial research.
- **Multi-Year Rate Plan (MYRP) Performance Metric Evaluation.** Opinion Dynamics currently leads evaluation efforts in support of Ameren Illinois's MYRP performance metrics. As part of the performance metric 2b – Peak Load Reduction, we are working closely with Ameren Illinois to ensure flexible load resource clearing in MISO Resource Adequacy markets.
- **TRM Support:** See discussion in the "Additional TRM Qualifications" section below.

Opinion Dynamics regularly manages a large and complex evaluation budget to ensure that planned evaluation activities are completed, Ameren Illinois' needs are met, and an ad-hoc budget is available to ensure that emerging evaluation needs can be met.

In addition to meeting complex budget needs, we meet annual statutory reporting deadlines for Ameren Illinois and comply with all negotiated policy requirements for evaluation efforts, which include but are not limited to defined dates for the following:

- Annual evaluation plans (draft and final)
- Annual impact evaluation reports (draft and final)
- Annual cost-effectiveness evaluation reports (draft and final)
- Annual TRM update efforts (draft priorities lists, work papers, and review of multiple TRM drafts)

Ameren Missouri (AMO): 2019–2024 Energy Efficiency Portfolio Evaluation

Opinion Dynamics led the annual evaluation of Ameren Missouri's portfolio of energy efficiency and demand response programs for the 2019–2023 program cycle. The portfolio includes 15 energy efficiency programs across Ameren's residential, low-income, and non-residential sectors, as well as two demand response programs targeting residential and commercial customers. The project met all regulatory timelines for the delivery of evaluation plans, annual reports, and interim timelines as specified within the annual evaluation plans.

As part of this engagement, Opinion Dynamics provided a variety of program evaluation, market research, and program support activities, including:

- **Annual program evaluation**. Key activities include annual EM&V planning and the execution of the planned activities, including primary survey and on-site research, secondary research, engineering and quantitative data analysis, and reporting. The first evaluation included a comprehensive assessment of program processes and gross and net impacts for the full portfolio of programs. In subsequent years, the evaluation activities were prioritized to reflect the current program and market information needs.

- **Program planning and implementation support.** Opinion Dynamics participated in an active coordination process with the program implementation teams. As part of this effort, Opinion Dynamics provided guidance on new measures, delivery channels (including HVAC midstream channels for residential and business customers), and programs (including a newly introduced PAYS program). At the beginning of the program cycle, Opinion Dynamics conducted a comprehensive review of the implementers' program data tracking system designs to ensure that key information to support the evaluation would be collected.
- **Stakeholder engagement.** As part of this engagement, Opinion Dynamics facilitated an active statewide stakeholder process. The stakeholder group included regulatory and other governmental staff, an independent statewide auditor, and a range of interest groups. The stakeholder process included a review of key deliverables as well as multiple stakeholder meetings over the course of the program year to discuss and reach a consensus on evaluation plans, methodologies, key assumptions, and results.
- **COVID-19 market research.** In the summer of 2020, Opinion Dynamics conducted primary research with program trade allies, program participants, and the general population to provide Ameren Missouri with real-time information on the expected impacts of COVID-19 on program performance and potential ways to mitigate adverse impacts.
- **TRM Support:** See discussion in the "Additional TRM Qualifications" section below.
- **Baseline study.** In 2019, Opinion Dynamics designed and conducted a comprehensive residential and commercial baseline study, including extensive primary data collection (including surveys and on-site visits). Opinion Dynamics also collected information on barriers to program participation and developed adoption curves for key program measures and offerings (e.g., demand response programs and time-of-use rates). Both baseline data and adoption curves served as inputs into Ameren Missouri's energy efficiency potential study, conducted by our team member GDS. Results of the baseline study also informed Ameren Missouri's redesign of its residential lighting program.

ADDITIONAL TRM QUALIFICATIONS

Dominion Energy: Evaluation of Commercial and Residential Electric DSM Evaluations TRM Maintenance

Early in our EM&V engagement with DESC, Opinion Dynamics developed algorithms, input parameters, and deemed savings values for Dominion's energy efficiency measures, culminating in deemed savings tables for residential measures and the Commercial Energy Algorithm Manual (CEAM) for commercial measures. Our annual program evaluation effort includes a review of the algorithms and assumptions used to determine savings for all applicable measures to assess the need for revision. As a matter of course, Opinion Dynamics remains abreast of any revisions with respect to savings algorithms or underlying assumptions within the South Carolina Measures Database and other relevant regional resources. In addition, we review DESC program data and technical reference materials provided by the program implementation contractor, as well as applicable data from any research completed under this engagement. Based on these efforts, we recommend and implement approved revisions to the South Carolina Measures Database for prospective application in program planning and evaluation. For example:

- We conducted a comprehensive engineering review of the savings assumptions for the residential lighting program. Our engineering review found that the program often underestimated the savings from CFLs and new LEDs coming onto the market. We updated the TRM values and assumptions for the program and revisit this annually, based on shelving studies and in-store intercepts, as new LED measures are introduced, and EISA regulation increases.

- For the ENERGY STAR New Homes and Home Performance with ENERGY STAR programs, we updated the TRM with a new approach to estimating ex ante savings. We helped shift the programs from costly implementation approaches to estimate savings (i.e., modeling software) to more cost-effective approaches leveraging predictive statistical models. We mined three years of program data and conducted statistical modeling to create new deemed savings algorithms that replaced the need for contractors to run software modeling on each home to determine ex ante savings.
- We designed and implemented an on-site metering study of LED lighting products offered through the commercial program to update the TRM assumptions for hours of use. This resulted in an increase in demand savings for these measures.

PSEG Long Island: TRM Development

Opinion Dynamics managed PSEG Long Island's energy efficiency TRM for many years. In response to New York State policy changes, Opinion Dynamics worked closely with PSEG Long Island and its implementation contractors to "electrify" its TRM. In particular, TRM updates included detailed characterization of beneficial electrification measures replacing fossil fuel equipment with energy-efficient electric equipment. As an example, the updated TRM algorithms for heat pump water heaters quantify electricity impacts from measure efficiency as well as from increased electric energy consumption associated with fuel switching, ancillary HVAC impacts, and fossil fuel energy reductions. Opinion Dynamics staff submitted a paper that was accepted to the 2022 International Energy Program Evaluation Conference detailing the TRM transition and key considerations in such a transition.

Ameren Missouri Technical Resource Manual (TRM) Support

In our role as portfolio evaluator, Opinion Dynamics worked with Ameren Missouri and the implementation teams to review TRM algorithms and input assumptions and conduct targeted research to make updates to select inputs. Recent examples include lighting EULs and HVAC equivalent full-load hours. Opinion Dynamics also provides annual TRM updates to reflect evaluation results from the prior program year for key TRM parameters.

Ameren Illinois (AIC): Evaluation of Energy Efficiency Program Portfolio TRM Support

Opinion Dynamics has served as AIC's research and evaluation partner since 2008 and is currently under contract through the evaluation of the 2025 program year. We provide a comprehensive suite of evaluation services, including annual impact and process evaluations of AIC's electric and gas energy efficiency programs, evaluation research to improve the Illinois TRM and savings estimation methodologies, and advising to support program design, pilot implementation, and future portfolio planning. Specific examples of support Opinion Dynamics has provided for AIC include:

- Updates to the Illinois TRM measure for steam trap replacement and repair (the portfolio's largest gas energy efficiency measure). Opinion Dynamics conducted research and participated in a follow-on working group to further refine and update the measure characterization based on a number of the recommendations provided in our initial research.
- TRM updates from comparison of low-income weatherization billing analysis and prescriptive savings analysis. While the Illinois TRM includes prescriptive savings algorithms for weatherization methods, Opinion Dynamics conducted billing analysis for the Ameren Illinois low-income weatherization programs to explore differences between savings produced from engineering algorithms and savings observed on actual bills. This evaluation activity led to a TRM update to include correction factors to align prescriptive savings more closely with actual results.

Vermont Public Utilities Commission: Clean Heat Standard TRM Development

Opinion Dynamics developed a Vermont Clean Heat Standard Technical Reference Manual (TRM) prescribing standardized methodologies for calculating carbon reductions and clean heat credit values for residential and commercial measures that reduce the carbon impact associated with thermal end uses such as space heating, hot water heating, and cooking, among others. Opinion Dynamics developed upstream and downstream carbon intensity values for grid electricity, biofuels, and fossil fuels and worked closely with the Vermont PUC and a Technical Advisory Group of stakeholders to develop measure characterizations that balance the need for accuracy with administrative burden on the obligated parties responsible for delivering clean heat programs. Opinion Dynamic's subject matter experts and engineers gathered information from a variety of sources to support the development of measure characterizations, wherever possible using Vermont-specific data. The measure characterizations are largely algorithm-based prescriptive measures though deemed savings tables were also provided based on clearly defined input assumptions.

Pennsylvania Public Utilities Commission: Statewide Evaluator

As the Statewide Evaluator, GDS oversaw all impact and process evaluations conducted on these energy efficiency programs for the period 2009 through 2017. GDS was also responsible for the creation and management of the Pennsylvania Technical Reference Manual, including the development of algorithms, review of stakeholder or utility submitted measures on an annual basis, and editing of the final versions each year to include changes due to energy code updates or legislation. GDS refined measure assumptions to reflect the latest technical information available, focusing on the residential lighting, fuel switching, advanced controls, commercial and industrial lighting, and commercial and industrial HVAC protocols. Additionally, GDS aligned the TRM with the Uniform Methods Project protocols wherever possible to stay current with industry research. GDS held technical working groups on a regular basis to discuss changes with utilities, evaluators, and the commission staff.

Efficiency Maine Trust: All Fuel Measure Creation and Configuration

GDS was hired in 2016 to research and develop measures to be added to Efficiency Maine's commercial and industrial incentive offering program to begin the All Fuels (NG, oil, etc.) portion of the program. GDS performed algorithm design, incentive design, along with configuration and testing of the measures in the vendor database system known as Effrt. GDS also created the first Commercial and Residential TRM for Efficiency Maine.

MARKET POTENTIAL STUDY QUALIFICATIONS

Arkansas PSC: Statewide Market Potential Study

GDS completed an assessment of electric and natural gas energy efficiency potential and demand response potential for seven of the state's largest utilities to inform future program savings targets. The study included Delphi panel research to support estimates of future program participation. The GDS Team used the Arkansas TRM to develop the measure database and coordinated with the individual utilities and stakeholders to drive consensus on methodological considerations and overall outputs.

Ameren Missouri: Energy Efficiency, Demand Response, Distributed Generation, Combined Heat and Power Potential Studies

Ameren-Missouri retained GDS to develop energy efficiency, demand response, combined heat and power and distributed generation potential studies for the Company's service area. These studies will provide estimates of the

technical, economic and achievable potential for electric energy efficiency, demand response measures, combined heat and power and roof-top solar photovoltaic programs for the Company's service area. The results of these studies provide detailed information on electric energy efficiency, demand response and DG/CHP measures that are the most cost effective and have the greatest potential for the company's service area. GDS also completed the previous market potential study for Ameren Missouri in 2020, which leveraged results from a market baseline study conducted by Opinion Dynamics (see next qualification).

