



October 8, 2021

Kathryn H. Bowman
Louisiana Public Service Commission
602 North Fifth Street (Galvez Building)
Baton Rouge, Louisiana. 70802
Kathryn.bowman@la.gov

RE: RFP 21-22

Dear Ms. Bowman,

E9 Insight, together in partnership with a select consortium of expert consultants, is delighted to present this response to the recent RFP addressing SWEPCO's "Application for Approval of Automated Metering System and Request for Cost Recovery and Related Relief" (RFP 21-22).

We have included materials that describe our expertise and qualifications, along with a narrative that describes our anticipated approach to supporting the Commission Staff in this matter. We do not have any conflicts of interest that would impair our ability to provide these services to the Commission.

Should you have any questions or require further information, please contact me as indicated below. Thank you for your consideration.

Best regards,

A handwritten signature in blue ink, appearing to read 'Cameron Brooks', is written over a light blue horizontal line.

Cameron Brooks
President
E9 Insight
3020 Jefferson Street
Boulder, Colorado 80304
(303) 957-7667
cbrooks@e9insight.com



Introduction

E9 Insight, together in partnership with a select consortium of expert consultants, is delighted to present this response to the Louisiana Public Service Commission's (PSC or Commission) recent RFP #21-22 seeking a consultant to assist the Commission in its review of Southwestern Electric Power Company's (SWEPCO) "Application for Approval of Automated Metering System and Request for Cost Recovery and Related Relief." (AMS Filing)

E9 Insight is a regulatory research and policy advisory firm with substantial experience helping clients respond to the dynamic regulatory and technology landscape that surrounds US electric industry. E9 Insight offers a unique combination of an informed 50-state perspective while acknowledging and maintaining an understanding of the unique context within each state. E9 Insight also collaborates with expert consultants, combining research and project management with their deep domain expertise to address the unique needs of each engagement.

E9 Insight is pleased to submit this proposal in collaboration with Plugged In Strategies and Taconic Advisory Services to assist the Commission Staff. Our team is deeply experienced with the particulars of AMS, technical capabilities and the defining policy issues that surround AMS deployment. This includes substantial experience defining benefits, costs, and applications of AMS; enabling customer value and data access; protecting customer privacy; enabling demand response and related grid services; and, integrating AMS capabilities into the grid planning processes and grid modernization initiatives. Our team has earned its experience – as individuals and as a team – and played leading roles as staff within commissions, as consultants and as advocates for thoughtful public utility regulatory policy. We believe these capabilities and experience will support the Commission in Louisiana to seek effective solutions.

1. Work Plan

Based on the guidance of the Commission, we are prepared to support the Commission Staff to:

1. Ensure compliance with all applicable Commission Orders, and
2. Recommend as to whether SWEPCO's proposed AMS is in the public interest (including detailed review of rate recovery mechanisms and an initial expedited installation request).

Our assembled team has direct experience and specific qualifications, having been involved with the complicated and interconnected issues surrounding the review, investment, and roll-out of AMS for most of the past 15 years. Our experience includes working for and advising state commissions (both formally and informally) around the country on AMS, including the California Public Utilities Commission, Arkansas Public Service Commission, Rhode Island Public Utilities Commission, and Kentucky Public Service Commission. We have worked to implement policies created by federal initiatives, state legislation and commission orders. We have managed projects with technology experts and other stakeholders, including the design and implementation of customer data access programs and public system data portals (including hosting capacity maps) in California, Rhode Island and Minnesota.

This experience affords us a deep understanding of the issues, technologies and people involved that is hard to obtain without working directly on these topics. We understand the details and

benefits of AMS through our extensive experience working on these issues for over 10 years. Areas that we have direct experience in include:

- Reviewing utility AMS applications and cost recovery proposals
- Development of requirements for AMS applications
- Review of AMS costs and benefits
- Development of timelines for achieving AMS benefits for customers
- Development of data access and privacy requirements
- Integration of foundational understanding of the technology and standards that support AMS into the larger technology deployment roadmap and grid modernization initiatives

We have worked across a wide spectrum of issues, from the technical standards and requirements to questions of policy and equity.

The expertise sought by the Commission is itself unique because of the evolving nature of the issues. Over the past ten years or more, our team has helped craft, support and lead several dozen initiatives and proceedings addressing data access, privacy and security at state commissions and at the federal level (including at FERC, FCC, DOE, Congress, NIST and the development of the Green Button Initiative). We believe these unique qualifications may help focus discussions in Louisiana toward actionable conclusions and recommendations for consideration by the Commission that results in customer benefits.

2. Objectives and Goals

The Commission seeks a consultant to review SWEPCO's AMS system to ensure compliance with applicable Commission rules and that it is in the public interest. In particular, the Commission identifies the need for the proposed AMS to be consistent with Section 3.5 of its AMS/DR order issued September 22, 2009 in Docket No. R-29213. The guidance set out in the order will guide our review of the SWEPCO filing, but we will also leverage our experience reviewing AMS filings across the country over the past 10 years. In support of Commission Staff, we will review SWEPCO's filing in line with the following goals and threshold criteria:

- Is in the public interest
- Enables customer benefits
- Provides a timeline for customers to achieve identified benefits
- Minimizes impacts on customer bills
- Appropriately puts AMS in the context for the future electricity distribution system
- Is cost-effective
- Is technically sound and will be interoperable with existing and future technologies and applications
- Relies on relevant standards, including Green Button Connect My Data

3. Plan of Action Outline

The RFP anticipates the conclusion of this proceeding within 12 months of filing; this timeframe is reflected in this plan of action. In particular, the RFP identifies the need for the consultant to meet regularly with Commission Staff and Commissioners, prepare and review discovery, review testimony, submit testimony on behalf of the Commission, and assist with case strategy. To successfully meet the requirements as outlined in the RFP, E9 has organized its team to meet the needs of the Commission.

First, the E9 team and consultants will meet with the Commission to discuss the project, identify an appropriate schedule for activity, consistent with the schedule as adopted by the Commission, and review initial documentation. This includes our initial review and high-level takeaways regarding SWEPCO's AMS application.

Second, we will draft an initial set of our discovery findings and review responses to the discovery. This step will be ongoing per the schedule as adopted by the Commission.

Third, we will provide our detailed review of the AMS application, including our opinion of the reasonableness of the application, suggestions and recommendations regarding approval, modification, or rejection of the AMS application. We will include an economic, technical, and policy analysis of the filing, consistent with the AMS/DR order and our experience working on AMS efforts in other states and nationwide.

Fourth, we will work with staff to prepare testimony, including the drafting and submission of testimony. For the E9 team, Chris Villarreal will be the representative who will be preparing, drafting and submitting testimony, with support from the rest of the E9 team.

Fifth, we will review any additional testimony, including rebuttal testimony and will determine whether to file sur-rebuttal testimony, if necessary.

Sixth, we will work with and advise Commission Staff on trial preparation and briefing, including drafting of relevant sections for review by Commission Staff and Commission Counsel.

Lastly, throughout this effort, we will be available to meet with Commission Staff regularly, including participating in any public meetings with stakeholders and Commissioners. We will be prepared to adjust the workplan, deliverables and timelines as necessary and reasonable to meet the objectives of the overall engagement, as mutually agreed.

The E9 team has the requisite experience on AMS, as shown below, to provide the Commission Staff with detailed economic, technical, and policy expertise, consistent with the Commission's November 10, 2014 order on consultants. We will leverage our expertise to provide the Commission with our understanding of uses of AMS, identify benefits not included in the initial filing, determine an appropriate timeline for the achievement of benefits, and advise the Commission on appropriate steps to ensure that SWEPCO's AMS investment results in a benefit to customers.

