Opinion Dynamics

NASEO REQUEST FOR INFORMATION (RFI)

IMPLEMENTATION OPTIONS FOR HOME ENERGY PERFORMANCE-BASED WHOLE-HOUSE REBATE PROGRAM AND HIGH-EFFICIENCY ELECTRIC HOME REBATE PROGRAM

MAY 19, 2023

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FIGURES

I. DEVELOPMENTAL EVALUATION FOR SUPPORTABLE RESULTS

Opinion Dynamics is the largest independently owned firm specializing in energy research and advisory services. Over the past 30 years, Opinion Dynamics has pioneered approaches to evaluate the technologies and market interventions that aim to address energy, environmental, and societal challenges. Our clients include state energy offices, electric utilities, public utility commissions, regional energy organizations, automakers, energy start-ups, and more. The one thing all our clients have in common is a thirst for the truth. Whether it's research to scale a pilot, assess the load shift impacts from an intervention, or measure the success of a marketing campaign, we pride ourselves on providing accurate and defensible information.

Our team brings in-depth experience working with stakeholders on innovative new programs. We often take a developmental evaluation approach, which allows us to adapt our approaches early in the program design and implementation process to provide valuable insights at key decision points. We work collaboratively with program teams early on, integrating data collection and analysis into program delivery processes to increase efficiencies and reduce costs and creating feedback loops to help all parties better understand complex customer and market adoption patterns, effectiveness of program strategies, and opportunities for course correction. Instead of just focusing on the impacts of a specific program in a vacuum, we focus on understanding how markets, technologies, organizations, and regulatory frameworks influence the program's activities, outputs, and outcomes. Throughout this process, we focus on yielding insights that provide not only the "what," but also the "why," to ensure high degrees of customer adoption, market insights, savings assessments, and continuous engagement.

Through our developmental evaluation experience with residential, commercial, and new construction efficiency and electrification programs across the country, we can bring to bear our extensive knowledge of building decarbonization barriers and opportunities, evaluability assessment best practices, key metrics identification, data sources for metric measurement, research instruments, program design best practices, and innovative research methods.

Opinion Dynamics authorizes NASEO to publish and distribute this response to the NASEO RFI on its website and through other means to the states and general public. We have included no confidential or proprietary information in our response.

Sincerely,

Brad Kates, CEO

Opinion Dynamics

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2. CATEGORY 2: PROGRAM ELEMENTS

COMPANY CHARACTERISTICS

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APPROACH EQUITY, DIVERSITY, INCLUSION, AND ACCESSIBILITY (DEIA)

Our human capital is our most valuable asset. The collective sum of the individual differences, life experiences, knowledge, inventiveness, innovation, self-expression, unique capabilities, and talent our employees invest in their work represents a significant part of not only our culture, but our reputation and company's achievement as well. Our commitment to fostering, cultivating, and preserving a culture of diversity, equity, and inclusion (DEI) is codified in our DEI Statement and is exercised throughout the organization, as with the examples that follow.

Opinion Dynamics DEI initiatives are applicable—but not limited—to our practices and policies on recruitment and selection; compensation and benefits; professional development and training; promotions; transfers; social and recreational programs; layoffs; terminations; and the ongoing development of a work environment built on the premise of equity.

One of the ways we continually reaffirm our commitment to diversity and inclusion is through the efforts of our employee-initiated and employee-led DEI Team. Formed in 2020, our DEI Team is rooted in the understanding that the work of social justice is multi-faceted and intersectional. Correspondingly, our DEI Team Mission and Vision situates and guides the company's DEI and social justice efforts in four distinct areas, which we share in Figure 1, along with recent efforts we have undertaken in each.

Figure 1. Opinion Dynamics' DEI Initiatives

Company	Employees	Communities	Suppliers and Collaborators
▪ Developed DEI Policy and Commitments ▪ Hired Head of People and Culture ▪ Utilized a Consultant to develop and offer DEI training	▪ Completed internal audits of hiring processes and employee compensation ▪ Launched "Community Conversations" to discuss key DEI issues of interest to staff	▪ Matched employee donations to charitable organizations; over 50% of which were focused on social justice ▪ Developing passion projects (i.e., pro bono) to engage with our local communities	▪ Focus on developing meaningful long-term relationships with diverse suppliers ▪ Creation of partner database to expand opportunities for collaboration

In addition to these examples, our proposed approach to this scope of work, including the methodological approach and teaming structure, clearly demonstrates our commitment to advancing DEI and environmental justice principals as part of the research process.