Ameren Missouri: Baseline Study

Opinion Dynamics conducted baseline market research in support of Ameren Missouri's 2020 market potential study, with primary responsibility for study planning, primary data collection activities (including sampling but excluding on-site visits), development of adoption curves, reporting, and project management. The study included surveys with residential and business customers and multifamily building owners/managers as well as on-site visits with residential customers, and covered a variety of current and potential offerings, including energy efficiency, demand response, TOU rates, solar PV, and electric vehicles.

Vermont Public Service Department: Statewide Energy Efficiency Potential Study

GDS was retained by the Vermont Department of Public Service (DPS) to conduct an updated assessment of the cost-effective achievable potential for electric and natural gas energy efficiency and conservation resources in the State of Vermont. As part of this assessment, GDS analyzed the partial electrification of natural gas technologies to reflect increased adoption of heat pump technologies throughout the state and impacts to both electric and natural gas utilities. Additionally, the combined impact of both electric and natural gas savings on greenhouse gas emissions was calculated using fuel-specific emission rate factors to assess the long-term environmental impacts of 20-year energy efficiency potential.

City Council Of New Orleans: Energy Efficiency Market Potential Study

This study provides an estimate of energy efficiency and demand response potential for the Entergy New Orleans (Entergy) service territory. This study was commissioned by the Council of the City of New Orleans (Council) as part of their retail regulatory oversite of electric utility services in Orleans Parish. Energy efficiency and demand response can often provide a cost-effective means of meeting customer energy or demand needs compared to traditional supply-side investments. These resources can benefit both participants and non-participants by providing lower electric bills, improving building stock, and reducing environmental emissions from power plants, such as carbon dioxide. The study provided three achievable potential scenarios for energy efficiency and two scenarios for demand response.

Cape Light Compact (CLC): Penetration, Potential, and Program Opportunity Study

Opinion Dynamics completed a baseline and potential study for Cape Light Compact. This study used extensive primary and secondary data collection to estimate penetration and saturation for all major end use equipment and to create CLC-specific assumptions for the potential model and program design support. The primary data collection activities for the residential and low-income sectors included a mail survey, a telephone survey, and in-home visits, and the primary data collection activities for the commercial & industrial sector included a telephone survey and on-site visits.

Additionally, Opinion Dynamics was re-hired to conduct the potential study for the next (2019-2021) program cycle. This "refresh" study focuses on leveraging primary data from the first study and other, secondary sources to develop robust and defensible updates to the original potential estimates. As part of this effort, our team leveraged results from a statewide residential baseline study as well as several other statewide research efforts. This project also included expanding the original potential model to include demand response measures.

New York State Energy Research and Development Authority (NYSERDA): NYSERDA Statewide Commercial Baseline and Potential Study

Opinion Dynamics led the multi-year New York State Commercial Baseline Study, consisting of a comprehensive commercial baseline study (based on 4,800 survey completes and over 800 on-site visits across 31 study segments), a commercial potential study, and four market assessments (covering heating ventilation and air conditioning, energy management systems, customer decision-making, and energy service companies). Opinion Dynamics was responsible for study planning, the development of several sampling options, primary data collection activities (excluding on-site visits), data analysis, reporting, and project management

PSEG Long Island (PSEG LI): Heat Pump Beneficial Electrification Market Research and Potential Study

Opinion Dynamics assessed the technical, economic, and achievable energy savings potential associated with the adoption of heat pump (HP) technologies in the PSEG Long Island service territory, including air source heat pumps (ductless and ducted), ground source heat pumps, heat pump water heaters, and heat pump pool heaters. Our data and analysis focused on identifying and characterizing the viable fuel-switching combinations and configurations for space and water heating to assess the energy and cost savings impacts of representative fuel-switching combinations. Heat pump adoption is contingent upon a number of technical, economic and other barriers, which vary by sector and segment. As a first step, we conducted primary and secondary research to characterize the market for HPs on Long Island, including market penetration, typical configurations in the residential and commercial sectors, market barriers, and regional trends in the cold climate heat pump market. Primary research includes in-depth interviews and focus groups with market actors including designers, HVAC contractors, plumbers, pool service companies, and HP distributors. We also leveraged multiple secondary sources including Opinion Dynamics' 2018 baseline data for PSEG Long Island residential and commercial customers, PSEG Long Island historic program participation datasets, and market research reports from the state and region. Opinion Dynamics provided these inputs and other data to be used to develop a detailed, year-over-year scripted adoption model for each HP technology-market segment and primary heating fuel combination. We reported potential market adoption under several scenarios including the baseline, a scenario offering moderate incentives for fuel-switching, and a scenario modeling the full investment needed to meet PSEG Long Island's targets for increased HP adoption under New York's electrification and carbon reduction policies.

APPENDIX E. RESUMES

ANTJE FLANDERS

Vice President

Expertise in: Project management, portfolio evaluation, impact analysis, process evaluation, attribution research, survey research, sampling, market assessments, baseline/potential studies, net-to-gross

Education:

MA, Economics, Boston University

BA, Economics, Boston University

Industry Engagement:

AESP ACEEE American Council for an Energy-Efficient Economy IEPEC

About:

Antje Flanders, Vice President at Opinion Dynamics, has over 20 years of experience in energy-related research, analysis, and project management. Antje has extensive experience in process and impact evaluation, net impact analysis, the development and implementation of qualitative and quantitative data collection and analysis methods, and market characterization. At Opinion Dynamics, she has managed a variety of projects in the commercial, industrial, and residential sectors, including evaluations of energy efficiency, financing, demand response, behavioral and community-based programs, as well as equipment saturation and potential studies. Antje's primary responsibilities include overseeing portfolio evaluations and other large-scale efforts, conducting technical reviews, managing evaluation and direct market research projects, maintaining client contact, and managing project budgets. She is also heavily involved in conducting net impact analysis, developing evaluation methodologies, questionnaires, and discussion guides, interpreting survey and analysis results, and writing reports.

Project Experience:

Duke Energy: Portfolio Impact and Process Evaluation. Portfolio Director.

Ameren Missouri: Energy Efficiency and Demand Response Programs Evaluation. Portfolio Director.

Ameren Illinois. C&I Portfolio Technical Advisor for annual impact and process evaluations.

New York State Energy Research and Development Authority (NYSERDA): Commercial Statewide Baseline and Potential Study. Project Director.

The Cape Light Compact: Residential and Commercial Baseline and Program Potential Study. Project Director.

Connecticut Green Bank: EM&V Framework Development. Project Director.

Papers and Presentations:

Flanders, Antje (August 2017) Financing or Incentives: Disentangling Attribution. Presented at the International Energy Program Evaluation Conference. Baltimore, Maryland.

Lane, C. and Flanders, A. (April 2017) National Grid Rhode Island: Piloting Wireless Alternatives. Presented at Peak Load Management Alliance Conference. Nashville, Tennessee.

Flanders, Antje (August 2015) 101 Sources of Spillover: An Analysis of Unclaimed Savings at the Portfolio Level. Presented at the International Energy Program Evaluation Conference. Long Beach, California.

Flanders, Antje (June 2013) ComEd Usage and Waste Analysis Findings. Statewide Advisory Group. Springfield, IL.

Flanders, Antje (May 2013) Energy Usage and Waste Analysis. Webinar.

Siems, Antje (August 2009) Prospective Benefits Analysis for NYSERDA's Commercial New Construction Program. Presented at the International Energy Program Evaluation Conference. Portland, Oregon.

Past Experience:

Associate, Environmental Research Area. Abt Associates, Inc. Cambridge, Massachusetts. 1995–2007.

ALAN ELLIOTT

Director

Expertise in: Portfolio management, process evaluation, impact evaluation & net-to-gross, market research, pilot assessment and development support, disadvantaged communities research.

Education:

MA, International Management, UCSD

BA, Comparative Politics & Cultural Anthropology, UCSC

Industry Engagement:

AESP ACEEE American Council for an Energy-Efficient Economy PLMA™ Load Management Leadership

About:

Alan Elliott, Director at Opinion Dynamics, brings an extensive background in energy efficiency program design and evaluation, project management, and market research. Alan has evaluated the full gamut of residential and non-residential energy efficiency programs for clients across the country and offers insights into best practices for designing and implementing these types of programs. Alan also frequently advises clients with the development of innovative pilots and programs, providing early assessments, supporting market research, and periodic evaluation. He is highly experienced in managing data science and engineering-based impact evaluations and is well-versed in net-to-gross methods. He is an expert at all aspects of process evaluations, including reviewing and developing PTLMs and program processes, designing and executing primary research with customers and market actors, and delivering timely and targeted recommendations for program improvement. Alan is a highly organized and effective project and people manager who has served as the project director for several large, multiyear portfolios of work, including the entire Dominion Energy South Carolina portfolio evaluation and the residential sectors of Ameren Illinois' and Interstate Power and Light's portfolio evaluations. He has also served as the manager or director of a plethora of specialty market research and evaluation projects, with a particular focus on disadvantaged communities and cutting-edge pilots. These include, for example, small business and low-income customer needs assessments, community partnerships and diverse workforce development, local government programs, an energy efficiency financing pilot, and a utility wildfire safety app.

Project Experience:

Ameren Illinois Company (AIC) Residential Energy Efficiency Program Portfolio Evaluation. Project Director.

Dominion Energy South Carolina: Energy Efficiency Portfolio Evaluation. Project Director.

Interstate Power and Light (IPL): Residential Energy Efficiency Program Portfolio Evaluation. Project Director.

Ameren Illinois Company (AIC) Low-Income Needs Assessment (LINA). Project Director.

Ameren Illinois Company (AIC) Market Development Initiative Assessment. Project Director.

Dominion Energy South Carolina (DESC): Low Income and Small Business Customer Market Study. Project Director.

Pacific Gas and Electric (PG&E): Commercial Lighting Design Pilot Market Assessment. Project Manager.

California Public Utilities Commission (CPUC): Local Energy Efficiency Financing Programs Impact and Cost-effectiveness Study. Project Manager.

PSEG Long Island: Energy Efficient Products Program. Project Manager.

Sacramento Municipal Utility District (SMUD): Energy Assistance Program Rate Low-Income Weatherization Pilots Study. Project Manager.

South Jersey Gas (SJG): Residential Retrofit Weatherization. Project Manager.

Papers and Presentations:

Elliott, Alan and Campbell, M. (August 2020) Can Ratepayer-funded Financing Transform Access to Energy Efficient Home Upgrades? Presented at the 2020 ACEEE Summer Study on Energy Efficiency in Buildings. Virtual.

Tsui, Iris and Elliott, A. (February 2020) Moving the needle forward with advanced measurement and verification: a case study of "real-time" commercial program evaluation. Presented at the 2020 AESP 30th Annual Conference & Expo. Anaheim, CA.

Elliott, Alan (May 2018) Regional Finance Attribution and Cost-Effectiveness Study. Presented at the ACEEE Energy Efficiency Finance Forum. Tarrytown, New York.

Elliott, A. and Arnold, H. (August 2017) Getting the Right Ingredients: A Framework for Enhancing ME&O Evaluation. Presented at International Energy Program Evaluation Conference. Baltimore, Maryland.