The work plan, as described below, will ensure the completion of the tasks and support. The final report and presentation will be delivered in a timely manner that allows the Commission adequate time to consider the issues and incorporate the recommendations into their actions and potential orders.

4. Tasks and Phases

To meet the Action Plan described above, the E9 team proposes the following set of tasks and phases that will result in a successful review of SWEPCO's AMS filing. The Tasks are as follows:

Task I: Issue Evaluation

Our first task will be to review the General Order and other relevant orders to establish a detailed understanding of the proposal, establish that within the context of Louisiana regulatory objectives and identify the priority issues that should be addressed by the Commission Staff. During this task, the E9 team will work closely with Commission Staff to understand their perspective, as well as the perspectives of key stakeholders identified.

Task II: Case Strategy

Building from the issues evaluation and stakeholder discussions, the E9 team will develop an overall case strategy and related discovery requirements. (Our team brings substantial experience leading and managing stakeholder group engagement in regulatory discussions, including rate case settlements and technology deployments.)

Task III: Discovery

Consistent with the overall case strategy, the E9 team will lead all discovery requests and participation in ongoing discovery processes related to the overall proceeding.

Task III: Testimony and Hearing

In coordination with Commission Staff, the E9 team will prepare testimony that incorporates insights gained from direct conversations, consultation with Staff, review of the record and party comments, and our expertise on the topic. Summary information will be prepared and presented to the Commission in a report that provides an overview of the topic, examples from other jurisdictions, an analysis of the issues subject to the RFP, and recommendations. Testimony will be prepared that is appropriate to the proceeding requirements and procedural schedule. Chris Villarreal will lead the development of testimony and will be prepared to appear in person as required.

a. Deliverables and Timeline

As outlined in the RFP, there is not a defined and finite timeline for the work outlined in the RFP.

Our team will work with the Department to identify and provide regular updates on specific tasks, especially with regard to stakeholder engagement. To the extent that additional or interim deliverables are required, these will be incorporated into the initial workplan. Specific deliverables will include, at a minimum:

Deliverable I: Project Workplan

The project workplan will be completed within two weeks of project start. We will meet with staff leads and appropriate stakeholders to understand the objectives, tasks and priority concerns of the Commission Staff. Building from this foundation, we will develop a workplan.

Deliverable II: Recommendations

The issue scoping memorandum will identify the major issues, stakeholder concerns and possible actions or strategies. We anticipate the issue scoping memorandum will be the foundation for a significant consultation meeting with staff to orient the discovery for testimony. The outline and issue memorandum will be working documents that we expect will evolve in accordance with the dynamic nature of the process and will incorporate specific timeline considerations that align with the commission and department meetings.

Deliverable III: Discovery

Based on the issues identified in the scoping memorandum, we will draft multiple rounds of discovery to pursue distinct lines of inquiry.

Deliverable IV: Testimony

Based on the recommendations and results of discovery, our team, led by Chris Villarreal, will develop written testimony that will detail our findings, recommendations, and conclusions regarding the SWEPCO proposal. This testimony will also be informed by the Commission's AMS/DR order and discussions with Commission Staff regarding case strategy. This testimony will be submitted in accordance with the case schedule, as determined by the Commission, and drafts of Mr. Villarreal's testimony will be available in advance for Commission Staff review and input.

b. Team Organization

The organization of the team will be led by E9 Insight and Cameron Brooks, who will oversee project management. The team leads will work collaboratively to address specific tasks, recognizing the unique experiences and strengths of the expert consultants.

Although our team plans to work collaboratively across the entire project, we have identified particular areas of expertise of our team members and expect that they will lead discussions in those areas.

Chris Villarreal (Plugged In Strategies)

- AMS/AMI implementation in other states
- Customer data access and privacy
- Technical and policy review of AMS filings
- An identified witness representing E9 team

Jonathan Schrag (Taconic Advisory Partners)

- Data portal implementation
- Comprehensive data governance framework
- Evaluation of AMI proposals from over 20 jurisdictions with a focus on benefit-cost analyses.

Cameron Brooks & E9 Insight Staff

- 50-state policy landscape & best practices
- AMI implementation
- Data taxonomy
- Administration & Project Management

5. Qualification and Experience

This proposal is presented by a team of expert consultants with a successful history of working together and individually on a wide range of the leading issues surrounding grid modernization and advanced technologies.

a. Lead Consultants

Chris Villarreal (Plugged In Strategies)

Plugged In Strategies was started in 2017 by Chris Villarreal. Chris has worked on issues related to AMS/AMI applications since 2009, including overseeing the development of the California Public Utilities Commission data access and privacy rule and participating in the development of the DataGuard initiative by the U.S. Department of Energy and Volume 2 of the NISTIR 7628 on Data Security and Data Privacy developed by NIST. Chris has advised state commissions, both formally and informally, in Hawaii, Arkansas, Minnesota, Ohio, Kentucky, New Jersey, Connecticut, New Hampshire, and New York on topics related to AMS, including data access. Chris is also the author or co-author of several reports that relate to AMS, including writing a report, along with Cameron Brooks, sponsored by the U.S. Department of Energy that looked at state regulatory experiences with AMI since 2018. He has also worked on a number of technical components associated with AMS, including interoperability, the role of AMS in distribution planning, and interoperability. He is also an advisor to the National Association of Regulatory Utility Commissioners and works with its Center for Partnership and Innovation on a number of topics including utility financial toolbox initiative, National Council on Electricity Policy, and interoperability.

Jonathan Schrag (Taconic Advisory Services)

Jonathan Schrag brings over 15 years of experience working in utility regulatory policy. Jonathan started Taconic Advisory Services as a sole member LLC in March 2020, following four years as the Deputy Administrator of the Rhode Island Division of Public Utilities and Carriers (the Division). At Taconic, Jonathan has two engagements. First, Taconic provides regulatory strategy advice to Utilidata, Inc., a company that develops software for grid operations based on data analytics from advanced meters. In that capacity, Jonathan evaluated over 20 AMI proposals from multiple jurisdictions to develop a consistent comparison of benefits and costs.

From 2016 to 2020 Jonathan was the Deputy Administrator of the Rhode Island Division of Public Utilities and Carriers. There, he led the Rhode Island Power Sector Transformation process, a multi-agency initiative to understand the potential for advanced meters and grid modernization. Following submission of a grid modernization state plan, Jonathan led engagement with National Grid on the development of an AMI proposal for Rhode Island. He also collaborated on an initiative with National Grid to develop and deploy the Rhode Island System Data Portal that includes a range of distribution system reports and maps, including hosting capacity and congestion (“heat maps”).¹ The work product was the result of negotiation with stakeholders and the utility and was built from the experience of National Grid in New York. In addition, Jonathan was Senior Director for Clean Energy at Environmental Defense Fund from 2015 to 2016 and led the System Data Project, including work in Illinois on a data access protocol. From 2008 to 2011 Jonathan was the first Executive Director of the Regional Greenhouse Gas Initiative, a collaborative of ten northeastern states.

