BEFORE THE NEW YORK STATE
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Orange and Rockland Utilities, Inc. for Electric Service	)	**Case 18-E-0067**

Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Orange and Rockland Utilities, Inc. for Gas Service	)	**Case 18-G-0068**

DIRECT TESTIMONY OF KARL R. RÁBAGO ON BEHALF OF PACE ENERGY AND CLIMATE CENTER

May 25, 2018

TABLE OF CONTENTS

LIST OF EXHIBITS

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Karl R. Rábago. My business address is 78 North Broadway, White Plains, New York 10603.

Q. What is your occupation?

A. I am the Executive Director of the Pace Energy and Climate Center ("Pace") at the Elisabeth Haub School of Law.

Q. What is Pace?

A. Pace is a project of the Elisabeth Haub School of Law at Pace University. As a non-partisan legal and policy think tank, Pace develops cost-effective solutions to complex energy and climate challenges, seeking to positively transform the way society supplies and consumes energy. For more than twenty-five years, Pace has been providing legal, policy, and stakeholder engagement leadership in New York, the Northeast, and other jurisdictions. Located on the campus of the Elisabeth Haub School of Law, Pace engages and leverages a strong legal faculty and student body in its work, particularly through the internationally recognized Environmental Law Program and the Pace Land Use Law Center. Pace has many years of success in working with and supporting the New York State Energy Research and Development Authority, the New York Public Service Commission ("Commission"), and the New York State Department of Environmental Conservation. Pace's work also includes strategic engagement with state legislative and executive officials and participation in key Commission proceedings. In these capacities, Pace has had the opportunity to form long-lasting partnerships within the community of non-governmental organizations that work in the field of energy.

Q. Please summarize your background and experience.

A. I have more than 25 years' experience in electric utility regulation, the electricity business, technology development, and markets. I am an attorney with degrees from Texas A&M University and the University of Texas School of Law, and post-doctorate degrees in military and environmental law from the U.S. Army Judge Advocate General's School and Elizabeth Haub School of Law, respectively. Of note, my previous employment experience includes serving as a Commissioner on the Public Utility Commission of Texas, Deputy Assistant Secretary of Energy with the U.S. Department of Energy, Vice President at Austin Energy, and Director of Regulatory Affairs with the AES Corporation. I am also principal of Rábago Energy LLC, a consulting practice operating in New York. A detailed resume is annexed hereto as Exhibit KRR-1.

Q. Have you previously testified before this or any other regulatory commission?

A. I previously submitted testimony in several rate cases and rulemaking proceedings before the Commission. In the past four years, I have submitted testimony, comments, or presentations in proceedings in Arkansas, Arizona, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Indiana, Iowa, Kansas, Kentucky, Louisiana, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, North Carolina, Ohio, Rhode Island, Virginia, and Wisconsin. A listing of my recent previous testimony is annexed hereto as Exhibit KRR-2.

Q. On whose behalf are you testifying in this proceeding?

A. I am testifying on behalf of Pace in this proceeding.

Q. What is the purpose of your testimony?

A. I offer testimony to provide a critical perspective on selected issues raised by the application of Orange and Rockland Utilities, Inc. ("Company" or "O&R") to change its rates for electric and gas service and for other authority in Cases 18-E-0067 and 18-G-0068.

Q. What issues are addressed by your testimony?

A. In my testimony I address several issues that relate to the Company's approach to its role as an energy services company set on a path toward transforming itself into a platform provider under the Commission's Reforming the Energy Vision ("REV") process.[1] These issues are:

- <u>Electric Cost of Service Study ("ECOSS"), Customer Costs, and the Residential Customer Charge</u>: This testimony describes major flaws with the Company approach to its ECOSS and the way it classifies costs as customer costs. I recommend substantial changes to the methodologies used by the Company and propose an alternative residential customer charge of $10.48 per customer per month.
- <u>Gas Issues</u>: My testimony covers issues relating to the Company's gas delivery forecast, gas expansion proposals, and policy issues relating to gas expansion. I recommend revisions to forecasting methods, a moratorium on gas expansion spending, and the development of a comprehensive Benefit-Cost Analysis ("BCA") tool.

[1] *See generally* Case No. 14-M-0101, *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*.

- Recovery of Trade Association Dues in Customer Rates: I review the Company's proposal to charge customers for more than $233,000 in dues paid to the Edison Electric Institute and American Gas Association. I find that the Company has failed to substantiate its proposal and to ensure that customers would not be charged for lobbying activities conducted by those organizations. I therefore recommend disapproval of rate recovery of these costs.

II. ELECTRIC COST OF SERVICE, CUSTOMER COSTS, AND CUSTOMER CHARGE

A. Flaws in the Company's Methods and Proposal

Q. What does the Company propose relating to the residential customer charge?

A. The Company proposes to increase the fixed monthly customer charge from $20 per customer per month to $22 per customer per month.[2]

Q. What is the overall effect of the Company's proposed fixed customer charge for residential customers?

A. The proposed change in the fixed customer charge would be a 10% increase in what is already one of the highest fixed customer charges in the State of New York. The fixed customer charges assessed by large New York utilities are higher than those in neighboring states and in the United States in general,[3] and the Company's fixed charge is one of the highest in New York State.[4]

---

[2] Company Ex. ERP-1, sched. 1 at 1.

[3] *See* Acadia Center, Residential Fixed Charges in NY: The Need for Consumer-Friendly Rate Design at 1–2 & fig.1 (2017), http://acadiacenter.org/wp-content/uploads/2017/07/Acadia-Center-Residential-Fixed-Charges-in-NY-July-2017.pdf.

[4] *Compare* New York State Electric & Gas Corp., PSC No. 120 – Electricity, Service Classification No. 1, Leaf No. 119 (revision 14) (initial effective date Aug. 12, 2016), https://www.nyseg.com/MediaLibrary/2/5/Content%20Management/NYSEG/SuppliersPartners/

In addition to the proposed increase in fixed customer charges, the Company is also proposing a 10% increase in delivery charges.[5] As a result, the proposed fixed charge constitutes a majority of the proposed rate increase for low energy users, compounding a situation that already burdens low energy users disproportionately. Because low income customers are likely to be low energy users, the Company's economically regressive rate structure is made worse by its rate change proposals.

As explained below, the proposed increase and the current rate structure is inconsistent with New York electricity policy under the REV framework. The current and proposed rates frustrate the economics of customer investment in distributed energy resources ("DER"). A table summarizing the proposed bill impacts appears in Figure KRR-1, below.

PDFs%20and%20Docs/PSC120ServiceClassification_1.pdf; Consolidated Edison Co. of New York, Service, PSC No. 10 – Electricity, Classification No. 1: Continued, Residential and Religious, Leaf No. 388 (revision 9) (initial effective date Feb. 1, 2017), https://www.coned.com/_external/cerates/documents/elecPSC10/SCs.pdf; Niagara Mohawk Power Corp. d/b/a National Grid, PSC No. 220 Electricity, Service Classification No. 1: Residential and Farm Service, Leaf No. 349 (revision 12) (initial effective date Apr. 1, 2015), https://www2.dps.ny.gov/ETS/jobs/display/download/6156802.pdf; Orange & Rockland Utilities, Inc., PSC No. 3 Electricity, Service Classification No. 1, Leaf No. 264 (revision 6) (initial effective date Nov. 1, 2016), https://www2.dps.ny.gov/ETS/jobs/display/download/6157286.pdf; Rochester Gas & Electric Corp., PSC No. 19 - Electricity, Service Classification No. 1, Leaf No. 161.1 (revision 20) (initial effective date Aug. 12, 2016), https://www2.dps.ny.gov/ETS/jobs/display/download/6156756.pdf.

[5] Company Ex. ERP-1, sched. 1 at 23.