Elliott, A. and Patterson, O. (August 2015) The Matchmaker: Methods for Predicting Participation and Finding the Best Demand Response Programs for Customers. Presented at International Energy Program Evaluation Conference. Long Beach, California.

Elliott, Alan (November 2013) Anthropological Theory and Practice: Why We Need It to Understand Behavior. Presented at the Behavior, Energy & Climate Change Conference. Sacramento, California.

Past Experience:

Assistant Evaluation Specialist. evalû. San Diego, California. 2012.

Independent Consultant. Ballast Point Brewing and Spirits. San Diego, California. 2012.

Program Evaluator. ChildFund International. Colombo, Sri Lanka. 2011.

EVAN TINCKNELL

Principal Consultant, Opinion Dynamics

Expertise in: Residential program evaluation, transportation electrification and managed charging research, market transformation evaluation, education-based and behavioral programs, decarbonization, survey design and fielding, quantitative data analysis, discrete choice/conjoint analysis, net impact analysis, process analysis, residential lighting programs, low-income and equity-focused programs

Education:

BA, Psychology & Environmental Studies, Oberlin College

About:

Evan Tincknell, Principal Consultant at Opinion Dynamics, has ten years of experience conducting residential program evaluations and market research focused on market transformation, midstream, and education-based programs. He brings strong methodological expertise to qualitative and quantitative research aimed at gauging market conditions and customer feedback to optimize program design and implementation. Evan has extensive experience evaluating residential program offerings, including gross impacts, net-to-gross/attribution, and process-oriented research relying on combinations of surveys, interviews, engineering analysis, regression modeling, and conjoint analysis. He is the Project Manager of the Ameren Illinois Company's (AIC's) Residential Portfolio Evaluation, which spans upstream, downstream, education-based, and income-qualified programs. He has also led a multiyear evaluation of AIC's Midstream HVAC, Efficient Choice Tool, and Market Transformation Initiatives, developing and executing novel approaches to quantifying savings and identifying opportunities to maximize the impacts of such programs. Evan has also designed and executed several studies centered on understanding customer preferences and market actor perspectives to help clients like Portland General Electric, Puget Sound Energy, and Pacific Gas and Electric Company design and scale their EV-managed charging programs and to inform California Investor-Owned Utility (CA IOU) HVAC and water heating electrification efforts.

Project Experience:

Ameren Illinois Company (AIC): Residential Upstream, Downstream, Education-Based, and Income-Qualified Program Impacts and Process Evaluations. Project Manager.

Ameren Illinois Company (AIC): Residential Midstream HVAC and Heat Pump Water Heating Impacts, Process, and Market Effects Evaluation. Project Manager.

Duke Energy: Residential and Commercial Upstream, Downstream, and Low-Income Program Impact and Process Evaluations. Project Manager.

Southern California Edison: California Fuel Substitution Market Study on Impact of Incentives and Infrastructure Cost for Equity and Market Rate Customer Segments. Project Manager.

Pacific Gas and Electric (PG&E): EV Automated Demand Response (ADR) Study. Customer Research and Conjoint Survey Lead.

Ameren Illinois Company (AIC): Luminaire Level Lighting Controls (LLLC) Market Transformation Pilot Evaluation. Project Manager.

California Public Utilities Commission (CPUC): California Statewide On-Bill Financing Impact Evaluation Gap Analysis. Project Manager.

Dominion Energy South Carolina: Online Store Evaluation. Project Manager.

Ameren Missouri: Pay as You Save and Lighting Program Evaluations. Project Manager.

Papers and Presentations:

Tincknell, E., Peterson, J., Frantz, C., Shammin, R., Tess, M., and Myers, N. (December 2015) Electricity and Water Conservation on College and University Campuses: Quantifying Relationships between Behavior, Conservation Strategies and Psychological Metrics. PLoS ONE

Tincknell, E., Frantz, C., Petersen, J., Shammin, R., and Smith, K. (February 2014) Re-connecting people to their resources: ambient feedback technology promotes pro-environmental attitudinal and behavioral change. Society for Personality and Social Psychology (SPSP) Fifteenth Annual Meeting. Austin, Texas.

Tincknell, E., Canning, C., Frantz, C., and Peterson, J. (January 2013) Animated displays of resource use designed to instill empathy promote change in perceived scope of responsibility and causality. Society for Personality and Social Psychology (SPSP) Fourteenth Annual Meeting. New Orleans, Louisiana.

TYLER SELLNER

Principal Consultant

Expertise in: Nonresidential portfolio evaluation, energy efficiency program evaluation, impact analysis, market research, advisory, benefit-cost analysis, data management & analysis, in-depth interviewing

Education:

MS, Business & Analytics, UMass Amherst

BS, Environmental Science, UMass Amherst

Industry Engagement:

About:

Tyler Sellner, Principal Consultant at Opinion Dynamics, uses the expertise he has gained as a project manager and lead analyst for several nonresidential portfolio impact and process evaluations to help clients understand the impact their programs create and how effectively they are operating. Tyler has served as the Business Portfolio Lead of the Ameren Illinois Company's (AIC's) Energy Efficiency Portfolio for several years, managing and overseeing the impact evaluation activities of downstream and midstream prescriptive, custom, and modeling-based virtual commissioning programs. He also oversees all process evaluation activities for the portfolio, including comprehensive evaluations of the Custom and Small Business programs to inform program design and implementation. Tyler's contributions to AIC's business portfolio have helped inform the analytical and reporting approach to meet needs of the evolving regulatory landscape. Additionally, Tyler supports Interstate Power and Light's Nonresidential Custom Solutions Program, including Custom Rebate, Feasibility Study, Retro-commissioning, Industrial New Construction, and Strategic Energy Management channels. As Lead Analyst of these channels, Tyler conducts primary data collection and extrapolates impact analysis results for a sample of projects to the population.

In addition to his nonresidential portfolio evaluation experience, Tyler has led impact benefit-cost analysis activities for several portfolios, helping clients to understand the financial viability and impact of their energy efficiency investments, including electrification. In his work for AIC and PSEG Long Island, Tyler led benefit-cost modeling activities, as well as the development of model inputs for all programs across the portfolios. In addition, Tyler assisted with the estimation of jobs, income, and industry output resulting from the respective portfolios. Tyler also helped to adapt the cost-effectiveness screening practices for both clients to capture the additional costs and benefits associated with electrification technologies. Lastly, Tyler has served as a project manager on the Measurement, Evaluation, and Learning team for the New York State Energy and Research Development Authority's Clean Transportation Prizes project, where he has overseen data collection activities and the development of a tool to estimate emissions reduction impacts across a variety of transportation electrification solutions.

Project Experience:

Ameren Illinois Company (AIC): Energy Efficiency Portfolio. Business Portfolio Lead.

Interstate Power & Light (IPL): Nonresidential Custom Solutions Program. Lead Analyst.

Ameren Illinois Company (AIC): Cost Effectiveness & Economic Impact Analyses. Project Manager.

PSEG Long Island: Cost Effectiveness and Long-Range Planning Analyses. Analyst.

PSEG Long Island: Heat Pump Potential Study. Lead Analyst.

Ameren Missouri: Multifamily Market Rate and Income-Eligible Programs. Project Manager.

Papers and Presentations:

Wilson, Jayden, and Tyler Sellner. 2022. Magnitude Matters: Re-evaluating Traditional Cost-effectiveness Practices for Electrification. The International Energy Program Evaluation conference.

Past Experience:

Research Analyst. Power Advisory, LLC. Concord, Massachusetts. 2018.

Sustainability Fellow. University of Massachusetts Amherst. Amherst, Massachusetts. 2016–2017.

Environmental Scientist Intern. Roux Associates, Inc. Woburn, Massachusetts. 2016.

KEVIN KETCHMAN, PHD, CEM

Lead Engineer

Expertise in: Lifecycle analysis, system level analysis, decarbonization, technical reference manual management, building energy disaggregation, energy efficiency program evaluation, residential and commercial impact evaluations, data collection tool development, small commercial buildings, assessment of pedagogical approaches, codes and standards evaluation

Education:

PhD, Civil Engineering, University of Pittsburgh

BS, Civil Engineering, Pennsylvania State University

Certified Energy Manager

Industry Engagement:

Association of Energy Engineers

ASHRAE

ACEEE American Council for an Energy-Efficient Economy

About:

Dr. Kevin Ketchman has over ten years of experience in energy efficiency, building science, and analysis of GHG emissions. In particular, Kevin has led or provided technical support for impact evaluations for large commercial portfolios, including for Ameren Illinois, Interstate Power & Light, Dominion Energy South Carolina, and Ameren Missouri. Each portfolio offers prescriptive and custom programs requiring different skills and knowledge. In Illinois, Kevin leads a collaborative team of Opinion Dynamics engineers who evaluate the downstream and midstream Prescriptive programs. These programs offer a wide range of measures across end-uses and technologies, including heat pumps in HVAC and hot water, commercial kitchen cooking equipment, refrigeration, compressed air, and variable speed drives on process equipment. Kevin reemploys advanced methods for standardizing workbooks for the energy efficiency program design and a jurisdiction's TRM requirements. This includes the adoption of decarbonization calculations, which are becoming increasingly important to clients' portfolios and reporting requirements. Recent policy changes in Illinois have enabled electrification and fuel switching to move forward, increasing the complexity of evaluation. Kevin's experience working with the Public Service Enterprise Group Incorporated Long Island (PSEG-LI) at a time when the New York Climate Leadership and Community Protection Act was enacted and New Efficiency: New York report supported electrification enabled him to swiftly redesign evaluation workbooks and methods to ensure a high-quality evaluation with meaningful recommendations for Ameren.

Project Experience:

Ameren Illinois Company (AIC): Commercial Sector Impact Analysis. Engineering Lead.

Interstate Power & Light (IPL): Nonresidential Portolfio Impact Analysis. Engineering Lead.

Dominion Energy South Carolina (DESC): Commercial Sector Impact Analysis: Technical Advisor.

Ameren Missouri (AMO): Commercial Sector Impact Analysis. Technical Advisor.

Public Service Enterprise Group Long Island (PSEG LI): Residential and Commercial Efficiency Program Evaluation. Engineering Lead.

New York State Energy Research and Development Authority (NYSERDA): Clean Energy Communities, Carbon and Energy Impact Analysis. Engineering Lead.

New York State Energy Research and Development Authority (NYSERDA): Clean Transportation Projects, Greenhouse Gas and Criteria Pollutant Analysis. Engineering Lead.

Consolidated Edison (ConEd): Multifamily Program Impact Evaluation. Engineering Lead

Consolidated Edison (ConEd): Virtual Inspection Process Evaluation. Engineering Lead

Papers and Presentations:

Ketchman, K., Fritz-Mauer, J. and Montijo, K. (October 2022) "Electrifying TRMs at the Convergence of Decarbonization Policy, Program Delivery, and Evaluation." 2022 International Energy Program Evaluation Conference. San Diego, California.