¹ <https://ngrid.apps.esri.com/NGSysDataPortal/RI/index.html>

Cameron Brooks (E9 Insight)

E9 Insight is a boutique research and advisory firm focused on the regulatory and policy environment of the U.S. electric industry. Since 2013, clients range from Fortune 500 to start-up companies and government agencies to advocacy groups. E9 Insight has particular expertise in organizing up-to-date dashboards and strategy recommendations across the 50 states. We have developed a suite of custom database tools that allows us to develop comprehensive reports that combine information from regulatory proceedings, insights from a trusted professional network, and market statistics. These methodologies are tailored to identify and track regulatory developments that support an understanding of industry trends and inform the development of regulatory best practices.

Cameron Brooks is the President of E9 Insight. As an advisor, Cameron serves as an advisor to a wide range of technology companies, advocacy coalitions and government agencies, including the Department of Energy and Lawrence Berkeley National Labs. Cameron has served in executive roles with clean energy companies and non-profits, including Opus One Solutions, Tendril, Renewable Choice Energy and the Clean Energy States Alliance. He studied Ecologic Design at Yale University and holds an MBA from Cornell. E9 and Cameron are based in Boulder, Colorado.

b. Qualifications

Together, this team brings unique capabilities and direct experience working specifically on AMS from a variety of perspectives.

Our individual careers have included direct experience working within the public utility commissions and state agencies in Minnesota, California, Connecticut and Rhode Island. Jonathan Schrag was responsible for the design and implementation of a utility system data portal, incorporating a hosting capacity map, in Rhode Island. As part of his role as commission staff, Jonathan attended "Camp NARUC" regulatory school 2016 and Michigan State University "Grid Modernization Boot Camp" 2017.

As consultants, we have advised and provided technical support to over 20 state commissions, as well as numerous projects for the Department of Energy and several national labs. We have worked with companies providing leading technology solutions and utility services, such as advanced meters, distribution system software and planning tools. We have supported stakeholder advocacy efforts focused on establishing updated data governance to support customer access and improved market opportunities for technologies that can provide important grid services

We understand the importance of ensuring that technology, like AMS, is implemented in a way that brings immediate benefits to customers, and is leveraged to support multiple utility purposes.

As an example of our experience, we have successfully worked together in previous engagements related to data access and customer privacy, which is an important component of enabling customer benefit from AMS. Chris and Cameron, with funding from the U.S. Department of Energy, provided education and expertise to state regulatory commissions

regarding data access and data privacy frameworks. Chris and Cameron also collaborated in the production of a report released for the U.S. Department of Energy on AMI business cases. Jonathan and Cameron collaborated on a project in 2015 to map the potential market relationships that would arise from the New York Reforming the Energy Vision initiative. Funded by the Energy Foundation, the project included a series of stakeholder summits and resulted in guidance memoranda for the New York State Department of Public Service.

We have trusted relationships with the leading thinkers and industry leaders, including with state regulatory commissions around the country, NARUC, NIST, and DOE, and companies working on hosting capacity models and data privacy and access frameworks. Lastly, we have extensive experience with facilitating meetings and productive collaboration that seeks reasonable solutions (and not gridlock). As former regulatory staff, we have run many workshops and working groups over the course of our careers. Similarly, Cameron has led multi-state, multi-agency collaborations and regularly organizes industry events, roundtables and dialogues.

c. Demonstrated Expertise & Experience

The RFP identifies expectations with regard to demonstrated experience and subject matter expertise. Our team, both individually and working in collaboration, has extensive experience across the broad range of issues surrounding AMS, including understanding the customer benefits from AMS. While these topics are highly interrelated, we have identified specific projects that we believe are directly relevant to the topics identified. The team has successfully collaborated together on previous engagements related to distribution grid data, markets and technology.

This team has worked closely with state commissions, either as staff or advising commissions, in the development of several policies and reports. The following includes examples of representative projects that demonstrate expertise and experience in the topic areas identified by the RFP.

AMS Implementation and Policy: Leading practices related to overall AMS deployment, the realization of customer benefits, cybersecurity, data access framework, grid planning and privacy requirements.

Our team has direct experience participating in and, in many cases, leading proceedings and regulatory initiatives to design and implement data access policies, procedures and privacy safeguards. This includes both advocacy in support of new policies and balancing the concerns of a diverse set of stakeholders as commission staff.

PROJECT: "AMI in Review: Informing the Conversation" (2019-2020)

Under contract to the U.S. Department of Energy, conducted a detailed review of advanced meter applications over a 10-year period, with particular focus on cost-benefit evaluations presented to regulatory commissions. Organized regional workshops and direct interviews with commissioners, utilities and stakeholders to validate analysis and conclusions. "AMI in Review: Informing the Conversation" report and compendium with reference materials of 600 filings from over 230 proceedings published in July 2020.

Report: <https://e9radar.link/ami-report>

Compendium: <https://e9radar.link/ami-compendium>

PROJECT: *Illinois Commerce Commission Data Access Framework*

As a participant in proceedings before the Illinois Commerce Commission on behalf of the Environmental Defense Fund developed comprehensive data access framework.

PROJECT: *Dataguard Technical Support (2018-present)*

Manage outreach technical assistance outreach to state commissions in support of U.S. DOE's Dataguard, which provides best practices guidance for customer energy usage data security and stewardship. In collaboration with a subcontractor, preparation of briefing materials for commission workshops.

PROJECT: *New York Department of Public Service*

Assisted the New York Department of Public Service in developing a new data access framework for New York State. This report details a new model for data access in New York, including access to customer energy usage data, access to aggregated customer data, and access to grid information.

PROJECT: *California Public Utilities Commission Report on Cybersecurity (2012)*

Co-authored report for California PUC on the topics and role of state regulatory commissions in reviewing and considering utility practices, policies, and investments on cyber-security.

PROJECT: *NIST Interagency Report 7628*

Participated in the development of the NISTIR 7628 Volume 2, Privacy and the Smart Grid. NISTIR 7628 was developed by NIST in 2010 to provide guidance to stakeholders on protecting the security and privacy of participants in the Smart Grid.

Cost-of-service utility regulation

Chris and Jonathan have each spent years working within state commissions as staff leading investigations within cost-of-service regulatory frameworks, including general rate cases.

PROJECT: *Rhode Island Power Sector Transformation (2016-2020)*

Led an inter-agency team to develop a roadmap for Rhode Island grid modernization spanning four workstreams, including (1) advanced meter connectivity, (2) distribution system planning, (3) strategic electrification and (4) performance-based earnings.

PROJECT: *2018 National Grid Electric and Gas Rate Case (2018-2019)*

Directed a team of rate analysts to engage National Grid's general rate case for gas and electric businesses, including the revenue requirement and rate design.

Experience: *Able to articulate in its proposal the areas and topics that the respondent will address and those it believes will be of most value, including demonstrated examples of experience*

Stakeholders: Able to demonstrate a track record of successfully working collaboratively with diverse groups of multi-sector stakeholders.

Project Management: Able to demonstrate the ability to meet all project deadlines and deliverables.

We believe that our experience demonstrates a consistent track record of successfully managing long-term stakeholder processes that balance a variety of interests. The projects below, in addition to being topically relevant, also involved significant stakeholder engagement. This team is well-experienced at facilitating meetings, coordinating multi-party interactions, seeking common ground and commitments to deadlines that ensure proceedings can move forward in a timely way.

PROJECT: 2018 National Grid Electric and Gas Rate Case (2018-2019)

Directed a team to craft a consensus settlement, including first-ever investments in electric vehicles and battery storage. Acted as a bridge between regulatory process, policy outcomes, and stakeholders.

PROJECT: Arkansas Public Service Commission (2018-2020)

Facilitated the Arkansas PSC’s proceeding on distributed energy resources, which included organizing agendas, identifying speakers, facilitating discussions and working groups, and meeting with PSC Commissioners and advisors on an ongoing basis to discuss topics of interest for the proceeding.