Figure KRR-1: Customer Charge Bill Impact of Proposed Rates							
	Monthly Usage (kWh)	Proposed Monthly Bill Increase ($2.00/mo customer charge + $0.0076/kWh delivery charge)	Customer Bill at Proposed Rates	Customer Charge as % of Total Bill at Proposed Rates	Proposed Customer Charge Increase	Proposed Delivery Charge Increase	Customer Charge as % of Total Bill Increase
Summer	200	$ 3.54	$ 57.97	38%	$ 2.00	$ 1.54	56%
	500	$ 5.85	$ 113.40	19%	$ 2.00	$ 3.85	34%
	1000	$ 9.89	$ 207.15	11%	$ 2.00	$ 7.89	20%
	2000	$ 17.95	$ 394.67	6%	$ 2.00	$ 15.95	11%
Winter	200	$ 3.54	$ 57.97	38%	$ 2.00	$ 1.54	56%
	500	$ 5.33	$ 109.18	20%	$ 2.00	$ 3.33	38%
	1000	$ 8.35	$ 194.51	11%	$ 2.00	$ 6.35	24%
	2000	$ 14.37	$ 365.18	6%	$ 2.00	$ 12.37	14%
Source: Company Ex. ERP-1, Sch. 2, p. 1							

Q. What are the key components of the Company's ECOSS and approach to determining the customer charge?

A. As discussed in this testimony, the Company's ECOSS approach for residential customers rests on two foundations: (1) its definition of customer costs, and (2) its use of a minimum system method to assign fixed and demand-related distribution costs to the customer costs category. The costs that the Company assigns to the customer costs category overwhelmingly end up in the fixed customer charge. The Company offers no detailed justification for its ECOSS and rate design approaches but implies that they are just and reasonable because they are consistent with approaches the Company has taken in the past.

The Company proposes two changes from its previous ECOSS in the 2015 ECOSS that it presents in this case, which both appear to have the effect of increasing customer costs. First, the Company proposes to classify a portion of its high-tension system costs as customer costs. Second, the Company proposes a new "Services Study" approach to allocating overhead and underground distribution conductor-related costs to the customer cost category.

Q. How does the Company justify the proposed changes to its ECOSS?

A. The Company states that the proposed changes are consistent with the National Association of Regulatory Utility Commissioners ("NARUC") Cost Allocation Manual, and because the Commission order in Case 16-E-0060 supports the proposed approach.[6]

Q. Are the Company's justifications for the proposed changes to its ECOSS persuasive?

A. No. First, the NARUC Cost Allocation Manual is descriptive and not normative; it serves as no justification.[7] Second, the Commission decision in Case 16-E-0060, which was the product of a settlement and in which the ECOSS was not fully litigated, does not state or imply that it is precedential for any future proceeding.[8] More importantly, my concerns with the Company's ECOSS and approach to designing residential rates are far more fundamental than the adjustments to its flawed approach proposed in this case.

Q. What are your concerns about the Company's overall approach to its ECOSS?

A. The overarching problem with the Company's approach is that it has adopted an extremely flawed definition of customer costs. This problem is manifest in additional

[6] *See* Direct Testimony of Demand Analysis and Cost of Service Panel ("DACOS Panel") at 20.

[7] "The writing style should be non-judgmental; not advocating any one particular method but trying to include all currently used methods with pros and cons." NARUC, Electric Utility Cost Allocation Manual at ii (1992), http://www.pub.gov.mb.ca/pdf/cos_review/exhibits/mipug-28.pdf.

[8] *See* Case No. 16-E-0060, *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Electric Service*, Order Denying Rehearing and Clarifying Prior Order at 12-13 (Sept. 20, 2017) ("In the context of reviewing the terms of a joint proposal, which is the result of a confidential settlement process . . ., the Commission has looked to see whether the proposal, when considered in its entirety, will advance the public interest and will result in rates that, overall, are just and reasonable. *Thus, the Commission's prior decisions on joint proposals do not prescribe particular methods for the setting rates, and most certainly do not prescribe particular methodologies for conducting an ECOS study.*") (emphasis added).

problems that flow from this fundamental error. First, the Company categorically classifies a wide range of costs as direct customer costs that are actually joint and common costs and should be functionalized to more than just the customer costs category—namely, costs caused by demand and that bear no real and measurable relationship to the number of customers or the cost to connect them to the utility grid.[9]

Second, where the Company does recognize joint and common costs, the Company allocates an unreasonably high share of these costs (costs that are caused by both customer connection and demand) to the customer cost category using the flawed minimum system method. The minimum system approach abandons analysis of cost causation in favor of categorical assumptions (e.g., that some share of the entire cost of the distribution system represents customers costs, that all meter-related costs are customer costs, or that sunk costs are representative of minimum system costs) and predetermination of results through method selection.

Q. Is the Company's approach to the ECOSS and proposed rate structure cost based?

A. No. The Company's claim that its proposed rate structure and extremely high fixed residential customer charge is cost-based[10] is sophistry. First, the Company treats a huge amount of costs as direct customer costs without recognizing that these costs are heavily driven by demand. Second, the Company expressly chose a method—the minimum system method—for classifying joint and common costs that labels demand-related costs as customer-related. As I will explain, the methods used by the Company for classifying

---

[9] The Company ECOSS takes no account of differences in cost causation among members of each class and is designed only to be representative of the entire population of each service class. *See* Company response to Pace 1-2.

[10] DACOS Panel at 25.

costs are fundamentally flawed *except* as a method for predetermining the rate outcome that the Company seeks. It appears that the Company seeks to increase its fixed customer costs and charges simply because it has high fixed costs and has constructed an approach that serves that end.

Q. Does any credible economic policy dictate that high fixed cost businesses like electric distribution utilities should adopt rate structures with high fixed charge components in rates?

A. Absolutely not. There is no economic theory that supports a rate design principle that cost structure should be mimicked in rate structure. Moreover, high fixed costs drive high rates in general, whether collected through fixed or volumetric charges. Rate structures with high fixed charges send perverse price signals to customers and utilities that changes in usage will not affect bills or revenues.

Q. Why does proper cost classification to the customer, demand, or commodity energy cost categories matter?

A. Assigning a given cost to the customer category makes it more likely that it will be collected from a residential customer, because the number of residential customers is vastly greater than the number of commercial or industrial customers. In addition, costs assigned to the customer category are used as the basis for building class rates, including the customer charge, so that the more costs are classified as customer costs, the higher the customer charge billed by the utility.

Regardless of the method used to classify and allocate distribution costs, there is no principle that states that the classification and allocation methods should determine rate design or dictate the size of the fixed customer charge. While there is no requirement that costs assigned to the customer costs category be collected solely through a per-customer fixed charge, the Company in this proceeding seeks to collect $22.00 in the customer charge out of the $24.32 that it assigns to the category.

Q. Before elaborating on concerns with the Company's approach, please explain what costs the Company includes in its customer charge calculations.

A. The Company includes a wide variety of customer service-related costs, meter costs, primary distribution system costs, and secondary distribution system costs in its calculation of the customer charges,[11] which presumably are cost components of the hypothetical minimum system built for customers who use no electricity, as I explain below. These costs include costs that are assumed to be 100% direct customer costs:

- Overhead ("OH") Services
- Underground ("UG") Services
- Meter Service Provider
- Meter Installations
- Meter Ownership
- Installation on Customer Premises
- Customer Accounting
- Meter Data Service Provider
- Uncollectibles
- Customer Service

[11] Company response to UIU 1-15.

These costs also include fixed costs that are joint or common costs for which it employs the minimum system method to classify costs as customer costs:

- High tension OH and UG facilities
- OH Transformers
- UG Transformers
- OH Lines
- UG Lines

Taken together, these costs classified as customer costs amount to almost $93.5 million in total rate base and almost $45.5 million in operating expenses.[12]

Q. Please elaborate on the overarching definitional problem you identified with respect to the Company's definition of customer costs and how this impacts its cost allocation methodology and the way the Company builds its customer charge.

A. The foundational flaw in the Company's approach to the customer charges is that its definition of customer costs is meaningless and nonsensical. The Company asserts in its Demand Analysis and Cost of Service Panel testimony that customer-related costs, on which it bases its customer charges, are "fixed costs, which are caused by the presence of customers connected to the system, regardless of the amounts of their demand or energy usage."[13] Under the Company definition, it would incur all the customer costs that it labels as such even if none of its customers used any electricity.