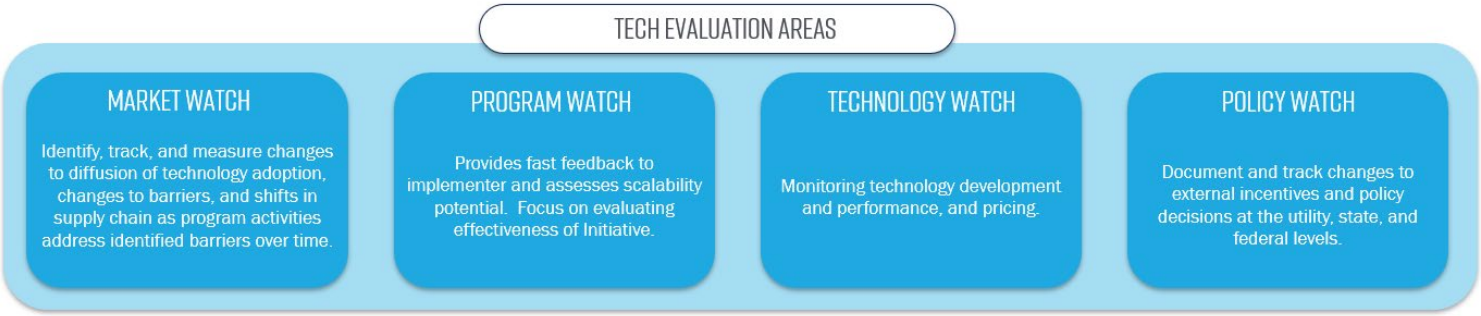
RELEVANT PROGRAM EXPERIENCE

The select descriptions that follow are examples of Opinion Dynamics' work with local, utility, and state entities to provide evaluation and assessment services that help optimize implementation, delineate interactive effects and demystify the impacts of layered/braided programs, and generate defensible results for a variety of program delivery channels including point-of-sale and retail. Additional program examples follow in Category 3.

California Energy Commission: Technology and Equipment for Clean Heating (TECH) Evaluation[1]

The TECH Initiative is a $120 million pilot program designed to help advance the state's mission to achieve carbon neutrality by driving the market adoption of low-emissions space- and water-heating technologies for existing single-family and multifamily residential homes. Through a combination of market incentives, supply chain engagement, workforce development, consumer education, regional pilots, and Quick Start Grants, the initiative installs low-emissions space- and water-heating technologies in existing California homes. Much like how funds from the Inflation Reduction Act will function, TECH incentives layer with existing utility incentives, and the program is subject to an equity requirement. Opinion Dynamics is serving as the developmental evaluator for the TECH Initiative. The overarching goals are to evaluate the TECH Initiative implementation and assess short-term and long-term market and program impacts, with a focus on testing theories and assumptions to inform future decarbonization policy. The evaluation team monitors the following four key areas: the market, the TECH Initiative, and the technology and policy landscapes (Figure 2).

Figure 2. TECH Evaluation Areas



California Investor-Owned Utilities (IOUs): Low Income Needs Assessment[2]

Opinion Dynamics conducted the 2019 Low Income Needs Assessment (LINA) study for the California Alternate Rates for Energy (CARE) and Energy Savings Assistance (ESA) programs. Both programs are designed to serve households with incomes at 200% or below the annually released Federal Poverty Guideline (with some exceptions to the federal guideline's limits applying). The programs' purposes are to improve the quality of life for California's low-income population and ensure eligible customers receive the necessary assistance to save energy, reduce energy bills, and mitigate potential health, comfort, and safety issues associated with inefficient or energy-intensive equipment and housing. Opinion Dynamics surveyed customers who are or might be eligible for CARE and who have or have not participated in ESA. We also interviewed ESA contractors and representatives of community-based organizations that serve the CARE-eligible community. The results of the research provided updates to the understanding of the scope,