Ketchman, K. and Drury, M. (August 2019) "Whether or Not Weather Matters - Implications of Actual Weather on Energy Efficiency Program Outcomes." 2019 International Energy Program Evaluation Conference. Denver, Colorado.

Ketchman, K., Khanna, V., and Bilec., M. (October 2018) "Small Business Electricity Disaggregation: Where Can We Improve? Towards Increased Transparency of Appliance Modal Parameters." Energy and Buildings, 176, 194-202.

Ketchman, K., Parrish, K., Khanna, V., and Bilec., M. (October 2018) "Synergizing Disparate Component-level Energy Resources into a Single Whole Building Tool to Support Energy Conservation Action in Small Commercial Buildings." Energy and Buildings, 176, 325-332.

Ketchman, K., Khanna, V., Riley, D., and Bilec., M. (July 2018) "Survey of Homeowners' Motivations for the Adoption of Energy Efficiency Measures: Evaluating a Holistic Energy Assessment Program." ASCE Journal of Architectural Engineering, 24(4), 04018024.

Ketchman, K., Dancz, C., Burke, R., Parrish, K., Landis, A., and Bilec., M. (January 2017) "Sustainable Engineering Cognitive Outcomes: Examining Different Approaches for Curriculum Integration." ASCE Journal of Professional Issues in Engineering Education and Practice, 143 (3).

Ketchman, K., Khanna, V., Riley, D., and Bilec., M. (August 2016) Assessment of a Holistic Energy Assessment Program from a Survey of Participants. Presented at the American Council for an Energy-Efficient Economy Summer Study. Pacific Grove, California.

Ketchman, K. and Bilec., M. (August 2013) "Quantification of Particulate Matter from Commercial Building Excavation Activities Using Lifecycle Approach." ASCE Journal of Construction Engineering and Management. 139, A4013007.

Past Experience:

Independent Contractor with Conservation Consultants, Inc., Pittsburgh, PA

Independent Contractor with The Hill Group., Carnegie, PA

JEFFREY HUBER

PRINCIPAL, CEM, CMVP, BESA

GDS Associates, Inc.
ENGINEERS & CONSULTANTS

CONTACT

770-425-8100

Jeffrey.huber@gdsassociates.com

gdsassociates.com

Marietta GA 30067

EDUCATION

MA in Anthropology, Minor in Statistics, University of Tennessee, 2004

BA in Criminology & Anthropology, University of Florida, 2001

PROFESSIONAL AFFILIATIONS/ CERTIFICATIONS

Certified Energy Manager (CEM)

Certified Measurement & Verification Professional (CMVP)

Building Energy Simulation Analyst (BESA)

EXPERTISE

Statistical Analyses

DSM Potential Assessments

Program Planning

Market Research

Evaluation & Measurement Verification

PROFESSIONAL EXPERIENCE

GDS Associates, Inc., Marietta, Georgia, October 2005 to Present

Principal

Mr. Huber performs project management and conducts quantitative and qualitative data analysis for a broad range of projects, including DSM potentials assessment, program planning, cost-effectiveness, and market research. He is also experienced in the areas of codes and standards, technical reference manuals (TRM), evaluation, and measurement and verification (M&V).

PROJECT EXPERIENCE

POTENTIAL STUDY EXPERIENCE

Potential Studies. Mr. Huber has managed assessments of electric and natural gas DSM potential across all customer sectors. He has contributed to more than 35 potential studies electric and natural gas utilities across the country. Mr. Huber is currently leading a potential assessment for several public-power utilities in California, and over the last 5 years has contributed or led studies in Missouri, Colorado, Vermont, Kentucky, Indiana, Michigan, Pennsylvania, and Massachusetts. Collectively, these studies have addressed electric, natural gas, and electrification potential across numerous jurisdictions.

Mr. Huber has also had the lead responsibility for completing residential and/or low-income sector energy efficiency potential studies for utilities in Alabama, Arkansas, District of Columbia, Maine, Maryland, North Carolina, and South Carolina. This involves overseeing and coordinating all project activities, including data collection, measure characterization, modeling, and developing estimates of technical, economic, and achievable potential.

Cost-Effectiveness Analysis. Mr. Huber has assessed the cost-effectiveness of many DSM resources for a wide variety of clients. This includes assessment of measures, programs, and DSM portfolios for the planning, reporting, and evaluation purposes. He assisted in the re-design of GDS Benefit-Cost Screening model, as well as many other Excel-based calculators for specialized analysis.

Integrated Resource Planning Support. Based on estimates of future potential, Mr. Huber has supported the development of DSM-related inputs into utility integrated resource plans. Mr. Huber has developed 8,760 annual inputs, participated in IRP stakeholder meetings, and submitted written testimony supporting the development of future potential estimates for future resource planning needs.

MARKET RESEARCH EXPERIENCE

Baseline Assessments. Mr. Huber has developed mail, online, and on-site survey instruments and conducted on-site assessments for residential sector baseline studies in several states, including Maine, Indiana, Pennsylvania and Mississippi. He has also led online/onsite assessments in the commercial sector for across several utilities in Indiana. These baseline study efforts also included sampling design, data cleansing, data analysis, and drafting the final market assessment reports.

Market Barriers and Market Adoption Research. Jeffrey has led several surveys to understand residential and nonresidential consumers perceptions of energy efficiency technologies and their likelihood to adopt energy efficiency measures in the future. This research has been utilized to better estimate future potential as part of DSM potential study research and IRP planning.

JEFFREY HUBER

PRINCIPAL, CEM, CMVP, BESA

CONTACT

770-425-8100

Jeffrey.huber@gdsassociates.com

gdsassociates.com

Marietta GA 30067

PROJECT EXPERIENCE [continued]

Focus Groups and Client Interviews. Mr. Huber has conducted focus group research to under customer attitudes and perceptions regarding the effectiveness of DSM program offerings. This research assessed the effectiveness of program marketing strategies, program education and outreach, and general concerns regarding the program administrator. In addition, Jeffrey has conducted internal client interviews to better under program processes and make recommendations for future improvement.

OTHER RELATED EXPERIENCE

Program Planning & Design. Much of the analysis Mr. Huber performs feeds directly into utility planning efforts. This includes information on DSM resource costs, savings, and potential program participants. In addition to the work noted above, Mr. Huber has assisted utilities in developing estimates of program potential and DSM program portfolio plans. This included drafting recommended program designs, assisting product managers determine appropriate measures and rebate levels, performing cost-effectiveness analysis, and working with utility program managers. He has also provided quality assurance, technical support, and/or developed measures for technical reference manuals (TRMs) for Maine and Pennsylvania and provided deemed measure savings databases for electric cooperatives in Indiana, Kentucky, and North Carolina.

Program Evaluation. Mr. Huber has worked on multiple evaluations and/or evaluation reviews of utilities' energy efficiency programs. He has conducted impact evaluations of low-income weatherization programs and behavioral programs and has conducted evaluation oversight of residential and commercial programs in Pennsylvania, North Carolina, and Georgia. Mr. Huber has also developed focus group interview guides for Efficiency Maine to assess successful practices, market barriers, and identify program recommendations.

ALLYSON DILLEHAY

Managing Consultant

Expertise in: Survey design, data collection and management, quantitative and qualitative analysis, stakeholder and regulator engagement, market and process evaluation, demand response, building energy efficiency, building electrification

Education:

MA, Industrial-Organizational Psychology, Cleveland State University

BA, Psychology, Central Washington University

About:

Allyson Dillehay is a Managing Consultant at Opinion Dynamics, where she provides research and analytical skills to support energy efficiency program evaluations. Her primary responsibilities include project management, survey development and coordination, quantitative and qualitative analysis, aggregating and cleaning large datasets, data management, data dashboard development, and result interpretation and visualization. Allyson brings extensive experience evaluating energy efficiency programs, with a focus on the residential sector. She has supported numerous residential program evaluations, ranging from direct distribution programs that distribute kits through various avenues, to weatherization programs and heat pump initiatives. Allyson has most recently managed residential evaluation efforts such as Ameren Illinois' Income-Qualified Kits Initiatives and Mobile Home and Air Sealing channel evaluations. Allyson also manages both the process and impact evaluation for PacifiCorp's Low Income Weatherization Program, a multistate evaluation spanning four states the program operates in.

Project Experience:

Ameren Illinois Company. Energy Efficiency Kits Evaluation. Project Manager.

Ameren Illinois Company. Mobile Homes and Air Sealing Evaluation. Project Manager.

Ameren Illinois Company. Non-Participating Contractor Study. Project Manager.

Pacificorp. Low-Income Programs Impact and Process Evaluation. Project Manager.

California Public Utilities Commission (CPUC): BUILD and TECH Initiative. Project Manager.

California Public Utilities Commission (CPUC): Emerging Technology Program (ETP) Evaluation. Project Manager.

Con Edison: Innovative Pricing Pilot. Project Manager.

Dominion Energy South Carolina (DESC): Non-Residential Sector Evaluation. Project Manager.

Past Experience:

Statistics Teaching Assistant. Cleveland State University. Cleveland, Ohio. 2019.

Intern. Vocon. Cleveland, Ohio. 2019.

Intern. Sherwin Williams. Cleveland, Ohio. 2018.

JENNA DEFRANCISCO

Managing Consultant

Expertise in: Benchmarking analysis, market profile analysis, project management, process evaluation, sample development, survey and in-depth interview design and execution, qualitative data analysis, process analysis, quantitative data analysis and statistical testing, non-energy impacts, community engagement, residential/small business market characterization

Education:

BA, Psychology, Colby College

About:

Jenna DeFrancisco, Managing Consultant at Opinion Dynamics, transitioned from cognitive psychology research to the energy sector in 2021. Since then, she has leveraged her social sciences training and passion for continuous improvement to rapidly grow her knowledge and skill base and expedite her growth in the energy space. Over the past three years, Jenna has managed or contributed to a variety of residential energy efficiency program evaluations, supporting both impact assessments and process evaluations. Jenna collaborates closely with Ameren Illinois to evaluate multiple programs within their residential energy efficiency portfolio, integrating ongoing process research (such as surveys and interviews) with annual energy savings verification to identify actionable recommendations to enhance program performance. In addition to her multiple years of experience supporting Ameren Illinois, Jenna worked with Ameren Missouri to evaluate their Residential Efficient Products and Pay As You Save programs, as well as with Duke Energy to assess the non-energy impacts of their residential energy efficiency programs. Jenna understands that every client is unique and is dedicated to identifying their specific needs and designing customized research solutions to align with their priorities.

Project Experience:

Ameren Illinois Company. Market Rate Single Family Home Efficiency Evaluation. Project Manager.

Ameren Illinois Company. Smart Savers Evaluation. Project Manager.

Ameren Missouri. Retail Products Evaluation. Project Manager.

Commonwealth Edison (ComEd): Non-Residential New Construction Program Evaluation. Project Manager.

Xcel Minnesota. Non-Residential Critical Peak Pricing Evaluation. Project Manager.

Southern California Edison: Fuel Substitution Behind the Meter Infrastructure Market Study – Equity Segment. Project Manager.

Past Experience:

Lab Manager and Research Assistant. Brandeis Lifespan Developmental Lab. Waltham, Massachusetts. 2019–2021.