Q. What is wrong with this definition?

[12] Company Ex. DAC-2, at 1, tbl. 6.
[13] DACOS Panel at 25:14–17.

A. The definition makes no logical sense and appears to be a circular justification for using the minimum system method to assign costs to residential customers in the form of customer costs.

Q. Can you elaborate further?

A. The Company appears to want to increase fixed customer charges and the certainty of revenue recovery, so it adopted a definition of customer costs that in effect requires one to ask the fantastical question: "What system would the Company be required to build if it served all of its current customers, but they used no energy at all?" In the circular logic of the Company's definition, the answer is the "minimum system"—the minimal components of the system the Company built to serve current and projected levels of usage and demand. The Company sums all the system component costs that it believes would be required even if every customer unplugged every appliance and turned off every switch. This dark, silent hypothetical system is the Company's minimum system that its wants to charge customers for. At its heart, the Company approach is nothing more than result-based rate making.

Q. How does the Company apply its definition of costumer costs?

A. An example of the Company's application of its definition of customer costs appears in its ECOSS, where it explains how it allocates costs related to overhead and underground lines to the customer cost category. The Company states that:

> "[t]he fixed costs for these functions are considered to be joint customer costs as distinguished from direct customer costs, since they represent the estimated costs of the minimum-size jointly-used distribution lines needed to serve the customers under the existing conditions of customer density and

> geographical dispersion, on the assumption of little or no use of the service by any customer. Expressed in another manner, the customer component is the cost of the smallest secondary system theoretically needed to physically connect all of the existing service points if the system was not required to supply any load."[14]

As this language shows, the idea that the fixed costs associated with the facilities include customer costs is determined solely by the fact that the Company chose to use a minimum system method.

Q. Does the Company use any other definition for customer costs?

A. The Company takes a somewhat confused approach to its definition of customer costs. In response to a discovery request from Pace, and in contrast with the position taken in the ECOSS, the Company states that customer costs "as they are related to the primary and secondary distribution systems, represent that portion of investment incurred to connect customers with minimal load, regardless of their usage,"[15] and that "some portion of both primary and secondary distribution investment is incurred to connect customers with minimal load,"[16] and that costs associated with the minimum system are costs "caused by the mere presence of customers connected to the electric system."[17]

The Company does not limit the distribution system costs that it classifies as customers costs to the costs to connect customers, or to the costs associated with customers with minimal load. Rather, it would be more accurate to say that the Company

[14] Company Ex. DAC-2, sched. 1 at 5.
[15] Company response to Pace 1-4.a.
[16] Company response to Pace 1-5.a.
[17] Company response to Pace 1-7.a.

treats customer costs as a large fraction of *the costs of the distribution system that the customer must connect to*. And that these costs are created when customers have "minimal" demand, and not zero demand, or as the Company states, "regardless of the amounts of their demand or energy usage."[18]

The Company states that it "must stand ready to serve all customers regardless of their demand or energy usage,"[19] a justification that is absolutely untethered from cost of service rate making. This ambiguity and inconsistency is an inadequate foundation for cost-based rates.

Q. Did the Company perform any classification analysis on what it characterizes as direct customer costs to account for advanced functionality and increased range of functions performed by and through investments in modern distribution facilities, including advanced meters, DER, energy efficiency, and customer engagement systems?

A. No. Other than the two modifications to its prior ECOSS, described previously, the Company did not update its ECOSS for these changes in technology, functions, or markets.

Q. What is the effect of this wholesale assignment of metering-related costs to the customer cost category as direct customer costs?

A. Because the Company assigns metering-related costs that relate to demand management and DER integration functions to the customer cost category, it unreasonably inflates customer costs and consequently, the customer charge.

---

[18] *Id.*
[19] *Id.*

Q. Can you further explain the second problem you identified with respect to the Company's use of the minimum system method for classifying joint and common costs as customer costs?

A. As I explained earlier, the "minimum system" consists of a hypothetical electric system that services its customers, and the minimum system method sums all the system component costs that it believes would be required even if no customers were using any electricity. Logically, of course, no system would be required if the Company provided no service. In other words, the customer charge for a true "minimum system" that provides no service to customers is zero.

But as the Company utilizes this method, the minimum system method is analogous to the local grocery store sending a monthly bill to every customer because around Thanksgiving those customers, on average, are going to be shopping for a turkey. The monthly charge would be for keeping the coolers running, the loading bay functioning, and other "minimal costs" of being able to sell turkeys in November. Every customer would get a bill, regardless of whether they actually shop for a turkey.

Where there is competition, customers would not stand for such a billing method, and would take their business elsewhere. But, the Company seeks to extract over $10 per month from every customer for its minimum system fully aware that no reasonable and affordable competitive option exists for most customers. This is the very embodiment of a monopoly engaging in rent-seeking behavior.

Q. What are the main problems with the minimum system method?

A. As the previous explanation shows, the first major problem is that the minimum system method is based on subjective assumptions about system costs and not on cost-causation.

It ignores very real differences in the cost to connect and serve different kinds of customers, even customers in the same class, because it assigns to them a per-customer share of the minimum system, not their actual costs. Second, the method results in higher customer charges. As explained later in the context of policy implications, the results of the method are fundamentally inconsistent with New York energy policy objectives, including the vision of REV, and therefore should be disapproved by the Commission.

Q. Have the problems associated with the minimum system approach been previously studied or analyzed?

A. Yes. The problems inherent in the minimum system approach have been well understood for decades.[20] Indeed, James Bonbright addressed the issues head on in 1961:

> "[T]he really controversial aspect of customer-cost imputation arises because of the cost analyst's frequent practice of including, not just those costs that can be definitely earmarked as incurred for the benefit of specific customers but also a substantial fraction of the annual maintenance and capital costs of the secondary (low-voltage) distribution system—a fraction equal to the estimated annual costs of a hypothetical system of minimum capacity. This minimum capacity is sometimes determined by the smallest sizes of conductors deemed adequate to maintain voltage and to keep from falling of their own weight. In any case, the annual costs of this phantom, minimum-sized distribution system are treated as customer costs and are deducted from the annual costs of the existing system, only the balance being included among those demand-related costs to be

[20] *See* Jim Lazar, *Dividing the Pie: Cost Allocation, the First Step in the Rate Design Process* at A-5 (2015), https://www.raponline.org/wp-content/uploads/2016/05/appendix-a-smart-rate-design-2015-aug-31.pdf.

mentioned in the following section. Their inclusion among the customer costs is defended on the ground that, since they vary directly with the area of the distribution system (or else with the lengths of the distribution lines, depending on the type of distribution system), they therefore vary indirectly with the number of customers.

What this last-named cost imputation overlooks, of course, is the very weak correlation between the area (or the mileage) of a distribution system and the number of customers served by this system. For it makes no allowance for the density factor (customers per linear mile or per square mile). Indeed, if the company's entire service area stays fixed, an increase in number of customers does not necessarily betoken any increase whatever in the costs of a minimum-sized distribution system.

While, for the reason just suggested, the inclusion of the costs of a minimum-sized distribution system among the customer-related costs seems to me clearly indefensible, its exclusion from the demand-related costs stands on much firmer ground. For this exclusion makes more plausible the assumption that the *remaining* cost of the secondary distribution system is a cost which varies continuously (and, perhaps, even more or less directly) with the maximum demand imposed on this system as measured by peak load.