6. Cost Detail

For this proposal, E9 estimates a total cost of \$123,375. Cost estimates are based on expected time and materials requirements, which may be adjusted by mutual agreement during the course of this engagement.

	Hours	rate	total
<u>Task 1:</u>			
Research & Management	42	\$125	\$5,250.00
Executive and Consultant Experts	90	\$175	12,250.00
<u>Task 2:</u>			
Research & Management	28	\$125	3,500.00
Executive and Consultant Experts	180	\$175	31,500.00
<u>Task 3:</u>			
Research & Management	35	\$125	\$4,375.00
Executive and Consultant Experts	160	\$175	31,500.00
<u>Task 4:</u>			
Research & Management	28	\$125	\$3,500.00
Executive and Consultant Experts	180	\$175	31,500.00
TOTAL			\$123,375.00

CHRISTOPHER R. VILLARREAL

9492 Olympia Drive, Eden Prairie, MN 55347
email: chris@pluggedinstrategies.com

(415) 680-4224

EMPLOYMENT

NON-RESIDENT (ENERGY AND ENVIRONMENTAL POLICY) ASSOCIATE FELLOW SEPTEMBER 2019-CURRENT
R Street Institute *Washington, D.C.*

- Provide regulatory and policy support on topics including performance-based ratemaking, development of rules for integrated resource planning, distributed energy resources, and market-oriented solutions for customer choice and development of clean energy resources.
- Develop written materials summarizing regulatory actions on topics related to performance-based ratemaking, customer choice, distribution system planning, distributed energy resources, and other topics as needed.
- Participate in state and federal regulatory proceedings and working groups on development of performance-based ratemaking mechanisms, net energy metering, and integrated resource planning, including the review of utility proposals, participating in working groups to review and recommend metrics for performance-based ratemaking frameworks, and providing comments to state regulatory commissions on performance-based ratemaking metrics and frameworks.

PRESIDENT APRIL 2017-CURRENT
Plugged In Strategies *Eden Prairie, MN*

- Provide regulatory and policy analysis and consulting services related to evolution of electricity grid, distribution system planning, emerging customer and grid-connected technologies, and regulatory strategies
- Provide facilitation and moderation services for groups, workshops, and working groups
- Provide research and analysis services regarding utility and regulatory matters and structures
- Provide additional expert analysis on matters affecting electricity and regulatory structures, including topics such as data privacy, data access, rate design, interoperability, advanced technologies, performance-based ratemaking, and convergence of technology, industries, and markets.
- Provide expert testimony and presentations before state utility commissions on topics including distribution system planning, distributed energy resources, data privacy and data access, performance-based ratemaking, and grid modernization.
- Prepare training materials on distributed energy resources, interoperability, and grid modernization for international regulatory and policy decision-makers.

DIRECTOR OF POLICY MAY 2015- APRIL 2017
Minnesota Public Utilities Commission *Saint Paul, MN*

- Maintained high profile inside and outside the state representing the Commission on electricity matters.
- Assisted Commissioners with policy analysis to support decision-making options.
- Provided policy analysis to support development of record in proceedings.
- Provided subject matter expertise on specific topics, including rate design, energy storage, grid modernization, data privacy, data access, interconnection, and security.
- Organized workshops, including preparing agendas, inviting speakers, and moderating public panels.
- Engaged and interact with several national organizations, including National Association of Regulatory Utility Commissioners, Department of Energy, Federal Energy Regulatory Commission, National Institute of Standards and Technologies, North American Energy Standards Board, and Smart Grid Consumer Collaborative.
- Regularly spoke and participated in panels, conference, webinars, and other international, national, and state conferences on behalf of the Minnesota Public Utilities Commission.
- Engaged and worked with several state-level projects, including e21 Initiative and 2025 Energy Action Plan
- Participated in actions related to Midcontinent Independent System Operator product development, including demand response and energy storage.
- Chaired NARUC Staff Subcommittee on Rate Design, and managed development of Distributed Energy

Resources Rate Design and Compensation manual, which included meeting specific deadlines, organize and manage a group of seven staff from around the country to develop, draft, and finalize manual on time.

- Maintained an awareness and understanding of electricity policy developments across the country, including at national and state level; provide an analysis of these developments for Commissioners.

SENIOR REGULATORY ANALYST
California Public Utilities Commission

MARCH 2006- APRIL 2015
San Francisco, CA

Major Accomplishments:

- Staff lead on Commission Smart Grid rulemaking: responsible for coordinating Staff work on rulemaking, working with ALJ and Assigned Commissioner's Office, organizing and facilitating workshops on a number of Smart Grid-related topics, including cybersecurity, privacy, customer data access and other customer issues, and ensuring proceeding met legislatively mandated time-frame.
- Prepared initial Orders Instituting Rulemaking on energy storage, rate design reform, and Smart Grid, and assisted in completion of final Commission decisions on Smart Grid, rate design, customer access to data, and privacy.
- Named as a Top 50 Smart Grid Pioneers for 2013 by Smart Grid Today.
- Managed and facilitated Commission workshops on emerging topics, such as privacy, cybersecurity, energy storage, and customer data access.
- Provided lead and support analysis on many electricity issues affecting customers, market participants, and utilities, including dynamic pricing, demand response, energy efficiency, rate design, electric energy storage, direct access and retail/wholesale integration.
- Responsible for monitoring activities, preparing analyses of policies, and preparing and submitting comments related to specific subject areas before FERC, U.S. Congress, California State Legislature, CEC, DOE, NIST, and Office of Science and Technology Policy.
- Participated in standard making process, and prepared and submitted comments to FERC, NIST, and NAESB.
- Chair of NAESB Energy Services Provider Interface Task Force, and a member of NAESB Executive Committee.
- Lead author and contributor on White Papers related to several emerging topics, such as Pre-Pay, cybersecurity, and microgrids.
- Presented at conferences on updates and summaries of Commission position on Smart Grid issues, such as customer education, privacy, cybersecurity, customer access to usage, rate design and tariffs, and general regulatory policy.

PARALEGAL
Patton Boggs

NOVEMBER 2005-FEBRUARY 2006
Washington, D.C.

- Performed research at FERC, other Federal agencies, Congressional legislative history, and various state agencies.
- Cite-check, proofread, and shepardize pleadings filed at FERC and various U.S. Courts of Appeals.
- Organized and maintained discovery files.

PARALEGAL
McCarthy, Sweeney & Harkaway

JULY 2004- OCTOBER 2005
Washington, D.C.

- Performed research for FERC, other Federal agencies, U.S. Congress, state legislatures and state regulatory agencies.
- Obtained and summarized pleadings filed at FERC and courts for clients and attorneys.
- Performed energy-related research (*e.g.*, monitor Energy news, obtain FERC and U.S. Court cases and opinions) and maintained extensive knowledge of many energy issues (*e.g.*, RTOs, deregulation/competition, and California/Pacific Northwest refund proceedings at FERC and U.S. Courts).
- Prepared testimony and discovery-related materials for hearing before FERC Administrative Law Judge, and provided proofreading, cite-checking, and shepardizing assistance for documents filed at FERC, U.S.

Supreme Court, U.S. Court of Appeals and U.S. District Courts.

- Prepared briefs and appendices, and maintained and organized case files for proceedings before FERC and U.S. Court of Appeals.
- Monitored energy-related legislation and hearings before U.S. Congress and state legislatures, as well as energy-related activities at state PUC levels (*e.g.*, electric competition/deregulation activities).