MALLORIE GATTIE

Associate Lead Engineer

Expertise in: Building science, energy efficiency technologies in residential and commercial buildings, HVAC systems, water heating, lighting, air flow and building envelope, residential building energy codes, energy modeling software, data loggers and monitoring equipment

Education:
BS, Electrical Engineering,
University of the Pacific, Stockton

Industry Engagement:

AESP ASHRAE

About:

Mallorie Gattie-Garza, Associate Lead Engineer at Opinion Dynamics, provides engineering support to assess and evaluate impacts for various residential and commercial utility efficiency programs. Mallorie's skills include review and recommendations of algorithms and variables within technical reference manuals, derivation of energy saving estimates, development of survey batteries tailored for engineering evaluation, and conducting in-depth interviews with builders and contractors. She conducts onsite measurement and verification (M&V) for both residential and commercial facilities, including installation of metering equipment, in-place and operating measure verification, in-person interviews and primary data collection, and participant education. Mallorie has experience with jurisdictions within Arizona, California, Hawaii, Illinois, Indiana, South Carolina, North Carolina, and Utah, where she conducted analyses for several residential and commercial efficiency programs such as Commercial Rebates, Low-Income, Multi-Family Direct Install, Small Business Direct Install, Appliance Recycling, Home Energy Audit, Income Qualified Weatherization, HVAC, Residential Lighting, Duct Improvement, and Residential New Construction. Specifically, Mallorie performed onsite visits to calculate coincidence factors for lighting usage during peak summer periods, onsite M&V to verify savings and measure installation, provide continued support in improving existing energy efficiency programs and estimated savings for newly offered program measures, and developed analyses tools and custom calculators to efficiently calculate energy savings across multiple programs.

Project Experience:

Hawaii Public Utilities Commission: Evaluation of Residential and Commercial/Industrial Program Portfolio.

South Carolina Electric and Gas (SCE&G): Residential Energy Efficiency Portfolio

Ameren Illinois Company (AIC): Energy Efficiency Portfolio Evaluation.

Northern Indiana Public Service Company (NIPSCO) and Indianapolis Power & Light (IPL): Residential Efficiency Program Evaluations.

Family Direct Install, Appliance Recycling, Home Energy Audit, Income Qualified Weatherization, and Residential New Construction.

Past Experience:

Commercial Energy Efficient Assistant, ConSol, Inc., Stockton, California, 2009–2011.

KATHLEEN WARD

Lead Data Scientist

Expertise in: Demand response program design and evaluation, EV managed charging, behavioral energy efficiency, experimental and quasi-experimental design, econometric modeling, IoT device telemetry data, data analytics, data visualization

Industry Engagement:

Education:
MA, Applied Economics, University of Wisconsin-Madison

BA, Economics, University of Southern California

About:

Kathleen Ward is a Lead Data Scientist at Opinion Dynamics with expertise in the econometric impact evaluation of flexible load, demand response, and energy efficiency programs. Kathleen has worked extensively on the evaluation of residential load management programs, estimating demand impacts for thermostat and water heater demand response events, EV managed charging programs, and peak time rebate programs. In addition to load management, Kathleen has evaluation experience in experimental and quasi-experimental behavioral energy efficiency programs. Prior to joining Opinion Dynamics, Kathleen was the Head of Data Science at Vertis, a workforce analytics startup, and a Managing Consultant at Guidehouse, where she was a member of the Energy Analytics and Modeling team in the Energy, Sustainability & Infrastructure practice. At Guidehouse, she specialized in designing and leading impact evaluations of demand response, EV/EVSE managed charging, and behavioral energy efficiency programs.

Project Experience:

AEP Ohio: Powerley App Evaluation. Lead Data Scientist.

AEP Ohio: Home Energy Reports Evaluation. Lead Data Scientist.

DTE: Insight App Evaluation. Lead Data Scientist.

DTE: Home Energy Reports Evaluation. Lead Data Scientist.

Eversource: Electric Vehicle Supply Equipment Direct Load Control Demonstration Evaluation. Lead Data Scientist.

Maryland Statewide Electric Vehicle Portfolio Evaluation. Lead Data Scientist.

National Grid, Eversource, Unitil: Residential Wi-Fi Thermostat Direct Load Control Evaluation. Lead Data Scientist.

National Grid, Eversource, Cape Light Compact: Residential Thermostat Optimization Evaluation. Lead Data Scientist.

Old Dominion Electric Cooperative (ODEC): Bring-Your-Own-Thermostat Demand Response Evaluation. Lead Data Scientist.

Old Dominion Electric Cooperative (ODEC): Peak Time Rebate Evaluation. Lead Data Scientist.

PECO: Home Energy Reports Evaluation. Lead Data Scientist.

Portland General Electric (PGE): Multi-family Water Heater Demand Response Pilot Evaluation.

Papers and Presentations:

Ward, Kathleen, Debbie Brannan, Steven Tobias, Kimberley Crossman, and Antonio Larson (2019). Going for the Gold: Experimental Design for DR Program Evaluation (Presenter/Paper), International Energy Program Evaluation Conference.

Ward, Kathleen (2018). The Human Dimension of BYOT Programs (Presenter), Behavior, Energy, and Climate Change Conference.

Wassink, Paul, Nicole Buccitelli, Poornima Eber, and Kathleen Ward (2018). Thermostats and Beyond: Measuring Residential Savings Potential and Measuring Results at National Grid (Presenter), Peak Load Management Alliance.

Larson, Tony, Mona Chandra, Kathleen Ward, Debbie Brannan, and Steven Tobias (2017). Cutting Peak Demand – Two Competing Paths and Their Effectiveness (Paper), International Energy Program Evaluation Conference.

Elszasz, Justin, Tracy Dyke-Redmond, Justin Spencer, Kathleen Ward, Daniel Zafar, Ken Seiden, Terese Decker, and Chris Newton (2017). A Snapshot of NILM: Techniques and Tests of Non-Intrusive Load Monitoring for Load Shape Development (Paper), International Energy Program Evaluation Conference.

Past Experience:

Head of Data Science and Customer Solutions. Vertis. Bend, Oregon. 2021–2024.

Managing Consultant. Analyst. Guidehouse. Bend, Oregon. 2012–2021.

MALENA HERNANDEZ

Principal Consultant

Expertise in: Market profile analysis, qualitative & quantitative data collection, market research, impact and process evaluations, data collection management, statistical analysis, survey research, in-depth interviews, low-income program evaluation, project management, multilingual in English, French, and Spanish

Education:

MA, International Management, UC San Diego, School of Global Policy and Strategy

BA, English & French Linguistics, Central University 'Marta Abreu' of Las Villas

About:

Malena Hernandez is a Principal Consultant at Opinion Dynamics. Malena's expertise includes leading, managing, and executing evaluation planning; conducting quantitative and qualitative research; designing and fielding surveys for diverse and multilingual customer bases; and designing and implementing different methods of data collection and analysis. Malena currently manages all attribution evaluations for the Ameren Illinois Company's (AIC's) non-residential programs, including custom and prescriptive retrofit programs, a small business program, a midstream program, a retro-commissioning program, and a food service program, all with their respective channels. She also co-leads Dominion Energy South Carolina's (DESC's) residential portfolio evaluation, acting as the project manager of several DESC residential programs, such as the Heating, Cooling, and Water Heating Program, the Home Energy Check-Up Program, the Neighborhood Energy Efficiency Program, and the Appliance Recycling Program. Additionally, Malena serves as a subject matter expert for the Commonwealth Edison's (ComEd's) Non-Residential New Construction Program evaluation after managing it for several years. As a result, Malena has gained expertise in researching real-time net-to-gross ratios through surveys and interviews with participating contractors, architects, MEPs, developers, owners, distributors, and end-use customers. She also has experience coordinating with subcontractors to conduct engineering-based desk reviews, leading client communications, and working across different evaluation teams.

Project Experience:

Ameren Illinois Company (AIC): Non-Residential Standard, Small Business, and Retrocommissioning Initiatives. Project Manager.

Commonwealth Edison (ComEd): Non-Residential New Construction Program Evaluation. Subject Matter Expert.

Ameren Missouri (AMO): Single-Family Income Eligible Program (SFIE). Project Manager.

Dominion Energy South Carolina (DESC): Neighborhood Energy Efficiency Program (NEEP). Project Manager.

California Public Utilities Commission (CPUC): Solar Consumer Protections Program Evaluation. Project Manager.

Dominion Energy South Carolina (DESC): Heating, Cooling, and Water Heating Program (HCWH). Project Manager.

Dominion Energy South Carolina (DESC): Appliance Recycling Program (ARP). Project Manager.

Dominion Energy South Carolina (DESC): Home Energy Check-ups (HEC). Project Manager.

California Public Utilities Commission (CPUC): Technology and Equipment for Clean Heating (TECH) Program – Market and Cost Studies. Project Manager.

Papers and Presentations:

Hernandez, Malena (August 2024) From Gross to Net: A Snapshot of Commercial EM&V in Illinois. Presented at the ACEEE Summer Study. Pacific Grove, California

Past Experience:

Strategy Consultant, Strategy Consulting Team. Primo Energy. San Diego, California. 2019.

Director of Programming and Logistics, Cuba Team. Cuba Educational Travel/Havana Strategies. Havana, Cuba. 2017–2018

Specialist in International Collaboration and Inter-institutional Agreements. Central University 'Marta Abreu' of Las Villas, International Relations Office. Santa Clara, Cuba. 2014–2016.

ZAC HATHAWAY

Principal Consultant

Expertise in: Process and impact evaluation, survey design and implementation, qualitative and quantitative data collection and analysis, load management and grid impacts, customer experience research, market adoption and transformation

Education:

MA, Urban Studies, Portland State University

BS, Sociology, Portland State University

About:

Zac Hathaway is a Principal Consultant at Opinion Dynamics with over a decade of experience overseeing and conducting process evaluations of energy efficiency programs and researching clean energy and transportation-related topics. Zac has managed numerous process evaluations throughout his tenure at Opinion Dynamics, including Interstate Power and Light Company's Small Business Energy Solutions Program, Energy Trust of Oregon's Production Efficiency and Existing Building Programs, as well as Ameren Missouri's Business Electric Energy Efficiency Program. His experience in the non-residential sector includes the evaluation of multiple program types, from Custom and Prescriptive offerings to Small Business Direct Installation, Small Business Weatherization, and Building Operator Certification efforts. Zac also brings experience in embedded evaluation. In particular, over the past six years, Zac has led an embedded evaluation for Portland General Electric (PGE) to assess the effectiveness of PGE's EV marketing, outreach, education, and infrastructure build-out strategies for minimizing barriers to transportation electrification among fleets, businesses, multifamily properties, and residential customers.

Project Experience:

Ameren Illinois. Small Business Market Study. Project Manager.

Energize Connecticut: Non-SBEA Cross-Cutting Process Evaluation. Project Manager.

Interstate Power and Light Company: Small Business Energy Solutions Process Evaluation. Project Manager.

Energy Trust of Oregon: Production Efficiency Process Evaluation. Project Manager.

Energy Trust of Oregon: Existing Buildings Process Evaluation. Project Manager.