But if the hypothetical cost of a minimum-sized distribution system is properly excluded from the demand-related costs for the reason just given, while it is also denied a place among the customer costs for the reason stated previously, to which cost function does it then belong? The only defensible answer, in my

> opinion, is that it belongs to none of them. Instead, it should be recognized as a strictly unallocable portion of total costs. And this is the disposition that it would probably receive in an estimate of long-run marginal costs. But the fully distributed cost analyst dare not avail himself of this solution, since he is the prisoner of his own assumption that 'the sum of the parts equals the whole.' He is therefore under impelling pressure to 'fudge' his cost apportionments by using the category of customer costs as a dumping ground for costs that he cannot plausibly impute to any of his other cost categories."[21]

Q. Is the minimum system method common practice in the majority of states?

A. No. The minimum system method is out of step with practice in the majority of states.[22] In rejecting the minimum system method in 1990, the State of Washington Utilities and Transportation Commission also rejected the basic concept that distribution costs are customer-related in nature:

> [T]he only directive the Commission will give regarding future cost of service studies is to repeat its rejection of the inclusion of the costs of a minimum-sized distribution system among customer-related costs. As the Commission stated in previous orders, the minimum system method is likely to lead to the double allocation of costs to residential customers and over-allocation of costs to low-use customers. Costs such as meter reading, billing, the cost of meters and service

---

[21] James C. Bonbright, *Principles of Public Utility Rates* 347-49 (photo. reprt. 2005) (1961), http://media.terry.uga.edu/documents/exec_ed/bonbright/principles_of_public_utility_rates.pdf.

[22] *See* Frederick Weston, *Charging for Distribution Utility Services: Issues in Rate Design* at 30 (2000) (citing the "basic customer" method as the method in use in more than 30 states), https://www.raponline.org/wp-content/uploads/2016/05/rap-weston-chargingfordistributionutilityservices-2000-12.pdf.

> drops, are properly attributable to the marginal cost of serving a single customer. The cost of a minimum sized system is not. The parties should not use the minimum system approach in future studies.[23]

The Public Utilities Commission of Colorado recently issued an order in a base rates case for Black Hill/Colorado Electric Utility LP to reverse a long-standing practice of using a minimum system method, approving the recommended decision of the administrative law judge, which included the finding that use of the method "results in customer charges continuing not to be based upon cost of service and [] not just and reasonable without substantial offsetting mitigation."[24]

B. Recommendations and Alternative Residential Fixed Customer Charge

Q. You state that the Company's definition of customer costs is a fundamental error. What costs should be classified to the customer function?

A. Some costs can be easily and objectively classified as customer costs. In general, the customer costs are the costs incurred to connect a new customer to basic electric service. These include the cost of establishing service, which includes a fraction of a customer accounts system, billing software, and the time that customer service representatives spend on establishing new accounts. These costs also include the costs related to the

---

[23] *Washington Utilities & Transport. Comm. v. Puget Sound Power & Light Co.*, Cause No. U-89-2688-T, Third Supp. Order, 71, (1990), *cited in* Jim Lazar, *Electric Utility Residential Customer Charges and Minimum Bills: Alternative Approaches for Recovering Basic Distribution Costs*, RAP (2014), http://www.raponline.org/wp-content/uploads/2016/05/rap-lazar-electricutilityresidentialcustomerchargesminimumbills-2014-nov.pdf.

[24] Recommended Decision of Administrative Law Judge G. Harris Adams on Electric Rates (Decision No. R18-0054), *In the Matter of Advice Letter No. 742 filed by Black Hills/Colorado Electric Utility LP to Update Base Rates as Required by Commission Decision No. C16-1140 to Become Effective August 11, 2017,* Proceeding No. 17-AL-0477E at 24 (CO PUC Jan. 23, 2018); *adopted in* Public Utilities Commission of Colorado Interim Decision Requiring Filings and Scheduling Technical Conference, Decision No. C18-0162-I (Mar. 2 and 5, 2018).

consumption function of meter purchase, installation, activation, and service, but not the entire costs of modern meter functions. And these costs include the incremental costs of the service drop from the last, smallest transformer to the customer meter box.

In other words, the customer function and, indirectly, the customer charge, should reflect the costs incurred by the utility to connect the average customer to the electric system for service. In 1961, James C. Bonbright defined the fixed customer charge as follows:

> [The customer costs] are those operating and capital costs found to vary with the number of customers regardless, or almost regardless, of power consumption. Included as a minimum are costs of metering and billing along with whatever other expenses the company must incur in taking on another consumer.[25]

Simply stated, Bonbright's definition ensures that the customer charge should be limited to the marginal cost of connecting the customer to the grid, and should include only costs that vary directly with the number of customers.[26]

Q. Are there any benefits to relying on Bonbright's definition of customer charge?

A. Adhering to this principle advances other ratemaking principles such as equity and cost-causation and preserves the power of volumetric charges as a price signal. Residential customers can see a direct correlation, both positive and negative, between their level of usage and their contributions to cost creation when energy- and demand-related costs are

[25] Bonbright at 347.
[26] *See* Jim Lazar & Wilson Gonzalez, *Smart Rate Design for a Smart Future* at 36 (2015), http://www.raponline.org/wp-content/uploads/2016/05/rap-lazar-gonzalez-smart-rate-design-july2015.pdf.

recovered through volumetric charges. Allocating demand-related costs to the fixed customer charge eliminates, or at least severely weakens, the price signal impact.[27]

Q. How much cost does a new customer cause?

A. Costs directly related to customer connection and new customers include a portion of the cost of a meter, billing and metering services, and collection costs—in Bonbright's words, the costs the utility "must incur in taking on another customer."[28] These costs would likely sum to about $5–$10 per customer per month, depending on local prices, the billing period used, and other factors.[29]

The Company assigns many more costs to the customer category than just those the Company must incur in taking on another customer, and fails to recognize that many steps that used to be labor intensive can now be accomplished with automation and information technology. The Company proposes further increasing its already unreasonably high fixed customer charge for residential electric customers in this proceeding, from $20 per customer per month to $22.

Q. How would application of this cost-to-connect definition of customer costs impact the Company's approach in this case?

A. First, as explained below, under the cost-to-connect approach, the Company would carefully study all cost categories that it currently considers to be direct customer cost categories. Where this analysis finds that these cost categories are now made up of joint or common costs, the Company would employ an allocation method that only assigned as

---

[27] *Id.*
[28] Bonbright at 347.
[29] *See* Jim Lazar, *The Specter of Straight Fixed/Variable Rate Designs and the Exercise of Monopoly Power*, D-1, D-6 (2015), http://www.raponline.org/wp-content/uploads/2016/05/appendix-d-smart-rate-design-2015-aug-31.pdf.

customer costs the most basic costs related to connecting the customer to the grid. Second, this would mean that the Company would abandon the minimum system method and not assign fixed costs to the customer cost category unless they met the test of being costs caused by the connection of the customer to the grid. As explained later in this testimony, removing the effects of the Company's flawed definition of customer costs and its use of the minimum system method for classifying joint and common costs would reduce the costs that inform the residential fixed customer charge from $24.32 per customer per month to $10.48 per customer per month.

Q. In contrast, how is the minimum system method applied?

A. The concept behind the minimum system method is the characterization and quantification of costs that the Company would face to serve customers if all of the Company's customers take no service. There are various ways to estimate this ultimately hypothetical amount. One version, the zero-intercept method, plots costs to service actual levels of demand on a graph, connects them with a line, and extends the line straight backwards. The point at which the line intersects the vertical axis, which represents cost, is the minimum system of costs. Another approach is to sum up all the facility components of a distribution system below a certain size, say 30 kVA, and treat that as the minimum system. The Company does not explain how it performed the minimum system analysis in this case, except that it performed a services study of facilities relating to overhead and underground conductors and used the book costs of a statistical sample of its system to determine the customer costs for those facilities.

Q. If, as Bonbright suggests, some of the costs that the Company's minimum system method allocates to the customer cost category are not customer costs or demand-related costs, then how do you propose that the Company recover them?

A. First, it is important to recognize that there is no general principle of rate making that requires a cost to be recovered through a particular kind of charge solely because of the category to which the cost is assigned. Rate design is a separate rate making step following cost of service analysis, functionalization, and classification. Given the important policy, equity, and market issues that I discuss later in this testimony, prudent distribution system costs properly allocated to residential customers that may not neatly fit in the customer or demand category should be recovered through the volumetric delivery charge. The typically high correlation between energy use and demand means that assignment of transmission and distribution costs (other than the costs to connect) to volumetric rates creates a more efficient price signal than assigning those costs to fixed customer charges.