PARALEGAL

Duane Morris, LLP

MARCH 2003- JUNE 2004

Washington, D.C.

- Performed research at FERC and other Federal agencies. Monitored FERC meetings and prepared summaries of meeting for attorneys and clients.
- Obtained and summarized pleadings filed at FERC and courts for clients and attorneys.
- Performed energy-related research (*e.g.*, monitor Energy news, obtain FERC and U.S. Court cases and opinions) and maintained knowledge base on many energy issues (*e.g.*, RTOs, deregulation/competition, and California/Pacific Northwest refund proceedings at FERC and U.S. Courts).
- Prepared testimony and discovery-related materials for hearing before FERC Administrative Law Judge, and provided proofreading, cite-checking, and shepardizing assistance for documents filed at FERC, U.S. Supreme Court, U.S. Court of Appeals, and U.S. District Courts.
- Monitored energy-related legislation and hearings before U.S. Congress and state legislatures, as well as energy-related activities at state PUC levels (*e.g.*, electric competition/deregulation activities).

LEGAL ASSISTANT

McGuireWoods LLP

APRIL 2001-MARCH 2003

Washington, D.C.

- Performed research at FERC and other Federal agencies. Monitored FERC meetings and prepared summaries of meeting for attorneys and clients.
- Performed energy-related research (*e.g.*, monitor energy news, obtain FERC and U.S. Court cases and opinions) and responsible for monitoring energy issues for attorneys (*e.g.*, RTOs, deregulation/competition, generation interconnection, and California/Pacific Northwest refund proceedings at FERC and U.S. Courts).
- Prepared testimony and discovery-related materials for hearing before FERC Administrative Law Judge, and provided proofreading, cite-checking, and shepardizing assistance for documents filed at FERC, U.S. Supreme Court, U.S. Court of Appeals for D.C. Circuit and 9th Circuit, and U.S. District Court for D.C.
- Monitored energy-related legislation and hearings before U.S. Congress and state legislatures, as well as energy-related activities at state PUC levels (*e.g.*, electric competition/deregulation activities).

ENERGY SPECIALIST

Verner, Liipfert, Bernhard, McPherson, & Hand

MARCH 1998- APRIL 2001

Washington, D.C.

- Performed research at FERC, SEC, Library of Congress, U.S. Congress, NRC, Department of Interior, National Archives, EPA, U.S. Supreme Court, U.S. Court of Appeals for D.C. Circuit, U.S. District Court for D.C., and other state agencies.
- Performed and monitored energy and environmental-related research.
- Made filings at FERC, U.S. Court of Appeals for D.C. Circuit, U.S. District Court for D.C., and SEC.
- Provided proofreading assistance, including cite-checking and shepardizing of documents.
- Attended U.S. Congress hearings on Energy issues and summarized for attorneys.
- Organized and maintained Energy Group library and trade press.
- Supervised Energy Group Summer intern.

EDUCATION

BACHELOR OF ARTS IN HISTORY
Baylor University

1993-1997
Waco, Texas

ASSOCIATIONS

- Board of Directors, Minnesota Conservative Energy Forum
- Board of Directors, Minnesota Solar Energy Industries Association
- Associate Member, GridWise Architecture Committee
- Planning Commission, City of Eden Prairie, MN (2017-2020)
- Board of Directors, Emeritus, North American Energy Standard Board
- Executive Committee, Emeritus, Retail Markets Quadrant, North American Energy Standards Board
- Board of Directors, Emeritus, Smart Grid Consumer Collaborative
- Chair, Staff Subcommittee on Rate Design, National Association of Regulatory Utility Commissioners (November 2015-April 2017)
- Co-Chair, Business and Policy Domain Expert Working Group, Smart Grid Interoperability Panel (2014-2016)

PUBLICATIONS

- *Investigating Interoperability for Electric Vehicles: A Case Study from Connecticut*, National Association of Regulatory Utility Commissioners, on behalf of the Connecticut Public Utilities Regulatory Authority (October 2021)
[http://www.dpuc.state.ct.us/2nddockcurr.nsf/4b3c728dd1c0d642852586db0069aa70/4bbe04558990992285258764005afb5e/\\$FILE/NARUC%20CT%20Case%20Study%20on%20EV%20Interoperability-submission.pdf](http://www.dpuc.state.ct.us/2nddockcurr.nsf/4b3c728dd1c0d642852586db0069aa70/4bbe04558990992285258764005afb5e/$FILE/NARUC%20CT%20Case%20Study%20on%20EV%20Interoperability-submission.pdf)
- *AMI in Review: A Lens into an Unfolding Future*, T&D World (March 5, 2021)
<https://www.tdworld.com/smart-utility/metering/article/21157103/ami-in-review-a-lens-into-an-unfolding-future>
- *Enabling and Benefiting from Distributed Energy Resources in Texas*, R Street Policy Study No. 211, R Street Institute (November 2020)
<https://www.rstreet.org/wp-content/uploads/2020/11/Final-No-211-DEs.pdf>
- *Net Metering and Distributed Energy Resources Policy: R Street Shorts No. 93*, R Street Institute (August 2020)
<https://www.rstreet.org/wp-content/uploads/2020/08/Short-No.-93-Net-Metering.pdf>
- *AMI in Review: Informing the Conversation*, U.S. Department of Energy, Advanced Grid Research (July 2020)
https://smartgrid.gov/files/documents/AMI_Report_7_8_20_final_compressed.pdf
- *Smart Grid Interoperability: Prompts for State Regulators to Engage Utilities*, National Association of Regulatory Utility Commissioners (April 2020).
<https://pubs.naruc.org/pub/28950636-155D-0A36-313C-73CCEA2D32C1>
- *Framework and Roadmap for Smart Grid Interoperability Standards Regional Roundtables Summary Report*, NISTIR 8284, National Institute of Standards and Technology, *et al.* (February 2020).
<https://doi.org/10.6028/NIST.IR.8284>

- *Distributed Energy Resources Rate Design and Compensation Manual*, National Association of Regulatory Utility Commissioners, Staff Subcommittee on Rate Design (November 10, 2016).
<http://pubs.naruc.org/pub/19FDF48B-AA57-5160-DBA1-BE2E9C2F7EA0>
- *Microgrids: A Regulatory Perspective*, California Public Utilities Commission, Policy and Planning Division (April 14, 2014).
<http://www.cpuc.ca.gov/NR/rdonlyres/01ECA296-5E7F-4C23-8570-1EFF2DC0F278/0/PPDMicrogridPaper414.pdf>
- *Utility Investment Valuation Strategies: A Case for Adopting Real Options Valuation*, California Public Utilities Commission, Policy and Planning Division (October 3, 2013).
<http://www.cpuc.ca.gov/NR/rdonlyres/D5C63A2B-40F2-468D-964A-F265B90346B1/0/Final2RRM.pdf>
- *Cybersecurity and the Evolving Role of State Regulation: How it Impacts the California Public Utilities Commission*, California Public Utilities Commission, Grid Planning and Reliability/Policy and Planning Division Policy Paper (September 19, 2012).
<http://www.cpuc.ca.gov/NR/rdonlyres/D77BA276-E88A-4C82-AFD2-FC3D3C76A9FC/0/TheEvolvingRoleofStateRegulationinCybersecurity9252012FINAL.pdf>
- *A Review of Pre-Pay Programs for Electricity Service*, California Public Utilities Commission, Policy and Planning Division Policy Paper (July 26, 2012).
<http://www.cpuc.ca.gov/NR/rdonlyres/152ED1D4-DD85-4D6F-984B-B84847933A18/0/Prepaypolicypaper0712.pdf>
- *Electric Energy Storage: An Assessment of Potential Barriers and Opportunities*, California Public Utilities Commission, Policy and Planning Division (July 9, 2010).
<http://www.cpuc.ca.gov/NR/rdonlyres/71859AF5-2D26-4262-BF52-62DE85C0E942/0/CPUCStorageWhitePaper7910.pdf>