Ameren Missouri: Evaluation of the Business Electric Energy Efficiency Program. Lead Analyst.

Bonneville Power Administration (BPA): Market Research Services. Lead Analyst.

New York State Energy Research and Development Authority (NYSERDA): CleanTech Startup. Lead Analyst.

Papers and Presentations:

Hathaway, Zac. (2022). Providing Avenues to Electric Vehicle Ownership for Ride-Hail Drivers. Presented at the International Energy Program Evaluation Conference (IEPEC). San Diego, CA.

Hathaway, Zac. (2021). Utility Roadmap for Expanding Customer Adoption of Electric Vehicles. World EV Journal.

Hathaway, Zachary (October 2018) Tuning in to the Electric Vehicle Market. Presented at Behavior, Energy and Climate Change Conference. Washington, D.C.

JOE PLUMMER, CEM

Lead Engineer, Opinion Dynamics

Expertise in: Custom energy savings modeling, decarbonization measures, commercial and industrial energy audits, technical reference manual management, measurement and verification, field studies, regulatory and legislative policy, benefit-cost analysis, program management

Education:

MS, Electrical Engineering, University of Minnesota
MS, Science, Technology and Environmental Policy, University of Minnesota
BS, Electrical Engineering, University of Minnesota
Association of Energy Engineers Certified Energy Manager, 2011–Present

About:

Joe Plummer, Lead Engineer at Opinion Dynamics, brings 15 years of experience in the energy efficiency industry. Joe comes to Opinion Dynamics from Franklin Energy, where he served in a variety of engineering and management capacities, including performing commercial and industrial energy audits, developing custom energy models, and serving as project manager for the Minnesota Technical Reference Manual (TRM). Prior to Franklin Energy, Joe worked for the Minnesota Department of Commerce as a regulatory analyst and engineer in the Division of Energy Resources, where he oversaw development of the state's first TRM and eTRM. Before getting involved in energy, Joe was an electrical engineer at Honeywell, developing integrated circuit designs.

Project Experience:

Vermont Public Utilities Commission: Clean Heat Measure Characterization. Technical Lead.

Ameren Missouri: Business Portfolio Evaluation. Engineering Lead.

Ameren Illinois: Custom Initiative Evaluation. Engineering Lead.

Dominion Energy South Carolina: Business Portfolio Evaluation. Engineering Lead.

Duke Energy: Non-Residential Impact Evaluation. Engineering Lead.

Papers and Presentations:

J Plummer, B Stahlberg. Energy Savings Potential of Networked Lighting Control Systems in Small Business. Prepared for Minnesota Department of Commerce, April 2022.

J Plummer, D Laube. Turning off T12 Lighting for Good! A Market Characterization and Conservation Potential Study. Prepared for Minnesota Department of Commerce, March 2017.

J Plummer, M Myser, L Steidel. A "Digital" TRM – Out of the Cloud and Into Your Portfolio. Proceedings of 2014 Association of Energy Services Professionals National Conference.

EJ Wilson, J Plummer, M Fischlein, T Smith. Implementing Energy Efficiency: Challenges and Opportunities for Rural Electric Cooperatives and Small Municipal Utilities. Energy Policy 36(9) 3383-3397. 2008.

Past Experience:

Program Manager/Energy Engineer, Franklin Energy Services, St. Paul, MN, 2015–2022.

Engineer/Rates Analyst, Minnesota Department of Commerce, St. Paul, MN, 2007–2015.

WARREN HIRONS

PROJECT MANAGER, P.E., CEM, CMVP

GDS Associates, Inc.
ENGINEERS & CONSULTANTS

CONTACT

770-425-8100

Warren.hirons@gdsassociates.com

gdsassociates.com

Marietta GA 30067

EDUCATION

Murdoch University, coursework in Renewable Energy

B.S. Environmental Engineering, N.C. State University, May 2009

B.S.E.S. Environmental Economics & Management, University of Georgia, May 2006

PROFESSIONAL AFFILIATIONS/ CERTIFICATIONS

Licensed Professional Engineer (PE) in the state of Georgia

Certified Energy Manager (CEM)

Certified Measurement & Verification Professional (CMVP)

Experienced user of REM/Rate and BEopt building energy simulation modeling software

EXPERTISE

Engineering Feasibility Studies

Energy Systems Modeling

Market Research

Cost-Effectiveness Analyses

DSM Potential Assessments

Regulatory Support

PROFILE

Mr. Hirons has more than 14 years' experience as a consultant in the fields of energy and engineering. He joined GDS in early 2012, and works out of the Marietta, GA office. While at GDS he has worked on projects focusing on several different facets of energy efficiency. He has worked on energy efficiency potential studies, and he has provided consulting services to the North Carolina Utilities Commission (NCUC), serving as the lead consultant reviewing the evaluation, measurement and verification (EM&V) reports submitted by the electricity utilities to the NCUC as part of their application for cost recovery in various electricity rate case proceedings. He has submitted testimony and helped prepare affidavits and data requests on behalf of the NCUC in these proceedings. He has also served on a team of advisors to help the Office of Consumer Counsel (CT) represent the state's utility customers in energy efficiency proceedings. He has provided analysis to clients in regarding proposed utility performance incentive mechanisms. He has provided analysis of utility DSM plans in several states. He has performed research into best practices for providing DSM programs and developed evaluation plans for a utility in Canada. He has also served as a consultant in natural gas rate case proceedings for municipalities in Texas. Mr. Hirons previously worked as an engineer for more than 2 years at Brown and Caldwell, an environmental consulting company, out of the Virginia Beach office.

PROFESSIONAL EXPERIENCE

GDS Associates, Inc., Marietta, Georgia, 2012 to Present

Project Manager

Mr. Hirons performs project management and conducts quantitative and qualitative data collection and analysis, engineering feasibility studies, modeling of energy systems and program evaluation for GDS clients (e.g., utilities, government agencies, and regulatory agencies). He is also experienced in the areas of codes and standards, technical reference manuals (TRM), evaluation, and measurement and verification (M&V). Mr. Hirons performs the following tasks as they relate to performing potential studies and advising clients in EM&V related matters:

- Collects data on the costs, savings, useful lives and saturation of energy efficiency and demand response measures.
- Estimates energy efficiency and demand response potential in various regions of North America.
- Completes baseline studies including sample design, survey design, collect onsite data in the field
- Conducts interviews for evaluation studies
- Constructs building energy simulation models and billing and metering data analysis to support savings estimates developed for energy efficiency potential studies and evaluation analysis.
- Conducts benefit/cost analysis of energy efficiency and demand response measures and programs.
- Conducts statistical and uncertainty/sensitivity analysis of data.
- Conducts economic feasibility studies of energy efficiency and demand response measures and programs.
- Develops and reviews engineering estimates of energy use and savings for energy efficiency and demand response measures and programs using simple and complex engineering models

WARREN HIRONS

PROJECT MANAGER, P.E., CEM, CMVP

CONTACT

770-425-8100

Warren.hirons@gdsassociates.com

gdsassociates.com

Marietta GA 30067

PROFESSIONAL EXPERIENCE [continued]

- Reviews utility EM&V reports and prepares data requests in an effort to require the utilities show sufficient evidence of reported savings in cost recovery proceedings. Reviews include impact, process, market effects (net-to-gross), educational, and marketing programs evaluations.
- Provides regulatory support and testimony in cost recovery proceedings
- Develops program theory models
- Reviews EM&V plans for future programs to advise clients on the adequacy of the plans

Brown and Caldwell, Virginia Beach, VA
Engineer II – Business Consulting Practice
Mr. Hirons worked with multiple contractors and the City of Virginia Beach Department of Public Utilities (DPU) to complete an investigation of the City's sanitary sewer infrastructure. The job required supervising contractor fieldwork activities, analyzing fieldwork data, compiling data and generating condition assessment reports. He also worked on a project to re-write the City's DPU design standards manual, and led an investigation into the stormwater infrastructure serving a portion of the Ft. Eustis military base in Newport News, VA.

Southern Energy Management, Morrisville, NC
Building Science Plan Review Analyst
Mr. Hirons worked on residential energy savings efforts by helping builders construct homes that earned Energy Star certification. His duties included conducting plan reviews by analyzing construction design drawings and entering the results of the analysis along with builder supplied specifications into the REM/*Rate* software program to estimate the energy efficiency of new homes. Mr. Hirons consulted with builders to help them make decisions regarding cost effective upgrades in energy efficiency.

United States Department of Agriculture-Agricultural Research Service, Raleigh, NC
Biological Science Aide
Mr. Hirons provided support to the plant physiologist in charge of completing tasks associated with conducting air quality experiments designed to investigate the effects of carbon dioxide and ozone on crop yield.

PROJECT EXPERIENCE

PROGRAM EVALUATION. Mr. Hirons has worked on impact and process program evaluation projects for state utility commissions and other GDS clients. He is a Certified Measurement and Verification Professional (CMVP) as well as a licensed professional engineer. He worked on the Pennsylvania Statewide Evaluator Team from 2012 to 2017 and assisted with preparing reports to the Pennsylvania PUC on gross and verified savings from the energy efficiency programs of seven investor-owned utilities in Pennsylvania. He has served as the program evaluation consultant for the North Carolina Utilities Commission (NCUC) since 2012 and is responsible for reviewing the evaluation, measurement and verification (EM&V) reports submitted by the North Carolina electric utilities to the NCUC as part of their application for cost recovery in various electric rate case proceedings. He has submitted testimony and helped prepare affidavits and data requests on behalf of the NCUC in these proceedings. Other evaluation projects include the following:

- Developed program evaluation plans for a utility in Canada.
- Reviewed utility EM&V reports and prepared data requests to collect information in order to examine the basis for reported kWh, kW and therm savings filed in utility cost recovery proceedings. Reviews included impact, process, market effects (net-to-gross), educational, and marketing programs evaluations

WARREN HIRONS

PROJECT MANAGER, P.E., CEM, CMVP

CONTACT

770-425-8100

Warren.hirons@gdsassociates.com

gdsassociates.com

Marietta GA 30067

PROJECT EXPERIENCE [continued]

- Provided regulatory support and testimony in cost recovery proceedings
- Developed program theory models
- Reviewed EM&V plans for future programs to advise clients on the adequacy of the plans

MARKET RESEARCH. Mr. Hirons has assisted with the development of telephone, web-based and on-site survey instruments and conducted on-site assessments for energy efficiency studies in several states, including Maine, Indiana, Pennsylvania and Mississippi. These market research projects also included data cleansing, data analysis, and drafting the final market assessment and baseline reports.

COST-EFFECTIVENESS ANALYSIS. Mr. Hirons has assessed the cost-effectiveness of many energy efficiency and demand response resources for a wide variety of GDS clients. This includes assessment of measures, programs, and DSM portfolios for planning, reporting, and evaluation purposes.