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[1] TECH Evaluation Plan: https://opiniondynamics.com/wp-content/uploads/2023/05/Opinion-Dynamics_Eval_TECH-Evaluation-Plan.pdf https://opiniondynamics.com/wp-content/uploads/2023/05/Opinion-Dynamics-Final-TECH-Impact-Plan_2023-03-03.pdf Interim Process Evaluation: https://www.calmac.org/publications/TECH_Interim_Process_Evaluation_Final_Report.pdf TECH Initiative Baseline Assessment: https://www.calmac.org/publications/TECH_Baseline_Market_Assessment_Final_Report.pdf; California Heat Pump Residential Market Characterization and Baseline Study: https://www.calmac.org/publications/OD-CPUC-Heat-Pump-Market-Study-Report-5-17-2022.pdf

[2] http://www.calmac.org/publications/2019_LINA_-_Final_Report_-_Vol_1_Summary_of_Key_Findings__-_12132019.pdf

size, characteristics, and needs of the low-income households in California that are eligible for CARE and ESA services and refreshed knowledge of household engagement with energy and program services.

Massachusetts Program Administrators: Clean Energy Pathways Workforce Development and Training Program Evaluation[3]

Opinion Dynamics conducted a developmental evaluation of this new statewide workforce development and training program. CEP's goal is to grow and diversify the energy efficiency workforce by creating entry-level opportunities for diverse workers and providing training, mentorship, and wraparound services that promote retention and advancement. We directed the creation of the program theory logic model, designed and assessed baseline metrics, designed pre- and post-intervention assessments, assessed the use of community-based organizations, and completed a workforce, education, and training landscape analysis to situate the program evaluation in the context of the Massachusetts workforce, education, and training environment. We then evaluated multiple cohorts of weatherization and HVAC students moving through the program.

Ameren Illinois: Evaluation of the ActOnEnergy Residential and Commercial & Industrial Program Portfolios[4]

Ameren Illinois relies on Opinion Dynamics' annual process and impact evaluations of their residential and nonresidential energy efficiency programs to monitor portfolio health and performance. The programs, which provide both electric and gas savings, are currently comprised of a full suite of residential offerings (with a specific focus on serving low- and moderate-income customers through direct install, retrofit, and point-of-purchase programs), business offerings (including prescriptive, custom, small-business direct install, retro-commissioning, and midstream programs), and pilots including virtual commissioning and market transformation programs. Where appropriate, we employ developmental evaluation approaches to ensure emerging program designs receive continuous attention, enabling Ameren Illinois to apply any necessary course correction in real-time rather than having to wait for many months to elapse to apply evaluation results.

PROGRAM ELEMENTS

Along with the unprecedented level of federal funding for residential energy efficiency comes a responsibility for states to act as careful custodians of public trust while expediting the delivery of these dollars for maximum impact. Great enthusiasm about the potential for these programs to kickstart broader market transformation sits alongside a focus on preventing waste, fraud, and abuse so as not to squander this once-in-a-lifetime opportunity. Realizing some critical outcomes were not achieved only after the end of the programs not only breaks public trust but also endangers the likelihood of future investment.

For these reasons, developmental evaluation is critical to accelerating the transition to a clean energy economy. As seen in Figure 3, It is an approach to insert third-party evaluation within the program design, implementation, and reporting processes to support evidence-based decision-making as well as provide near real-time feedback to inform continuous improvement. The Inflation Reduction Act funding is new and evolving and will be layered with pre-existing and new programs with a variety of goals. It is crucial to have an evaluation process that is flexible and adaptable over the course of the funding duration given that program elements and priorities may shift over time. To derive maximum value from this funding and avoid waste, fraud, and abuse, we must collectively come into the evaluation with an open mind—with the flexibility and technical acumen to adapt approaches due to new information and changing market conditions and the experience to understand when to change course.