TESTIMONY

- *In the matter of the application of Consumers Energy Company for authority to increase its rates for the generation and distribution*, Direct Testimony of Christopher Villarreal on Behalf of Michigan Environmental Council, Natural Resources Defense Council, and Sierra Club, before the Michigan Public Service Commission, Case No. U-20134 (September 10, 2018)
<https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t0000002ftVkAAI>
- *In the matter of the application of DTE ELECTRIC COMPANY for authority to increase its rates, amend its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority*, Direct Testimony of Christopher Villarreal on Behalf of Michigan Environmental Council, Natural Resources Defense Council, and Sierra Club, before the Michigan Public Service Commission, Case No. U-20162 (November 7, 2018)
<https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t000000329ckAAA>
- *Application of Duke Energy Carolinas, LLC for Adjustments in Electric Rate Schedules and Tariffs and Request for an Accounting Order*, Direct Testimony of Christopher Villarreal on Behalf of South Carolina Solar Business Alliance, before the Public Service Commission of South Carolina, Docket No. 2018-319-E (February 26, 2019)
<https://dms.psc.sc.gov/Attachments/Matter/499c7e9c-65b6-4469-afbd-9d7614711b84>

- *Application of Duke Energy Progress, LLC for Adjustments in Electric Rate Schedules and Tariffs and Request for an Accounting Order*, Direct Testimony of Christopher Villarreal on Behalf of South Carolina Solar Business Alliance, before the Public Service Commission of South Carolina, Docket No. 2018-318-E (March 1, 2019)
<https://dms.psc.sc.gov/Attachments/Matter/ce0917d7-35f2-4bb0-8715-5c2345a5026c>
- *In the matter of the Application of Indiana Michigan Power Company for authority to increase its rates for the sale of electric energy and for approval of depreciation rates and other related matters*, Direct Testimony of Christopher Villarreal on Behalf of the Environmental Law and Policy Center, the Ecology Center, the Solar Energy Industries Association, and Vote Solar, before the Michigan Public Service Commission, Case No. U-20359 (October 17, 2019)
<https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t00000077IYRAA2>
- *In the matter of the Application of DTE Electric Company for authority to increase its rates, amend its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority*, Direct Testimony of Christopher Villarreal on Behalf of the Environmental Law & Policy Center and the Natural Resources Defense Council, before the Michigan Public Service Commission, Case No. U-20561 (November 6, 2019)
<https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t0000007X6ZiAAK>
- *In the matter of the Application of Consumers Energy Company for authority to increase its rates for the generation and distribution of electricity and for other relief*, Direct Testimony of Christopher Villarreal on Behalf of Michigan Environmental Council, Natural Resources Defense Council, Sierra Club, and Citizens Utility Board of Michigan, before the Michigan Public Service Commission, Case No. U-20697 (June 24, 2020).
<https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t000000CIwhzAAD>
- *In the matter of the Application of Consumers Energy Company for authority to increase its rates for the generation and distribution of electricity and for other relief*, Direct Testimony of Christopher R. Villarreal on Behalf of Michigan Environmental Council, Natural Resources Defense Council, Sierra Club, and Citizens Utility Board of Michigan, Case No. U-20963 (June 22, 2021).
<https://mi-psc.force.com/sfc/servlet.shepherd/version/download/068t000000Pvx0LAAR>

PROFESSIONAL OVERVIEW

Jonathan Schrag has over fifteen years of experience working in utility regulatory policy. He has led complex strategy and cross-functional team engagements in a range of government, academic and consulting contexts.

REPRESENTATIVE PROJECT EXPERIENCE

- ◆ *R.I. Power Sector Transformation*: led an inter-agency team to develop a roadmap for R.I. grid modernization spanning four workstreams: advanced meter connectivity, distribution system planning, strategic electrification and performance-based earnings.
- ◆ *2018 National Grid Electric and Gas Rate Case*: directed a team to craft a consensus settlement, including first-ever investments in electric vehicles and battery storage. Acted as a bridge between regulatory process, policy outcomes, and stakeholders.
- ◆ *R.I. System Resilience and Procurement Working Group*: co led a team with National Grid to develop a system data portal including hosting capacity and congestion data for the Rhode Island electric distribution system.
- ◆ *R.I. Heat Sector Transformation*: co-led the policy and stakeholder process to develop long-term strategies for Rhode Island's natural gas sector, including electrification of buildings.
- ◆ *Regional Greenhouse Gas Initiative*: chief administrative officer for implementation of the first carbon market in North America.

WORK HISTORY

- Taconic Advisory Services, LLC* 2020 - present
- Develop regulatory strategy for Utilidata, focused on AMI, decarbonization and distribution grid-edge software.
 - Develop a series of transformational R.I. energy projects for ETHOS, a project of the Rhode Island Partnership.
- Deputy Administrator, Rhode Island Division of Public Utilities and Carriers* 2016-2020
- Oversaw regulatory intervention on behalf of Rhode Island for electricity, water, and natural gas.
 - Led the "Heating Sector" workstream as one of four inter-agency teams to coordinate climate change policy.
- Senior Director Clean Energy, Environmental Defense Fund* 2015-2016
- Refocused EDF's Clean Energy program strategy on deep de-carbonization.
 - Developed new program areas to address electric system data utilization.
 - Led internal policy review of out-of-market subsidies for nuclear generation.
- Senior Fellow, Guarini Center, New York University School of Law* 2013-2015
- Led an Energy Foundation funded project on innovative market relationships under the NY REV.
 - Assisted an analysis of NY State's carbon reduction investment programs.
- Deputy Commissioner for Energy, Connecticut Dept. of Energy and Environmental Protection* 2011-2012
- Created a statewide template for energy efficiency performance contracts.
 - Developed a first-in-the-nation \$65 million pilot program for "microgrid" electrical infrastructure resiliency.
- Executive Director, Regional Greenhouse Gas Initiative, Inc.* 2008-2011
- Administrator of the first cap-and-trade system for carbon emissions in the U.S.
- Executive Director, Lenfest Center for Sustainable Energy, Earth Institute at Columbia University* 2005-2007
- Directed \$2 million annual energy program on low-carbon technologies and policies.
 - Acted as chief of staff for energy policy for faculty from engineering, climate science and economics.
- Policy Associate, Center for Carbon Management, Dept. of Environmental Engineering, Columbia University* 2004-2005
- Authored technical papers on energy technologies Global Roundtable on Climate Change.
- PROFESSIONAL SERVICE**
- *Non-Resident Fellow*, Boston University Institute of Sustainable Energy 2016- 2020
 - *Executive Board Member*, Northeast Combined Heat and Power Initiative 2009-2012
 - *Staff Research Director*, Global Roundtable on Climate Change, Working Group on Energy Technology 2004-2007

EDUCATION

- Harvard University, Dept. of History, PhD Candidate in History of Business in Latin America (withdrew ABD) 1996-2003
- Harvard University, Dept. of History, AB cum laude 1993
- Mellon Foundation Fellowship in Latin American History (2000); Fulbright Scholar (Mexico, 1999)