Q. Why do volumetric charges send a better price signal to residential customers than fixed customer charges?

A. Simply stated, volumetric charges send better price signals because with volumetric charges, customers can impact their bill by changing their usage. This is not the case with fixed customer charges. As I describe later, fixed customer charges also insulate utility revenue recovery from market forces.

Q. Does the Company's use of a statistically-based services study to determine the cost assignment for overhead and underground conductors present any additional problems?

A. Yes. The Company's proposed services study sub-method relies on a statistical sampling of services and not direct evidence of cost causation. More importantly, the approach uses the booked cost—what the Company actually spent on facilities, and not necessarily what the true minimum cost would be. If approved, this approach would create an incentive for the Company to overbuild and inflate its rate base in order to increase the fraction of conductor costs recovered through non-bypassable monthly charges. This problem of reliance on embedded costs and not necessarily the cost of the most minimal facilities was identified in the NARUC Cost Allocation Manual as a potential source of unreliable results, because "the manner in which the minimum size equipment is selected will directly affect the percentage of costs that are classified as demand and customer costs."[30]

Q. What are your recommendations regarding the Company's ECOSS methods and rate design for residential customers?

A. I recommend that the Commission direct the Company to make fundamental changes in the way it calculates and designs residential rates. These fundamental changes address the two problems that flow from the Company's definition of customer costs and relate (1) to the functionalization of costs that the Company currently classifies as direct customer costs, and (2) to the method used to classify joint or common costs that include customer-related costs.

Q. Earlier you stated that the customer cost category should include *some* of the costs associated with the meter, the line drop, and services. How should these costs be classified and assigned in the future?

[30] NARUC Electric Utility Cost Allocation Manual at 95.

A. In our era of utility transformation, especially as modern advanced metering infrastructure ("AMI") and advanced metering functionality ("AMF")—a broader term that encompasses not just meter-related investments—are deployed, cost assignment and allocation methods should recognize that the range of products and services provided and available to customers is rapidly expanding. In the past, the assignment of the cost of a meter entirely to the customer category was appropriate because meters could really only do one thing—measure cumulative consumption over time.

Today's advanced meters and associated distribution system infrastructure, customer service support and offerings, billing and data management systems, and other investments and expenses associated with a richer, more complex service environment can be used to serve a wide array of functions. These include helping the utility and customers manage demand, offering and participating in new versions of time-varying rates, enabling integration of distribution generation and electric vehicles, developing and participating in demand response programs, and other functions. The new AMI meter can do more than what is required to simply measure consumption, and it also costs more to deliver those added services. The functionalization of meter and associated infrastructure and other costs should be subject to much more granularity in order to accurately track cost causation and ultimately send efficient price signals. In sum, the cost of advanced meters and associated services and infrastructure is related to customer count, energy use, and demand, as well as to a wide range of other more granular functions associated with the modern electric grid beyond the costs properly associated with a fixed customer charge.

Q. Is this increased diversity of function limited to meters?

A. No. Customer billing systems, distribution automation and distribution management systems, mesh networks, and many other distribution-level investments associated with grid modernization similarly involve costs that can be classified in the customer, demand, and commodity energy categories. In addition, the investments and associated expenses support many more functions than just "serving load."

Q. What do you recommend based on this changing reality associated with the functions performed by investments and infrastructure at the distribution edge?

A. Now is the time for the Company to develop a more granular cost tracking system to enable more accurate characterization and classification of costs associated with AMI/AMF deployment, with grid modernizations, and with implementation of REV. This data will be essential for improved cost of service analysis, for tracking performance against EAM targets, and for inclusion in value of DER calculations, among other uses. The Commission should direct the Company to develop a proposed set of subaccounts and cost categories for tracking grid modernization-related investments that includes the three basic cost categories of customer, demand, and commodity energy, as well as the many kinds of specific functions—such as demand response, portal costs, third-party engagement, and electric vehicle interface, among others—performed by the modern and future distribution platform utility.

Q. What is your recommendation regarding the functionalization of costs that the Company currently treats as direct customer costs and functionalizes 100% as customer costs?

A. The Company should conduct a study of costs relating to each of the following cost categories, and determine the reasonable share of costs in these categories that should be assigned to the demand function and those that should be assigned to the customer function:

- Meter Service Provider – Any costs relating to servicing meters that can be assigned to energy efficiency, demand measurement, demand response, integration of DER such as electric vehicles, storage, and distributed generation should be assigned to the demand cost function and the amount assigned to customer costs should be proportionately reduced. Until the completion and approval of the study, I recommend, as a conservative adjustment, that the amount of these costs assigned to the customer category be reduced by 50%, with reduced costs assigned to the demand function.
- Meter Installations, Meter Ownership, Meter Data Service Provider – Today's AMI performs many more functions than traditional analog meters. These meters are fundamental to gathering data about and managing energy efficiency- and demand reduction-related functions, the management of electric vehicle charging, and other new functions that are related to demand or something else, but not the customer function. Therefore, these costs are joint or common costs that must be classified according into both customer and demand categories. Until the completion and approval of the study, I recommend, as a conservative adjustment, that the amount of these costs assigned to the customer category be reduced by 50%, with reduced costs assigned to the demand function.[31]

[31] As previously discussed, modern meters and associated facilities perform a much wider range of functions than merely measurement of usage. The costs associated with these functions substantially exceed the costs associated with basic consumption measurement.

- Installations on Customer Premises – The Company should begin immediately to record the specific function associated with installations on customer premises. These somewhat unusual, and relatively small expenditures should be allocated to the function served by the installation, whether it be basic electric service and usage, or functions such as demand- and DER-related requirements.[32] Until the completion and approval of the study and the gathering of installation-specific data, I recommend that the amount of these costs assigned to the customer category be kept at 100%.
- Customer Accounting – Customer accounting requirements will grow more complex and will be associated with much more than basic electric service as the Company expands energy efficiency programs, integrates third-party products and services, accommodates a wide array of DER, and institutes pilot rates and other service innovations. The Company must begin collecting much more granular data about how the very expensive customer accounting function actually support this growing variety of functional activities. Until the completion and approval of the study, I recommend, as a conservative adjustment, that the amount of these costs assigned to the customer category be reduced by 20%, with reduced costs assigned to the demand function.
- Printing and Mailing a Bill - The Company should begin immediately to record the various functions reflected on bills relating to energy efficiency and peak demand reduction initiatives, DER- and pilot-related rates, and other functions that are above

[32] For example, if a new suburban home requires a difficult or unusual service drop, the cost would be appropriately classified as a customer cost to the extent it is not directly billed to the customer. However, costs related to enabling the installation of complex DER systems should be functionalized to demand or some other function beside general customer costs, and certainly should not be recovered through a fixed charge imposed on all customers.

and beyond basic billing for customer usage. Until the completion and approval of the study and the gathering of service-specific data, I recommend that the amount of these costs assigned to the customer category be kept at 100%.

- Receipts Processing, and Uncollectibles – As the menu of service and products expands from basic electricity usage to include special rates designed to reduce demand, rates for DER, energy efficiency and demand response programs, and other new functions, the costs associated with receipts processing and uncollectibles should no longer be treated as direct customer costs and be classified more accurately. Until the completion and approval of the study and the gathering of service-specific data, I recommend that the amount of these costs assigned to the customer category be kept at 100%.
- Customer Service – The Company has already greatly expanded the range of interactions that it has with customers as a result of energy efficiency and peak demand management programs, the NY REV proceeding, net metering, and other changes in the electricity marketplace. Customer service interactions have also grown more diverse. Even traditional historic customer service interactions have primarily been associated with issues associated with consumption. Only a small fraction of customer service interactions related to starting or restarting basic service, and with distribution system automation and AMF, these costs will fall dramatically as a share of total customer service costs.[33] Until the completion and approval of the study, I recommend, as a conservative adjustment, that the amount of these costs assigned to

[33] The Company does not track specific customer call types. *See* Company response to PULP 1-8.

the customer category be reduced by 50%, with reduced costs assigned to the demand function.