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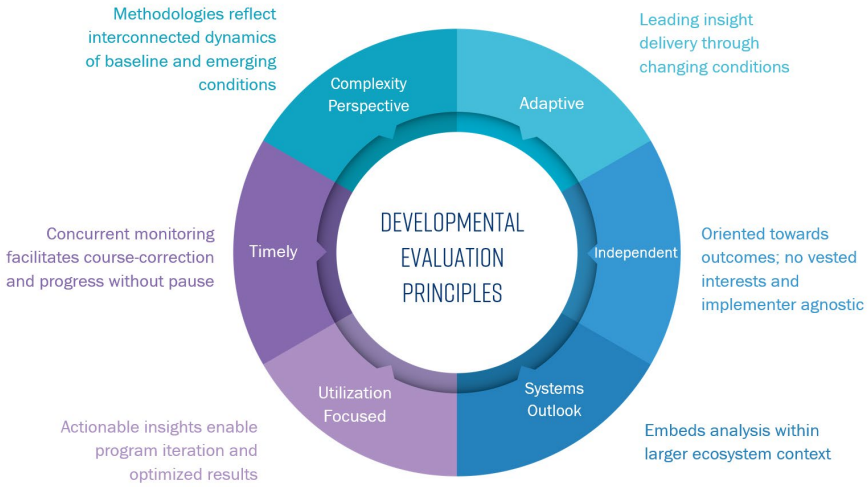
[3] Report Template v2017.0521 (ma-eeac.org)
[4] Ameren Illinois 2022 Integrated Evaluation Report

A developmental evaluation approach allows for collaboration with the implementation team(s) early on so that real-time evaluation insights can be infused into every step of program design and implementation. The result is an evaluation that emphasizes the interconnectedness and complexity of the clean energy landscape and focuses on not only the individual components of a program but also the system as a whole. This approach is appropriate for optimizing both the High-Efficiency Electric Home Rebate Program as well as for the modeled and measured pathways of the Home Energy Performance-Based Whole-House Rebate (HOMES) Program as a necessary augmentation and backstop to using calculated or meter-based baselines and savings.

Figure 3. Developmental Evaluation Principles



For this evaluation effort to be successful, it requires systems-thinking—a focus on the fact that everything is interconnected and in this new market, any change likely will have ripple effects through the system. Many stakeholders have voiced concerns that the majority of benefits from unchecked incentives will accrue to the contractor level of the market rather than residents themselves. With this in mind and alongside the planned robust workforce development programs that will ideally inject more contractor supply into the marketplace and counteract inflationary pressure, we recommend building an evaluation paradigm around four key pillars: Market Watch, Program Watch, Technology Watch, and Policy Watch, also articulated in the TECH program description, above. These pillars focus not only on program performance but also on identifying and tracking market transformation indicators over time along with monitoring the evolution of technologies such as space and water heating as well as rapidly changing policy and regulatory developments. We believe this approach provides the most comprehensive evaluation needed to gauge scalability of the program strategies and efficacy of policy designs so that market transformation continues upon exhaustion of Inflation Reduction Act funding.

RFP AND CONTRACT LANGUAGE

The example language that follows is largely adapted from publicly available NYSERDA RFP 4808.[5] We have significantly abridged the original language of the RFP and have refocused language for relevancy to Inflation Reduction Act funds in Appendix A, but we encourage states to access the full RFP via the link in the footnote. Our team also has access to several years of useful RFP and contract language related to evaluation and welcome further discussion regarding these resources.

[5] https://portal.nyserda.ny.gov/servlet/servlet.FileDownload?file=00Pt000000WCd7pEAD

3. CATEGORY 3: INDICATION OF VENDOR INTEREST

COMPANY CHARACTERISTICS

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APPROACH TO EQUITY, DIVERSITY, INCLUSION, AND ACCESSIBILITY (DEIA)

Please see Approach Equity, Diversity, Inclusion, and Accessibility (DEIA) overview provided in Category 2.

RELEVANT PROGRAM EXPERIENCE

Descriptions of select projects are provided above, in Category 2, additional examples follow below, which encompasses a wider range of relevant work. Much of this work was undertaken in response to state regulatory requirements, and all of these projects included an equity component.