PERSONNEL

Cameron Brooks, President

Cameron Brooks is an expert on electricity policy and the regulated utility industry, creating new business opportunities that leverage policy and emerging markets. Cameron is founder and President of E9 Insight, a Boulder, Colorado, research firm that provides customized research on the U.S. and international electric utility industry. Cameron also founded and leads Tolerable Planet Enterprises, an advisory firm that provides a unique combination of regulatory engagement, business development and policy strategy for philanthropies, advocates, technology providers and government agencies. In these capacities, clients include Google, Energy Foundation, Virgin Unite, U.S. Department of Energy, Lawrence Berkeley National Laboratory and a wide range of high-growth clean technology companies. Cameron has held executive roles with clean energy companies and non-profits, including Opus One Solutions, Tendril, Renewable Choice Energy and the Clean Energy States Alliance. Cameron's earlier experience spans a wide range of environmental, green building and adventure and environmental media roles. Cameron is a graduate of Yale University (Cultural Ecology and Ecologic Design) and holds an MBA from Cornell University (including an immersion in energy markets). He and his family live in Boulder, Colorado.

Christina Gosnell, Director

Christina Gosnell leads research and client relations for E9 Insight. In this capacity, she is responsible for leading a research team that tracks electric utility regulation across the US to help clients navigate the regulatory landscape, stay apprised of market opportunities, influence rulemaking processes and drive industry thinking. Christina coordinates research analysts, strengthens client relationships and manages intern teams to lead customized research projects. Christina is also President of Catalyst Cooperative, which provides policy analysis and software development of an open source platform that standardizes and analyses multiple federal data sources regarding electric generation infrastructure. Christina is a graduate of University of Colorado and lives in Philadelphia, Pennsylvania.

Sam Kozel, Director

Sam Kozel leads oversight of the E9 Insight analyst team, business strategy, maintaining daily operations, and providing clients with curated research and analysis. In this role, Sam ensures that clients understand complex regulatory environments and delivers actionable and relevant information to advance business development and policy strategy. Previously, Sam worked for a renewable energy project developer, including software implementation, financial modeling, site assessments and logistical support for projects. Sam is a graduate of University of Vermont and holds a Masters degree in Environmental Management from Western State Colorado University. He lives in San Francisco, California.



CAMERON BROOKS

3020 Jefferson Street • Boulder, Colorado 80304 • (303) 957-7667 • cameron@tolerableplanet.com

PROFESSIONAL EXPERIENCE

- 2013 - present **E9 INSIGHT** Boulder, Colorado
President...Custom Policy Research and Regulatory Analysis
- Subscription database and custom research of regulatory activities for leading electric utility industry companies, agencies and organizations, such as DOE, LBNL, Nest, Enernoc, EDF and over 50 other clients.
 - Led sales, operations and company expansion of more than 10 staff.
- 2002 - present **TOLERABLE PLANET ENTERPRISES** Boulder, Colorado
President...Clean Energy Strategy and Policy Advisory
- Consulting to technology companies and new energy advocates, including Google, Energy Foundation, Varentec, EnergyHub, Mission:data, Nest, Sunverge and others.
- 2008 - 2012 **TENDRIL** Boulder, Colorado
Vice President, Policy (2011-2012)
Senior Director, Market Development & Policy Strategy (2008-2011)
- Led regulatory engagement and market segmentation for over \$50m utility sales pipeline with interdisciplinary staff and advisory team
 - Instrumental role in coalition efforts establishing Green Button, securing data access commitments for over 30m electric consumers
- 2006 - 2008 **RENEWABLE CHOICE ENERGY** Boulder, Colorado
Vice President, Resource Development
- Managed renewable energy credit (REC) and carbon offset portfolio
- 2002 - 2006 **CLEAN ENERGY GROUP** Montpelier, Vermont
Consultant 2002; Project Director 2003 - 2006
- Program and financial advisor to Clean Energy States Alliance, coalition of state public benefit funds responsible for over \$4 billion

PREVIOUS PROFESSIONAL EXPERIENCE

Telluride, Colorado

- 1991 - 2001 **TELLURIDE NEGAWATT** (*President, energy-efficiency & renewable energy consulting*)
MOUNTAINFILM IN TELLURIDE (*Assistant Director, adventure & environmental film festival*)
SHEEP MOUNTAIN ALLIANCE (*Executive Director, community environmental advocacy*)
SAN JUAN HUT SYSTEMS (*Business Development Manager and Backcountry Ski Guide*)

EDUCATION

- CORNELL UNIVERSITY** Ithaca, New York
Johnson Graduate School of Management
Master of Business Administration, May 2003, *with honors*
- YALE UNIVERSITY** New Haven, Connecticut
Bachelor of Arts, Cultural Ecology and Ecologic Design
May 1991, *magna cum laude*



PROFESSIONAL EXPERIENCE

- 2016 - present **E9 INSIGHT** San Francisco, California
Director & Policy Analyst
- Responsibilities include oversight of the analyst team, convening on business strategy and development, and maintaining daily operations, including curating research and analysis.
 - This role requires a high degree of adaptability to prioritize a wide range of work flows, often independently. I strive to advance clients understanding of their regulatory environments by bringing visibility to actionable and relevant information out of the regulatory space
- 2016 **NUNATAK ALTERNATIVE ENERGY SOLUTIONS** Crested Butte, Colorado
Customer Relations Management/Project Management
- Set up monitoring system software, building financial modeling and general project support. Led site assessments to determine resource potential and identify new project opportunities for sales.
 - As Project Manager, my work ensures projects are appropriately scheduled, equipment is ordered, on-hand, and that associated utility compliances were filed to ensure interconnection.

COMMUNITY LEADERSHIP

- 2013 – 2016 **THE CLIMATE REALITY PROJECT** (*Climate Reality Leader*)
CONSERVATION COLORADO (*Western Slope Field Coordinator*)
WESTERN STATE ZERO WASTE PROJECT (*Project Manager*)
SUSTAINABLE ACTION COMMITTEE, WESTERN STATE (*Student Chair*)

RELEVANT ACADEMIC EXPERIENCE

- 2014 - 2016 **MASTERS THESIS PROJECT**
Project Management of Energy Systems; Barriers to rural distributed generation at Western
- Lead a stakeholder group, including university faculty, city council, electric utility, power providers, and solar developers to amend our power contract to allow for a NEM exception of 500 kW.
 - Developed financial models on project feasibility and convened with university administration to issue an RFP for a 500 kW solar array.
- 2014 - 2015 **GUNNISON COUNTY ELECTRIC ASSOCIATION**
Graduate Fellow
- Managed a team to build an outreach and communication plan for the utility weatherization programs. This required targeted messaging, social media outreach, organizing community events and capacity building amongst stakeholder channels.

EDUCATION

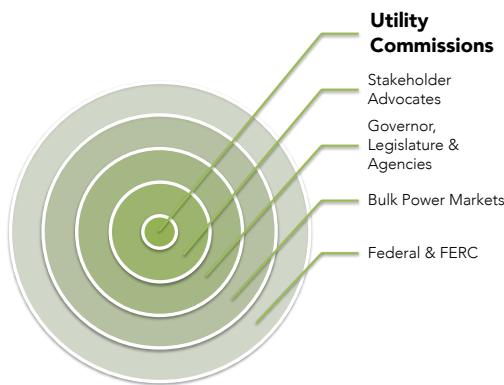
- WESTERN STATE COLORADO UNIVERSITY** Gunnison, Colorado
Masters Environmental Management (MEM), GPA 3.92
Concentration: Sustainable and Resilient Communities, December 2016
- UNIVERSITY OF VERMONT** Burlington, Vermont
Bachelors of Science in Business Administration
Concentration: Marketing, May 2008



E9 INSIGHT OVERVIEW OF SERVICES

“E9 works to create a personalized, targeted focus on regulatory changes important to our organization. They empower us to quickly avoid distractions and spend our time on the issues that matter.”