Q. What is your recommendation regarding the method the Company should use to classify costs that are joint or common costs?

A. The Commission should reject any use by the Company in this case or any future case of the minimum system method for determining the share of joint and common costs to be classified as customer-related or demand-related. Because the costs of service study and rate design aspects of the rate case are so fundamental to every other aspect of the Company application, the Commission should direct the Company to file a new rate application based on a classification method that limits customer costs to those known and measurable costs associated with the cost of connecting the customer to the utility grid for electric service.

Q. Is there an alternative to completely refiling the Company's rate case?

A. Yes. In the alternative, the Commission could order the studies and changes that I recommend for future rate cases and institute in this case an adjustment to the basic customer charge. I propose that the Commission approve a residential customer charge no higher than $10.48 per customer per month. The following Figure KRR-4 shows the changes that I propose, using the format and structure that the Company employs in its ECOSS at Company Exhibit DAC-2. For simplicity, I have only included spreadsheet lines from the original exhibit relating to costs that the Company classified as customer costs.

Figure KKR-3 Proposed Adjustments to the Residential Customer Charge

Line	Company Proposed Customer Costs in Total Rate Base per DAC-2, Table 2, p. 41	Company Proposed Amount	Proposed Amount	Adjustment Factor
5	High Tension OH/UG - Customer	$ 10,008,007	$ -	0%
8	Transformers - OH Cust.	$ 14,362,704	$ -	0%
9	Transformers - UG Cust.	$ 14,534,377	$ -	0%
12	OH Lines Cust	$ 8,895,400	$ -	0%
13	UG Lines Cust	$ 2,732,121	$ -	0%
14	Services OH	$ 4,570,316	$ -	0%
15	Services UG	$ 6,036,440	$ -	0%
16	Meter Service Provider	$ 3,552,441	$ 1,776,221	50%
17	Meter Installations	$ 7,055,638	$ 3,527,819	50%
18	Meter Ownership	$ 7,748,456	$ 3,874,228	50%
23	Install on Cust Premises	$ 70,238	$ 70,238	100%
25	Customer Accounting	$ 6,949,436	$ 5,559,549	80%
26	Meter Data Service Provider	$ 3,724,399	$ 1,862,200	50%
28	Printing and Mailing a Bill	$ 230,110	$ 230,110	100%
29	Receipts Processing	$ 737,471	$ 737,471	100%
30	Uncollectibles	$ -	$ -	100%
31	Customer Service	$ 2,266,799	$ 1,133,400	50%
		$ 93,474,353	**$ 18,771,234**	**20%**

Line	Company Proposed Customer Costs in Total Operating Expenses per DAC-2, Table 3, p. 21	Company Proposed Amount	Proposed Amount	Adjustment Factor
5	High Tension OH/UG - Customer	$ 3,363,075	$ -	0%
8	Transformers - OH Cust.	$ 1,429,469	$ -	0%
9	Transformers - UG Cust.	$ 1,446,557	$ -	0%
12	OH Lines Cust	$ 3,320,414	$ -	0%
13	UG Lines Cust	$ 995,831	$ -	0%
14	Services OH	$ 1,075,181	$ -	0%
15	Services UG	$ 631,969	$ -	0%
16	Meter Service Provider	$ 4,946,188	$ 2,473,094	50%
17	Meter Installations	$ 731,384	$ 365,692	50%
18	Meter Ownership	$ 803,201	$ 401,601	50%
23	Install on Cust Premises	$ 48,990	$ 48,990	100%
25	Customer Accounting	$ 12,204,092	$ 9,763,274	80%
26	Meter Data Service Provider	$ 5,278,106	$ 2,639,053	50%
28	Printing and Mailing a Bill	$ 1,381,053	$ 1,381,053	100%
29	Receipts Processing	$ 1,066,474	$ 1,066,474	100%
30	Uncollectibles	$ 1,630,627	$ 1,630,627	100%
31	Customer Service	$ 5,107,354	$ 2,553,677	50%
		$ 45,459,965	**$ 22,323,534**	**49%**

Company Proposed and Proposed Re-Calculation of Customer Cost for Residential Class per DAC-2, Table 6, p. 1	Company Proposed Amount	Proposed Amount	Difference
Number of Customers	196,368	196,368	
Rate Base	$ 93,474,353	$ 18,771,234	-80%
Total Cust Opn Exp	$ 45,459,965	$ 22,323,534	-51%
Monthly Op Exp Cost/Cust	$ 19.29	$ 9.47	-51%
Return (9.024091%)	$ 8,435,211	$ 1,693,933	-80%
Tax on Return (40.564783%)	$ 3,421,725	$ 687,140	-80%
Total Return + Tax	$ 11,856,936	$ 2,381,074	-80%
Monthly Return + Tax	$ 5.03	$ 1.01	-80%
Monthly Customer Cost	$ 24.32	$ 10.48	-57%

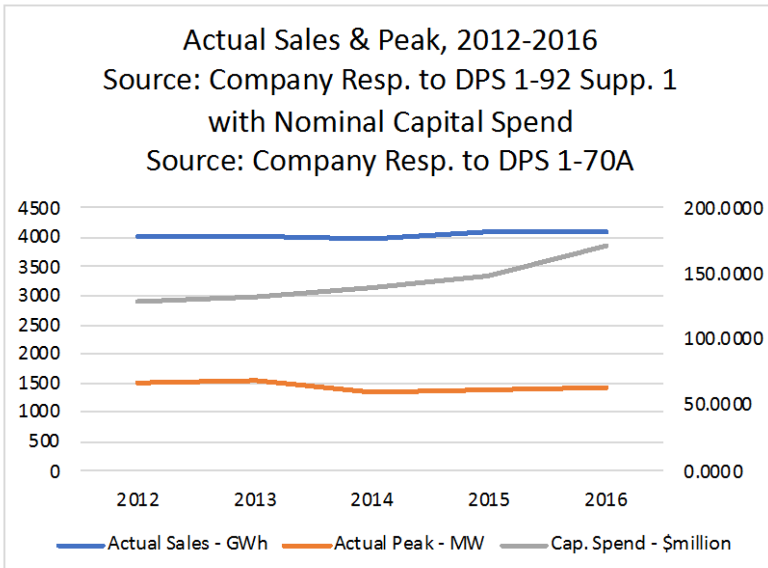
C. Policy Implications of Unreasonably High Fixed Customer Charges

Q. Why would the Company seek a rate structure for residential customers that so heavily relies on fixed charges?

A. The reasons a utility would seek to recover a high fraction of its costs through fixed charges are several. First, the Company and its shareholders enjoy more profits and less market risk if more of their desired revenue requirement is guaranteed, especially if revenues are guaranteed regardless of customer usage or demand. Second, the Company can grow its rate base through capital investments, and even over-build its system more easily, if it can recover those investments through fixed charges that are immune from market forces. Third, in an electricity services sector in which customers are exploring energy efficiency, energy management, and even energy generation options, collecting more costs through fixed charges dampens the economic benefit that customers can realize through investment in those options. Finally, to the extent that collecting revenues through fixed charges results in relatively lower volumetric delivery charges, the Company can expect higher sales.

Q. Do the Company's business fundamentals support your assessment about the possible reasons why the Company is seeking higher fixed rates?

A. Yes. As shown in Figure KRR-2, below, the traditional drivers of Company revenue growth are absent. Both sales and peak demand have been flat for the Company over the past five years. This means that the year-over-year growth that has tended to mask capital overinvestment and dilute resulting rate impacts is also absent. In the utility industry of prior decades in which the Company's senior management first learned their craft, year-over-year sales and peak demand increases drove capital spending, and therefore growth in profits. These drivers are absent today. It is not surprising, then, that the Company has looked to rate making methods that guarantee revenue recovery to support its capital investment growth. The Company may even be counting on the perverse economic incentives inherent in high fixed customer charges to justify further capital investment growth in the future.