DSM POTENTIAL ASSESSMENT. Mr. Hirons has completed assessments of electric and natural gas DSM potential across all customer sectors. He specializes in developing estimates of residential sector energy efficiency potential in utility service areas or states. He has completed numerous residential sector energy efficiency potential assessments for GDS clients, including the following studies:

- Indianapolis Power and Light (2019)
- Vectren Indiana (2019)
- Vermont Department of Public Service: electric and natural gas service territories (2017 & 2019)
- DTE Energy: electric (2018) and natural gas service (2016) territories
- Consumers Energy: electric service territory (2016); natural gas service territory (2019)
- Ameren Missouri: electric service territory (2016)
- Efficiency Maine Trust: electric and natural gas service territories (2015 and 2014)
- Pennsylvania PUC: electric service territories of seven electric distribution companies (2015)

He performs the following tasks as they relate to performing energy efficiency and demand response potential studies:

- Collects data on the costs, savings, useful lives and saturation of energy efficiency and demand response measures
- Estimates energy efficiency and demand response potential in various regions of North America
- Conducts building energy simulation models and billing and metering data analysis to support energy and demand savings estimates developed for energy efficiency potential studies and evaluation analysis
- Conducts benefit/cost analysis of energy efficiency and demand response measures and programs
- Conducts statistical and uncertainty/sensitivity analysis of data
- Develops and reviews engineering estimates of energy use and savings for energy efficiency and demand response measures and programs using simple and complex engineering models and formulas

WARREN HIRONS

PROJECT MANAGER, P.E., CEM, CMVP

CONTACT

770-425-8100

Warren.hirons@gdsassociates.com

gdsassociates.com

Marietta GA 30067

PROJECT EXPERIENCE [continued]

REGULATORY SUPPORT. Mr. Hirons has provided regulatory support services to GDS government and utility clients:

- Served on a team of advisors to help the Connecticut (CT) Office of Consumer Counsel represent the state's utility customers in energy efficiency proceedings.
- Provided analysis to utility and government clients regarding proposed utility shareholder incentive mechanisms
- Provided analysis of utility DSM plans in several states
- Performed research into best practices for providing DSM program
- Served as a consultant in natural gas rate case proceedings for municipalities in Texas
- Reviews utility EM&V reports and prepares data requests in an effort to require the utilities show sufficient evidence of reported savings in cost recovery proceedings. Reviews include impact, process, market effects (net-to-gross), educational, and marketing programs evaluations.
- Provides regulatory support and testimony in cost recovery proceedings
- Develops program theory models
- Reviews EM&V plans for future programs to advise clients on the adequacy of the plans

JAMES STEWART, PHD

Senior Director, Data Analytics

Expertise in: Energy program and policy evaluations, utility customer energy use behaviors, load shifting, dynamic rates/pricing, demand response, applied economics, distributed energy resources, data analytics, impact evaluations

Education:

PhD, Economics, Northwestern University

BA, Economics, University of Pennsylvania

Industry Engagement:

IEPEC

AMERICAN ECONOMIC ASSOCIATION

About:

Dr. James Stewart is a Senior Director of Data Analytics at Opinion Dynamics. Jim has gained national recognition for applying econometrics and statistical methodology to evaluate decarbonization, behavior-based energy efficiency, and demand response programs. With over 20 years of experience in the energy industry, Jim leverages his expertise in advanced econometric, statistical, and predictive methods to estimate causal impacts and cost-effectiveness of demand-side management programs for Vermont Public Service Department, Portland General Electric, Southern California Edison, Hawaiian Electric Company, Bonneville Power Administration, and Honeywell Smart Grid Solutions, among other clients. Jim specializes in designing randomized experiments and quasi-experiments and analyzing data using panel data models, discrete and limited dependent variable models, and time series models. He has assessed a range of interventions, including pricing, direct load control, and behavior-based programs across an array of distributed energy resources, including water heaters. Prior to joining Opinion Dynamics, Jim was a Principal Economist at The Cadmus Group, where he led the Energy Services Advanced Analytics team and specialized in the evaluation of demand-side management and decarbonization programs and policies for utility and regulatory clients.

Project Experience:

Vermont Public Service Department: State and Utility Electric Vehicle Incentives Program Evaluation. Principal Investigator.

Vermont Public Service Department: Continuous Energy Improvement Pilot Evaluation. Principal Investigator.

Vermont Public Service Department: Home Energy Reports Program Pilot Evaluation. Principal Investigator.

Portland General Electric (PGE): Flex Pricing Pilot Evaluation. Principal Investigator.

Puget Sound Energy (PSE) Time Varying Rates (TOU rate with PTR) Evaluation. Principal Investigator.

Centerpoint Indiana – TOU Rate and Critical Peak Pricing Pilot Design and Evaluation and Regulatory Support. Principal Investigator.

Southern California Edison (SCE): Virtual Power Plant Pilot Evaluation. (DR from residential battery/PV systems). Principal Investigator.

Portland General Electric (PGE): Smart Grid Test Bed Pilot Phase I Evaluation. Principal Investigator.

Hawaiian Electric Company: Demand Response Grid Services Purchase Agreement Evaluation (PV/battery systems and grid-interactive water heaters). Principal Investigator.

PPL Electric Commercial and Industrial Customer Demand Response Program Evaluation. Impact evaluation manager.

Rocky Mountain Power and Pacific Power: Home Energy Reports Program Evaluation. Principal Investigator.

SMUD. Home Electricity Reports Program Evaluation. Principal Investigator.

Xcel Energy Business Energy Reports Pilot Evaluation. Principal Investigator.

Xcel Energy High Bill Alerts Pilot Program Evaluation. Principal Investigator.

Papers and Presentations:

Publications in the Journal of Environmental Economics and Management, The Energy Journal, The Electricity Journal, The Journal of Economic Behavior and Organization, and other peer-reviewed journals.

Jacobsen, Grant and James I. Stewart. 2024. Shock Avoidance: Experimental Evidence on High Bill Alerts and Energy Consumption. Working Paper. Under review.

Stewart, James I., Carly Olig, Sepideh Shahinfard, Ken Agnew, Stefanie Wayland, Zachary Horvath, and Jason Lai. 2023. Smart Thermostat Evaluation Protocol: Dec 2016 – May 2023. Golden, CO: National Renewable Energy Laboratory. NREL/SR-5R00-86175. https://www.nrel.gov/docs/fy23osti/86175.pdf.

Jacobsen, Grant and James I. Stewart. 2022. How Do Consumers Respond to Price Complexity? Experimental Evidence from the Power Sector. Journal of Environmental Economics and Management 116. https://www.sciencedirect.com/science/article/abs/pii/S0095069622000754

Stewart, J. I. (2020). Utility Customer Supply of Demand Response Capacity. The Energy Journal, 41(4), 129-152. https://doi.org/10.5547/01956574.41.4.jste

Stewart, James I. and Annika Todd. 2020. Chapter 17: Residential Behavior Evaluation Protocol, The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures: September 2011 – August 2020. Golden, CO: National Renewable Energy Laboratory. NREL/SR-7A40-77435. https://www.nrel.gov/docs/fy21osti/77435.pdf.

Stewart, James I. 2017. Chapter 24: Strategic Energy Management (SEM) Evaluation Protocol. Golden, CO; National Renewable Energy Laboratory. NREL/SR-7A40-68316. http://www.nrel.gov/docs/fy17osti/68316.pdf

Khawaja, M. Sami and James I. Stewart. 2014. Long Run Savings and Cost-Effectiveness of Home Energy Reports Programs. Cadmus Group White Paper. https://www.cadmusgroup.com/wpcontent/uploads/2014/11/Cadmus_Home_Energy_Reports_Winter2014.pdf

Past Experience:

Principal Economist, Economics and Advanced Analytics Team Manager. The Cadmus Group. Portland, Oregon. 2007–2023.

Assistant Professor of Economics. Reed College Economics Department. Portland, Oregon. 2002–2007.

Graduate Instructor. Northwestern University Economics Department. Evanston, Illinois. 1998–2002.

DAN MCMARTIN

Director of Data Management

Expertise in: IT project management; dashboard design, management, and reporting; data management systems; data security; web application development and maintenance; business analyst requirements gathering

Education:

MS, Water Resources, Tufts University

BA, Mathematics, Boston College

About:

Dan McMartin, Director of Data Management, leads a team of software developers responsible for the design and development of customized systems that ingest and manage data streams for subsequent analysis, reporting, and data visualization. Dan provides oversight of Opinion Dynamics' data management platform, including, as needed, the use of data warehouses, data stores, and other business intelligence systems. He is also responsible for maintaining and monitoring our cloud-based and on-premises data systems to ensure they meet organizational requirements and client needs. Dan works with project teams to develop data management and integrated analytic tools to provide client-specific solutions. Under Dan's direction, the Data Management team supports our evaluation and research efforts by deploying an automated cloud-based data pipeline platform that ingests, cleans, and transforms millions of customer account and usage records into a master relational database. This dataset is augmented with program participation, primary data collection, and third-party data to support various analyses and portfolio evaluations. The platform is currently deployed for several large energy efficiency portfolio evaluations, including Ameren Missouri, Ameren Illinois, and the California Public Utilities Commission. Dan oversees the design, development, and testing of the data pipeline, as well as the development of automated QA/QC warnings via email and interactive data exploration reports.

Project Experience:

Ameren Missouri: Customer Data and Interval Data Management. Data Management Lead.
Ameren Missouri: Residential and Commercial Demand Response Program. Data Management Lead.
Ameren Illinois Company (AIC): Energy Efficiency Portfolio Evaluation. Data Management Lead.
Ameren Illinois: Evaluation of Ameren Illinois' Portfolio of DSM Programs. Data Management Lead.
Southern California Edison (SCE) Charge Ready Light Duty Program Evaluation. Data Management Lead.
Pacific Gas and Electric (PG&E): EV Automated Demand Response (ADR) Study. Data Management Lead.
Pacific Gas and Electric Company (PG&E): San Joaquin Valley Disadvantaged Communities. Data Management Lead.
California Public Utilities Commission: Local Government Partnerships Channeling Analysis. Data Management Lead.

Past Experience:

Abt Associates, Inc. Cambridge, Massachusetts, 1998-2019

JESSICA RAKER, PE, CEM

Director of Engineering

Expertise in: Energy management, clean energy strategy, project management, distributed energy resource strategy, pilot evaluation, energy efficiency, renewable energy, stakeholder management

Education:

MS, Mechanical Engineering, University of Washington
BA, Neuroscience & Physics, Wesleyan University
Certified Energy Manager
Utility Management Certificate
Greenhouse Gas Management
Professional Engineer (WA State)
Certificate in Project Management

Industry Engagement:

Association of Energy Engineers

ASHRAE

About:

Jessica Raker, Director of Engineering, plays a key role in the continued growth, development, alignment, and strategy of Opinion Dynamics' Engineering team. Jessica brings over 20 years of diverse energy industry experience to the team—much of which was gained at Puget Sound Energy (PSE), where she managed Engineering, Distributed Energy Resources, and Clean Energy teams. As an experienced engineering consultant, Jessica regularly performs engineering reviews of annual energy impact analyses as well as additional value streams such as GHG emission reduction. During her tenure managing the residential energy efficiency teams at PSE, Jessica participated in the development and implementation of midstream and downstream incentive programs for heat pumps as well as other measures. She was also a voting member of the Regional Technical Forum, which develops standards to verify and evaluate energy efficiency savings in the Northwest. As a Certified Measurement and Verification Professional, Professional Engineer (Washington State), Certified Energy Manager, and Certified Project Manager, Jessica has worked across all aspects of energy efficiency and clean energy customer programs, giving her a unique perspective on the importance of evaluation to building successful demand side management programs.