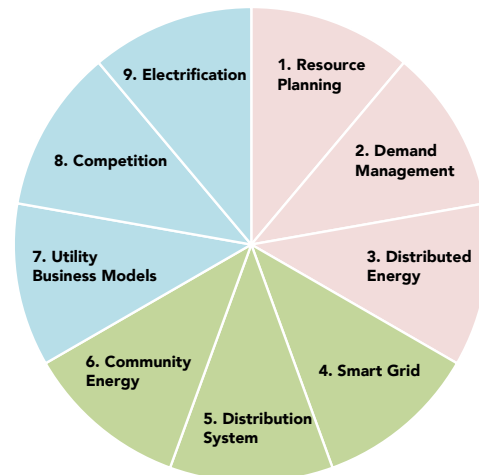
E9 Insight provides a unique combination of services tailored to find opportunities to transform the electricity industry. As a research firm, we translate the complicated, nuanced (and sometimes obfuscated) regulatory landscape into simple intuitive reports and visualization tools. As a strategic advisory firm, we help clients engage effectively with the policy leaders and decisions that are transforming the electricity industry in the United States.



Our primary focus – and the foundation of most of our services – is a real-time understanding of the activities of the public utility commissions within the context of the unique policy ecosystem in each state. This intelligence provides an informed 50-state “radar” of ongoing policy initiatives and the people that serve as commissioners, staff and stakeholders. Using a suite of custom database tools, E9 provides up-to-date dashboards and strategy recommendations with insights from a trusted professional network.

Founded in 2013, E9 Insight’s clients include a broad cross-section of technology companies, financial investors, policy advocates and government agencies, ranging from Fortune 500 to start-ups.

Our products and services include ongoing monitoring and updates, targeted research reports or analysis, and development of stakeholder and advocacy campaigns. All of our engagements are custom-designed to meet the style, timelines and strategic needs of our client teams.



E9 Insight focuses on nine primary activity domains at state public utility commissions.

STANDARD PRICING

POLICY INTELLIGENCE

Real-time, ongoing updates about ongoing proceedings and policy initiatives, including insights into new rulemakings and proceedings, funding opportunities, policy investigations and industry trends. Monthly reports highlight client-specific recommendations for activities across the 50 states, as well as more detailed summaries in select priority states. Reports are supplemented with on-demand research and consultation. Standard packages and customizations include:

- **Monthly Briefings**
- **Additional Jurisdictions**
- **Targeted Stakeholder Engagement**
- **Branded Newsletter**
- **Additional Capacity**

ANALYSIS & DILIGENCE

Targeted research, analysis and interpretation with recommendations. This research typically includes detailed interviews, literature reviews, policy diligence and strategy development to support internal decision-making or public-facing advocacy and communications efforts.

- **Diligence Analysis**
- **Published Reports**

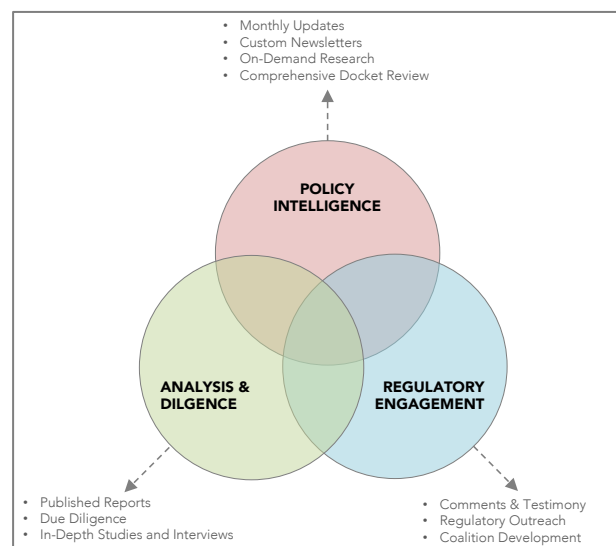
REGULATORY ENGAGEMENT

Leveraging a network built over many years, E9 maps opportunities and organizes outreach campaigns and direct meetings to execute business development and policy advocacy campaigns. E9's familiarity with the regulatory atmosphere allows for effective, organized, and timely action, including development of comments, testimony and filings. E9 also organizes hosted events for communications and facilitated meetings.

- **Outreach and Liaison Retainer**
- **Comments and Testimony**
- **Filing Support**

Customized Solutions. Our client engagements typically a combination of these three core service offerings, such as:

- *National updates:* General activity updates, including maps and links across 50 states
- *Priority states:* Additional analysis, insights, and proceeding details in 8-10 states
- *Target states:* In-depth analysis and briefs on proceedings and stakeholder activities in 1-2 states
- *Engagement:* Organized meetings with select commissioners, staff and key advocates.





Clients.

E9 Insight engages in research that is used by leading companies, advocacy coalitions, government and academic researchers. Since 2013, we have found that the cross-cutting nature of our clients' interests and research requests enhance our overall capabilities in a complementary and synergistic manner.

Representative clients include:

<i>Aclara</i>	<i>Itron</i>
<i>Alarm.com</i>	<i>Landis+Gyr</i>
<i>Allete</i>	<i>Lawrence Berkeley National Lab (LBNL)</i>
<i>BayWa Renewables</i>	<i>Microsoft</i>
<i>Blackstone</i>	<i>Mission:data</i>
<i>BC Hydro</i>	<i>Navigant Consulting</i>
<i>Ceres</i>	<i>NEMA</i>
<i>ChargePoint</i>	<i>Nest</i>
<i>CLEARResult</i>	<i>New West Technologies</i>
<i>Comverge</i>	<i>NRG</i>
<i>Consumers Energy</i>	<i>Opus One Solutions</i>
<i>Direct Energy</i>	<i>Pacific Northwest National Lab (PNNL)</i>
<i>E Source</i>	<i>Regulatory Assistance Project (RAP)</i>
<i>Ecobee</i>	<i>RES Americas</i>
<i>Energy Foundation</i>	<i>Rhode Island DPUC</i>
<i>EnergyHub</i>	<i>Smart Energy Consumer Collaborative (SECC)</i>
<i>Enerknol</i>	<i>Smart Grid Interoperability Panel (SGIP)</i>
<i>Enernoc</i>	<i>Sierra Club</i>
<i>Environmental Defense</i>	<i>Simple Energy</i>
<i>First Fuel</i>	<i>Southern California Gas</i>
<i>Franklin Energy</i>	<i>Sunverge</i>
<i>General Infrastructure</i>	<i>Telluride Venture Accelerator</i>
<i>Google</i>	<i>Tendril</i>
<i>Gravity Renewables</i>	<i>ThinkEco</i>
<i>Greentech Media</i>	<i>Uplight</i>
<i>GridLab</i>	<i>U.S. Department of Energy (DOE)</i>
<i>Gridwise Alliance</i>	<i>U.S. Environmental Protection Agency (EPA)</i>
<i>Honeywell</i>	<i>Varentec</i>
<i>ICF International</i>	