Q. Generally speaking, how does the development of customer charges relate to the principles that the Commission seeks to advance through the NY REV process?

A. REV is about animating markets for DER and engaging customers directly in behaviors and deployment of technologies that will defer, offset, and even obviate the need for distribution infrastructure costs. For example, distributed generation can reduce line losses and wear and tear on distribution system components. Demand response and storage, too, can directly defer or offset distribution system replacement or upgrade costs.

High fixed customer charges based on fixed costs that exceed the cost to connect a customer to the grid weaken price signals to customers associated with their contribution to increased or decreased fixed costs over time.[34] Unreasonably high customer charges reduce the cost-effectiveness of DER, constrain the ability of customers to take action to manage their bills in response to price signals, and insulate utility spending from the impact of market forces. Not only are high fixed customer charges inimical to the very purposes associated with REV, they are also economically inefficient. Moreover, excessively high fixed customer charges tend to disproportionately burden customers with low energy use—customers who are often low-income, elderly, and on fixed incomes.

Q. More specifically, are the Company's ECOSS methods and rate structure aligned with NY energy policy goals and advancing markets in the electricity sector?

A. Because the Company's ECOSS approach and rate structure for residential customers are designed to result in and increase already high fixed customer charges, they are contrary to the Commission's policy initiatives aimed at advancing markets in the electricity sector and reducing energy burden for low-income customers. It is a fundamental goal of New York energy policy to maintain, not frustrate, energy services availability; to encourage market growth for DER-based products and services, not frustrate that market growth; to encourage more efficient use of electricity, not frustrate energy efficiency. It is also a fundamental goal of New York energy policy to align utility earnings and profitability with market principles, and not frustrate that alignment by insulating utilities from market forces or thwarting efforts towards performance-based regulation and earnings. Given the impact of high fixed charges on dampening incentives for customers

[34] Pace joined nearly 40 additional organizations in stating principles relating to fixed customer charges in New York. *See* Acadia Center et al., *Joint Principles on Residential Fixed Charges in New York* (Sept. 27, 2017) (annexed hereto as Exhibit KRR-3).

to invest or engage in energy efficiency, energy management, and energy generation options, the Company's high fixed charges are plainly antithetical to state policy.

Q. Do high fixed customer charges impact the effectiveness of Time of Use ("TOU") and other time-varying rate designs?

A. High fixed customer charges undercut the cost-effectiveness of time-varying rates such as TOU rates, because the bill savings and charges possible from those rates are constrained by "floor" fixed monthly charge. As shown in Figure KRR-1, about 20% of the customer bill from the Company at a usage level of 500 kWh is represented by the fixed customer charge. The percentage of the customer bill represented by the customer charge decreases with high use, meaning the benefits of TOU rates are skewed in favor of high users and more wealthy customers.

Q. Do the Company's justifications for its ECOSS methods and rate structure align with the broader public interest goals inherent in electric rates and services?

A. The Company's interests in and justification for its ECOSS and its resulting high fixed customer charges do not outweigh the public interest inherent in allowing customers to control their bills through changes in usage, energy efficiency, and investment in DER. As previously explained, there is no correlation between the facilities apportioned to customer costs through the minimum system method and customers' use of electricity—the approach represents a failure of cost-causation principles.[35]

Q. How does the Company approach to its ECOSS and rate structure impact low income customers?

[35] The Company takes the position that it is premature to discuss changes to cost of service studies, special studies, and load research processes. *See* Company response to UIU 2-33.

A. Low income electricity users tend to be low volume users of energy.[36] The Company confirms that for those it defines as low-income customers—customers who receive Home Energy Assistance[37]—average electricity usage is 12% lower than for the residential class as a whole.[38] As such, the Company's excessive and unreasonable residential fixed customer charges are economically regressive—they disproportionately burden the poor, and frustrate the Commission's efforts to improve energy affordability and reduce energy burden.

Q. Does the Company account for the inequitable impacts of its rates on low income customers?

A. No. In fact, the Company asserts that it does not know the average household income of its residential customers.[39]

III. GAS ISSUES

Q. What issues associated with the Company's gas-related proposals do you address?

A. My testimony addresses issues associated with the Company's approach to gas delivery forecasting. In my opinion, the Company takes several steps that have the effect of inflating forecasts of future delivery volumes, with the effect that they appear to support gas expansion and investments. These forecasts should be corrected, and proposed investments should be revisited in light of more reasonable forecasts. I also address the Company's approach to gas expansion and its failure to employ Benefit-Cost Analysis to

---

[36] National Consumer Law Center, *Utility Rate Design: How Mandatory Monthly Customer Fees Cause Disproportionate Harm*, U.S. Region: NY (2015), http://www.nclc.org/images/pdf/energy_utility_telecom/rate_design/NY-FINAL2.pdf.
[37] Company response to Pace 4-3.
[38] Company response to Pace 4-5.
[39] Company responses to Pace 2-1 & Pace 2-2.

support its proposals, among other issues. I recommend a moratorium on gas expansion spending until the Company adopts more reasonable foundations and approaches for its proposals. Finally, I testify about several policy issues relating to gas expansion in general. Again, I conclude that a moratorium on gas expansion programs and spending is appropriate in light of NY energy policy.

Q. How would you characterize the Company's approach on these issues as a whole?

A. My concerns relate to several aspects of the Company's gas rate case, rate proposals, and business activities. My overarching concern is that the Company evinces a gas load building strategy that is out of step with New York energy policy, that will saddle customers with higher rates, and that will cause further unnecessary environmental damage.

A. Gas Delivery Forecasting

Q. What are your concerns with the forecasting that underlies the Company's proposals in this case?

A. My first concern with the Company's approach to forecasting is that the Company develops its gas sales forecast using a weather normalization adjustment to inflate its forecast of gas sales.[40] The Company asserts that this adjustment was appropriate because the test year was approximately 5.5% milder than normal.[41] The Company inflates its sales in the historic test year by 4.64%, or nearly 1,000,000 MCF,[42] using the sum of the ten-year monthly averages preceding 2017.[43]

---

[40] *See* Company Ex. GFP-1.
[41] Direct Testimony of Gas Volume and Revenue Forecasting Panel ("Gas Forecasting Panel") at 5–6.
[42] *See id.* Calculated as 906,000 / 19,507,064 = 0.0464.
[43] Gas Forecasting Panel at 6:19–22.

Q. Why is this an issue of concern?

A. The Company's inflation of sales forecasts is a problem for two reasons. First, there is no evidence that the Company evaluated the potential for accelerated climate warming. Unless the Company specifically accounts for the potential of accelerating warming due to climate change, a simple historical average will result in inappropriately high forecasts of sales. Second, inappropriately high forecasts of gas sales drive capital spending and rate increases that may burden customers and lead to unnecessary investments and under-utilization (or stranding) of gas infrastructure investments.

Q. Do you have any other concerns about the Company's approach to gas forecasting?

A. The Company also makes a "net new business adjustment" to its test year data to further inflate its delivery forecast by 373,150 MCF or 1.91%.[44] The Company makes this adjustment based in part on "a trend analysis using data from February 2001 through September 2017 by weather normalized average use per customer" based on forecasted changes in the number of customers on a service class basis.[45]

Q. Why is the net new business adjustment a concern?

A. The Company's net new business adjustment is a concern because it has the effect of inflating delivery volumes without evaluation of the potential for market saturation and accelerating climate warming. In addition, the new business adjustment does not appear to take account of beneficial electrification trends in heat pump adoption, or in non-pipeline solutions ("NPS") adoption.[46] Like the test year normalization exercise, this

[44] Company Ex. GFP-1, sched. 1, l. 3 at p. 1 of 7. Calculated as 373,150 / 19,507,064 = 0.0191.
[45] Gas Forecasting Panel at 7:1–13.
[46] *See* Company Ex. GFP-1.

adjustment by the Company could lead to overbuilding and higher customer costs and rates.