Project Experience:

Ameren Illinois (AIC): Midstream Heating and Cooling Initiative. Engineering Consultant.

Ameren Illinois (AIC): Market Rate Home Efficiency Products. Engineering Consultant.

Ameren Illinois (AIC): Income Qualified Programs. Engineering Consultant.

Ameren Missouri (AMO): Custom Commercial Program. Engineering Consultant.

Ameren Missouri (AMO): Commercial Retro-commissioning Program. Engineering Consultant.

Ameren Missouri (AMO): Multifamily Programs. Engineering Consultant.

New York State Energy Research Development Authority (NYSERDA): Clean Energy Communities. Engineering.

Past Experience:

Distributed Energy Resources Manager, Puget Sound Energy, Seattle, WA, 2020-2022.

Rebates and Energy Management Manager, Puget Sound Energy, Seattle, WA, 2019–2020.

Supervising Energy Management Engineer, Puget Sound Energy, Seattle, WA, 2014–2019.

ZACH ROSS

Director

Expertise in: Project management, quantitative data analysis & management, benefit-cost analysis, non-energy impact evaluation, macroeconomic and employment impact analysis, baseline and potential studies, energy policy analysis, regulatory testimony.

Education:

BS, Economics & Environmental Studies, Bates College

Industry Engagement:

IEPEC AESP becc behavior, energy & climate change

About:

Zach Ross, Director at Opinion Dynamics, has over a decade of experience conducting market assessments and evaluating energy efficiency and electrification programs in residential, commercial, and industrial markets. Zach serves as the overall project director for the ongoing evaluation of Ameren Illinois's electric and gas residential, commercial, and industrial energy efficiency programs. and is an active participant in the Illinois Stakeholder Advisory Group, where he regularly facilitates discussion around EM&V and policy topics to support utility and stakeholder decision-making. Beyond core evaluation activities, Zach has leveraged his academic training in economics and benefit cost analysis to support Opinion Dynamics' clients across the United States. He conducts annual benefit cost analyses, provides ad-hoc benefit cost analysis support, and has developed and implemented methodology to assess the economic and employment impacts of energy efficiency programs for multiple Opinion Dynamics clients. Most recently, Zach led the economic and employment impacts component of Opinion Dynamics' non-energy impacts (NEI) evaluation for Ameren Illinois; as part of the Illinois NEI Working Group, Zach worked closely with other consultants, stakeholders, and regulators to develop and refine a defensible statewide methodology for estimating the employment and economic impacts from utility energy efficiency programs. Zach also oversees Opinion Dynamics' broader portfolio of NEI evaluation efforts, including estimating and monetizing societal, participant, and utility-focused NEIs.

Project Experience:

Ameren Illinois Company: Energy Efficiency Portfolio Evaluation. Project Director.

Ameren Illinois Company: Non-Energy Impacts Evaluation. Evaluation Lead.

Ameren Illinois Company: Annual Verified Benefit Cost Analysis and Ad-Hoc Support. Project Director.

PSEG Long Island: Macroeconomic and Employment Impact Analysis. Project Manager.

Northwest Energy Efficiency Alliance: Natural Gas Portfolio Mid-Cycle Assessment. Project Director.

NYSERDA: Commercial Energy Management Initiatives. Project Manager.

Papers and Presentations:

Carlson, M. and Ross, Z. (March 2023). Water Heaters as an Energy Efficiency Resource. Presented at the American Council for an Energy Efficient Economy (ACEEE) Hot Water Forum. Virtual.

Ross, Z. and Polis, H. (August 2019) “Gassing Up” Savings: Emerging Natural Gas Technologies. Presented at the International Energy Program Evaluation Conference. Denver, Colorado.

Ross, Zach (August 2017) Painting the Whole Picture: Understanding the Impacts of Energy Efficiency Using Cost-Effectiveness Testing and Economic Impact Assessments. Presented at the International Energy Program Evaluation Conference. Baltimore, Maryland.

Ross, Z., Millette, J., Randazzo, K., and Winch, R. (October 2016) How Wrong Can You Be About What Causes Participant Spillover? Presented at the Behavior, Energy & Climate Change (BECC) Conference. Baltimore, Maryland.

Ross, Z. and Flanders, A. (August 2015) Enhancing the Enhanced Self-Report Method. Poster presented at the International Energy Program Evaluation Conference. Long Beach, California.

Dwelley, A. and Ross, Z. (November 2013) Identifying and Mitigating Common Self-Reporting Errors in Energy Surveys. Behavior, Energy & Climate Change (BECC) Conference. Sacramento, California.

KITTY COOK

Survey Operations Lead

Expertise in: Data collection management, survey research, questionnaire design, sample management, data analysis and evaluation, project management, market research

Education:

BA, Anthropology, Bucknell University
Certificate in Small Business Management, University of Pittsburgh
Certificate of Completion, NCQA Client Satisfaction Component for HMO Accreditation
Certificate of Project Management, Council of American Survey Research Organizations

About:

Kitty Cook, Survey Operations Lead at Opinion Dynamics, brings over three decades of data collection and survey management experience. With deep experience conducting market research and evaluation studies, Kitty brings expertise in designing, planning, and managing a broad array of data collection efforts in support of strategic market research studies. Kitty excels when directing complex customer data collection projects such as baseline studies that involve multimode customer surveys, field data collection, and managing large amounts of data. As Survey Operation Lead, Kitty works with clients to oversee all aspects of market research data collection projects, including developing outreach methods and sampling plans for both residential and commercial studies. Kitty currently oversees all aspects of the Illinois Commerce Commission's Annual Satisfaction Study, a state regulatory requirement affecting Illinois's four electric utility companies. Having led the reporting and analysis tasks since the 2021 reporting period, Kitty oversaw the 2022 transition of data collection from a telephone-only methodology to a mixed-mode methodology, including making recommendations for sampling and weighting strategies. Kitty worked with project consultants to design the data collection tool and outreach materials for the CHANGES project conducted for the California Public Utility Commission. This complex project included paper questionnaires in six languages, along with coordinating inbound phone assistance lines for each potential respondent's language. The outreach design was a culmination of Kitty's expertise in boosting response rates among the hard-to-reach populations. Kitty oversees data collection, programming, sample management, and data output procedures for projects such as Portland General Electric's Residential Charging Study and Duke Energy's Midstream and Main Channels studies. Kitty oversaw the sampling and multimode data collection for the CPUC Green Tariff project. This project included three target populations: Residential, Commercial, and Industrial. Each target population was conducted in a unique manner through a combination of phone, mail, online, and online panel surveys. In addition to overseeing the data collection aspects of these projects, Kitty prepared the datasets for analysis and reporting by condensing key data points and providing the project consultants with a clean dataset with statistical testing where appropriate based on sample sizes and weighting. Kitty's market research project management skills allow her to deliver unbiased, actionable data to meet the needs of Opinion Dynamics' clients.

Project Experience:

Portland General Electric (PGE): Residential Charging Tracking Study. Survey Operations Lead.
California Public Utilities Commission (CPUC): CHANGES Participant Assessment. Survey Operations Lead.
Illinois Commerce Commission: Annual Satisfaction Study. Survey Operations Lead.
Dominion Energy South Carolina (DESC): Market Study. Survey Operations Lead.
Duke Energy: Midstream and Main Channel Studies. Survey Operations Lead.

Past Experience:

Issues and Answers, Global Market Research and Consulting. Virginia Beach, Virginia. 1998–2021.
Clark Market Research. Pittsburgh, Pennsylvania, 1993–1998.

JAYDEN WILSON

Director

Expertise in: Nonresidential impact evaluations; gross impact sampling; C&I program design, evaluation, and market research; benefit-cost analysis; new construction programs; electrification and decarbonization

Education:

MA, Economics Policy, Boston University

BA, Economics and Planning and Environmental Policy, Western Washington University

Industry Engagement:

AESP

IEPEC

About:

Jayden Wilson, Director at Opinion Dynamics, will serve as the Sampling Advisor, applying a decade of experience directing and conducting nonresidential impact evaluations and gross impact sampling subject matter expertise to this engagement. Jayden will lead the development of stratified, savings-weighted sampling schemes that meet statistical rigor expectations and support gross impact results that meet reporting needs.

Jayden brings expertise in commercial and industrial (C&I) program evaluation, cost-effectiveness analysis, new construction programs, electrification and decarbonization, and program attribution analysis. He currently serves as the Deputy Portfolio Director and C&I Sector Lead for Ameren Missouri's Energy Efficiency and Demand Response Portfolio Evaluation. In this role, he manages all impact, process, and attribution evaluations for Ameren Missouri's nonresidential programs, historically including custom and prescriptive retrofit programs, a new construction program, a small business program, and a retro-commissioning program. He also leads the Whole Independent System Evaluation™ of the California Building Initiative for Low-Emissions Development (BUILD) program, a low-income new construction decarbonization program. Previously, Jayden served as the Sector Lead for Interstate Power and Light's evaluation of their nonresidential programs. Jayden also serves or has served as a subject matter expert on gross impact sampling for Ameren Missouri and IPL nonresidential evaluations, overseeing the development and execution of stratified random sampling schemes designed to achieve desired precision targets cost-effectively.

Project Experience:

Energy Trust of Oregon: 2023 Existing Building Evaluation. Evaluation Director and Sampling Subject Matter Expert.

Ameren Missouri: Energy Efficiency and Demand Response Programs Evaluation. Deputy Portfolio Director and C&I Sector Lead.

Interstate Power and Light (IPL) Nonresidential Portfolio Evaluation. Nonresidential Portfolio Lead.

Commonwealth Edison (ComEd): Nonresidential New Construction Program Evaluation. Subject Matter Expert.

California Public Utilities Commission (CPUC): Building Initiative for Low-Emissions Development (BUILD) Program Evaluation. Developmental Evaluation Lead.

Papers and Presentations:

Wilson, J. (November 2022) Magnitude Matters: Re-evaluating Traditional Cost-effectiveness Practices for Electrification. International Energy Program Evaluation Conference. San Diego, California.

Spring Training Event Trainer (May 2022) Theory and Practical Application of Demand-Side Management Cost-Effectiveness Testing. Association of Energy Services Professionals. Ponte Vedra Beach, Florida.

Millette, J. and Wilson, J. (August 2019) Looking on the Bright Side: How Actual Solar PV Production Compares to What Is Expected. International Energy Program Evaluation Conference. Denver, Colorado.

Past Experience:

Economist, Gas Division. Department of Public Utilities. Boston, Massachusetts. 2012–2016.

Economic Research Assistant. Commonwealth Research Group. Brookline, Massachusetts. 2010–2012.

Opinion **Dynamics**

CONTACT:

Antje Flanders
Vice President
aflanders@opiniondynamics.com

BOSTON
PORTLAND
SAN DIEGO
SAN FRANCISCO