NH Saves: Home Energy Assistance (HEA) Program Evaluation. Opinion Dynamics conducted an extensive impact and process evaluation of the NHSaves Home Energy Assistance (HEA) Program. The HEA Program offers weatherization services, heating system replacements, appliance replacements, lighting, domestic hot water, and other measures to income qualified residents across New Hampshire, in coordination with the federal Weatherization Assistance Program. As over a third of participating households heat their homes with delivered fuels (i.e., not natural gas or electricity), our impact evaluation approach leveraged on-site data collection to quantify savings from heating systems not captured through utility billing systems. Additionally, our process evaluation focused on identifying opportunities to improve the delivery of the HEA Program, in coordination with several other social service programs, by a capacity-constrained workforce operating in sometimes remote and rural areas. Further, Opinion Dynamics was able to quantify substantial non-energy impacts (NEIs) associated with program treatments. Specifically, our team found evidence of large benefits to participants' comfort, impacts on participant health, and marked benefits to utilities in terms of reductions in unpaid bills for participants.

California Energy Commission (CEC): Accelerating the Deployment of Advanced Energy Communities. The CEC awarded this multimillion-dollar, Research Development and Demonstration project to create an innovative and replicable approach for accelerating the deployment of Advanced Energy Communities, targeting a low- and moderate-income neighborhood served by San Diego Gas & Electric. As part of the project, Opinion Dynamics served as the technical expert for developing metrics and lessons learned and for transferring the replicable model to the broader community of low- to moderate-income, predominantly Hispanic neighborhoods across California. Opinion Dynamics supported the engineering and community engagement teams, led project logic model creation, conducted a case study, and developed metrics and estimation tasks. The engineering team considered all applicable advanced energy solutions, including community solar, rooftop solar, fuel cells, combined heat and power, and advanced thermostats.

PSEG Long Island Residential Energy Affordability Partnership (REAP) Evaluation. Opinion Dynamics assessed the REAP program using billing analysis and participant survey efforts. The program was designed to assist low-income households with energy efficiency improvements. Households were required to meet specific income requirements to be eligible for the REAP Program, and once enrolled, received free home energy audits and energy efficiency measures, including refrigerators, CFL bulbs, pipe insulation, hot water heater tank wraps, and faucet aerators.

Southeast Confidential Client: Low- and Moderate-Income Study. Opinion Dynamics has recently conducted a Low and Moderate Income (LMI) study southeast confidential client. The key objectives of the study were to: characterize LMI customer participation in residential energy efficiency programs; compare LMI customer participation to that of non-LMI

customers; understand participation predictors and characterize LMI participants; identify drivers of and barriers to participation among LMI customers; understand and characterize changes in energy burden experienced by LMI customers upon program participation; and identify strategies to cost-effectively increase LMI customer participation through programmatic enhancements.

Ameren Illinois (AIC): HPWH and HVAC Market Baseline and Characterization Study; Midstream Initiative Impact and Process Evaluation. Opinion Dynamics completed a study to characterize the Southern Illinois residential retrofit and new construction HVAC and HPWH markets to understand the current residential market sizes (i.e., total shipments, total sales, AIC-driven sales), describe the HVAC and HPWH supply chains in Southern Illinois, characterize market trends (i.e., technologies, business models, market actors, etc.), and explore the potential key performance indicators for market change. This work helped to identify the potential for further market effects and inform future program design. We conducted an in-depth literature review, supply chain characterization, and semi-structured interviews with manufacturers, distributors, and trade allies for each of these markets.

AIC: Low Income Program Evaluation and Customer Research. Since 2010, Opinion Dynamics has conducted annual impact and process evaluations of the AIC Income Qualified (IQ) Initiative, a home audit and weatherization retrofit program that focuses on serving low- and moderate-income AIC gas and electric customers who cannot afford to pay market prices for energy efficiency retrofit improvements to their homes. The initiative targets residents of single-family homes with household incomes below 300% of federal poverty guidelines and managers of multifamily properties with at least half of units receiving some income qualified assistance.

Pacific Gas and Electric Company (PG&E): San Joaquin Valley Disadvantaged Communities – Data Gathering Project. Under contract with PG&E, the Joint Utilities of California engaged Opinion Dynamics in a data gathering project across 179 disadvantaged communities in the San Joaquin Valley (SJV). The project was a result of California Assembly Bill 2672, which seeks to increase access to affordable energy sources, reduce reliance on alternative fuels such as propane, wood, and diesel generators, and improve health, safety, and air quality in the SJV. Visit our website for the detailed case study.

COMPANY SERVICES SUMMARY

Opinion Dynamics has pioneered and refined the developmental evaluation approach described above in Category 2 and appreciates the opportunity that NASEO has provided to share key evaluation principles with constituent state energy offices. Through the developmental evaluation approach, we see several opportunities that allow for dynamic, real-time reporting to program managers to ensure states capture market feedback and experience with program efforts quickly. This approach not only captures the information in real-time, but also enables us to then communicate that to program implementers as quickly as possible, in addition to traditional annual evaluation reporting.

Opinion Dynamics brings a proven track record in leading stakeholder processes, ensuring transparent and independent evaluations, managing multi-year projects within scope and on time and budget, while utilizing the strengths of evaluation partners when doing so best serves the research objectives. We have applicable experience teasing apart the interactive effects of overlapping programs and apply qualitative as well as quantitative assessment to verify and validate market transformation effects. We welcome further conversation on these topics.

In addition to the core processes implicated in developmental evaluation, Opinion Dynamics offers services in the following:

- Societal non-energy impact (NEI) research to quantify benefits associated with emission reduction.
- Quantification and monetization of benefits from both avoided electric generation and localized gas combustion.
- Load impact, technology adoption, and EV charging pattern insights via collection, QA/QC, cleaning, and analysis of large datasets and primary field research.

APPENDIX A: EXAMPLE RFP LANGUAGE

Requested developmental evaluation services could include:

1) Monitor project outcomes and measure specific metrics reflecting the objectives of the programs.
2) Tasks include, but may not be limited to:
   a) Establish baseline assumptions that reflect conditions that exist prior to implementation of the projects.
   b) Work directly with implementation vendor(s) to draft initial versions of monitoring and verification (M&V) plans, to be included in the executed implementation contracts.
   c) Identify data collection protocols and work with implementation vendor to align data collection and tracking processes to incorporate into participation agreements.
   d) Work with implementation vendor(s) and State Energy Office (or other program administrator) to determine a final set of appropriate measurement and verification metrics, data collection tools, and analysis protocols.
   e) Implementation or Evaluation vendor: Comply with Department of Energy reporting requirements (if such requirements are issued) and design templates for quarterly data reports, preferably in an online dashboard, for use in publicizing the results of the projects.
   f) For the results of the projects to be meaningful as evidence of market transformation, the results need to be clearly articulated and independently verified. Tasks may include conducting additional research such as quantitative and qualitative surveys of community residents, data from projects, including both data generated by the implementation vendor(s) and data generated by the market actors.
3) Convene an interim reporting out conference to share results to date, issues and lessons learned such that peer teams in other jurisdictions/states can offer ideas and solutions and share progress. This will allow for mid-course corrections prior to conclusion of the projects.
4) The contractor will work with the implementation vendor(s) to capture additional information on project implementations, beyond measurement data, such as operational aspects. Tasks include, but are not limited to:
   a) Formalize lessons learned from projects and share these lessons with other market actors, funders, and related audiences.
   b) Develop guides for municipalities and others on how to carry forward impacts of these projects or undertake similar projects, with a focus on how to undertake projects that may not have access to a similar level of funding.
   c) Develop materials for investors on the results of the projects relevant to non-governmental stakeholders.

The evaluation vendor should have experience in:

- Evaluation of complex, multi-project initiatives – at both the project and program levels
- Quantification of key M&V metrics including emissions, air quality, grid impacts, energy impacts
- Measurement of non-energy impacts and qualitative factors including community satisfaction, quality of life improvements, household economic stability
- Disadvantaged community (DAC), or low and moderate income (LMI) household, studies and policy expertise
- Qualitative and quantitative evaluation skills, including survey research