Q. What is the cumulative effect of these questionable upward adjustments in projected sales by the Company?

A. These two adjustments for weather in 2017 and net new business account for an inflation of delivery volumes of 6.56% over the test year,[47] and more than five times the downward adjustments in sales due to energy efficiency and price elasticity.[48]

Q. What do you recommend as a correction for these problems?

A. The Company should explicitly adjust its forecasts based on the potential for accelerated climate warming, development and deployment of NPS projects, accelerated adoption of end-use energy efficiency, the rise in the adoption of beneficial electrification technologies such as heat pumps, and, as discussed further below, a moratorium on gas expansion activities.

B. Gas Expansion Proposals

Q. Did you review the Company's overview of its gas system?

A. Yes. In particular, I note three important facts that set a crucial foundation for reviewing the Company's gas expansion proposals. First, the Company has only barely begun to evaluate and find application for NPS projects and programs.[49] Second, the Company's gas system faces no capacity limits that would hinder economic development in its territory.[50] Finally, the Company has no system components operating under low-

[47] *See id.* Calculated as 373,150 + 906,000 = 1,279,150 / 19,507,064 = 0.0656.
[48] *See id.* Calculated as (36,746) + (191,200) = 227,946 / 1,279,150 = 0.1782.
[49] Company response to DPS 31-573.
[50] Company response to DPS 9-322.

pressure conditions.[51] As a result, the primary driver for Company proposed project spending is, as it should be, on replacement of leak prone pipe and maintaining reliability.[52]

Q. Given the overall condition of the Company's gas system, where should the Company's focus lie?

A. The Company should focus on maintaining and improving its current gas system, operations, and services.

Q. Is this the time for the Company to aggressively pursue gas system expansion?

A. As I will explain in more detail, the Company should not be seeking system and customer base growth at this time.

Q. How does the Company account for costs associated with new customers?

A. The Company uses accounting "blankets" to obtain spending preauthorization for new customer connection costs and to recover the direct costs of gas system expansions.[53] In addition, new customer connections contribute to increases in costs for gas-related reliability and repair.[54]

Q. Do you have any concern with the use of accounting blankets for new customer connection costs?

A. Yes. Given the issues that I will discuss relating to growing use of gas, new connection costs should be subjected to greater scrutiny before they are approved or undertaken. As I discuss, the Company should put a hold on new gas connection spending until it has

---

[51] Company response to DPS 9-323.
[52] Direct Testimony of Gas Infrastructure Operations Panel ("Gas Infrastructure Panel") at 11–12.
[53] *Id.* at 18–19.
[54] Company response to Pace 3-2.

developed and uses a long-term BCA approach that accounts for societal impacts. In addition, the Company's use of the accounting blanket for the costs associated with new gas service connections forces all other gas customers to subsidize these connection costs.[55]

Q. You stated that the Company has only just begun to evaluate the potential for NPS projects. What are the potential benefits of NPS projects and how has the Company addressed this opportunity in this case?

A. NPS projects have the potential to reduce demand, avoid or defer conventional infrastructure investment, and to extend the useful life of gas assets. While the Company recognizes the potential benefits of NPS projects, it does not propose any actual projects, and at this time it indicates only that it "intends to work closely with Con Edison."[56] The Company's lack of progress or proposals for an approach to evaluating and proposing NPS projects is disappointing. The Company nevertheless does recommend the adoption of a recovery mechanism for the recovery of NPS-related costs.[57] So, while the creation of a cost-recovery method will be reasonable in a world where the Company is developing actual NPS projects, at this time the proposal to create an NPS cost-recovery mechanism lacks any context in reality and is therefore premature and administratively inefficient.

Q. What do you recommend that the Company do regarding NPS projects?

A. The Company should accelerate and intensify its efforts to develop a framework for developing and evaluating NPS projects, and after that, propose a conforming cost-

---

[55] Company response to Pace 3-1.
[56] Gas Infrastructure Panel at 25:18–9.
[57] *Id.* at 24–25; Direct Testimony of Gas Rates Panel at 34–35.

recovery mechanism as well as reporting and other mechanisms to accompany an NPS projects effort.

Q. The Company states that it should continue to offer gas service expansion to customers in order to provide customers what it says is a "cleaner and more environmentally friendly energy alternative" because NPS projects that involve moving to an alternative (non-gas) source of heating is not an economic option for many its customers.[58] Do you agree with this assessment and approach by the Company?

A. No. It is hard to understand how the Company concludes that NPS projects involving non-gas heating options are "not an economic option" when the Company has offered no detailed evaluation or BCA of NPS non-gas heating options. As a result, there is no basis for the Company's assertion that gas heating options are "cleaner and more environmentally friendly." As explained below, until these evaluation processes are developed and used, a moratorium on gas expansion is the only reasonable course.

Q. In light of the Company's failure to yet develop an assessment and evaluation process that compare non-gas heating options to gas expansion proposals, how do you view the Company's proposal to modify its entitlements provisions?[59]

A. The Company proposes modifications to the non-residential and customer excavation entitlements. The Company's proposed changes to entitlements are premature given the lack of evaluation tools and procedures that fairly compare non-gas heating options to gas expansion proposals. Therefore, any such changes should be abated. In addition, the

[58] Direct Testimony of Customer Service Panel ("Customer Service Panel") at 58:8–14.
[59] See *id.* at 58–62.

Company should evaluate the development of excavation entitlements for ground-source heat pump installations.

Q. Are you aware that the Company proposes incentives for residential customers who purchase energy efficient gas equipment?

A. Yes. The Company offers incentives to residential customers for gas efficiency investments and is proposing a range of modifications to its programs.[60] While I am strongly supportive of more efficient use of gas, as discussed below, I think it is increasingly important that the Company's energy efficiency programs evaluate all spending that could have the effect of increasing dependence on even efficient use of gas against beneficial electrification options. My recommendations for BCA tools and evaluation support this outcome. In the absence of such tools and evaluation processes, I do not support "programs to make it easier to convert to natural gas," because of the risk of uneconomic and environmentally-damaging load-building.[61] I also recommend that customer education programs explicitly address heat pump technologies.[62]

Q. Did you review the Company's Neighborhood Expansion Program proposals?

A. Yes. The Company proposes significant and unreasonable changes in how it evaluates and funds its Neighborhood Expansion Program.[63] Rather than waiting until demand for gas main extension is adequate to pay for such extension among willing customers, the Company now proposes to cover the costs of extensions based on "projected future subscriptions."[64]

---

[60] *See generally* Direct Testimony of Energy Efficiency Panel.
[61] Customer Service Panel at 8:19–21.
[62] *Id.* at 28:19–21.
[63] *See id*. at 63 et. seq.
[64] *Id.* at 63:9–11.

Q. Did the Company quantify the cost impact of its proposed change to the Neighborhood Expansion Program?

A. No. The Company states only that it proposes to recover increased gas expansion costs through the "new business blanket" accounting mechanism.

Q. What do you recommend regarding the Company's proposed change to the Neighborhood Expansion Program?

A. The Company's proposed change to the Neighborhood Expansion Program should be rejected based on the significant risk that it will require subsidization by non-expansion customers in the event projections are not realized, and on the fact that the Company has no evaluation process in place to assess whether the expansions would be cost-effective from a societal perspective over the long run.

C. Policy Issues Relating to Gas Expansion and Load-Building

Q. Why are you concerned about programs that are designed to increase or have the effect of increasing gas service and use?

A. Today, gas is a very affordable fuel. However, infrastructure to extend service is expensive and requires considerable capital investment. In addition, the impetus to expand gas usage rests on the fact that gas *combustion* produces less carbon dioxide and other atmospheric pollutants than does burning other fossil fuels, such as oil and coal. When gas leaks, however, as it does during production and transportation, its carbon equivalent impacts are much more significant than those of CO_2, so much so that they can obviate any benefits from the lower CO_2 emissions from combustion of gas in lieu of higher-carbon fuels. In contrast, distributed energy technologies like ground-source or geothermal heat pumps ("GHP") and solar hot water systems are clean and increasingly cost-effective alternatives to combustion technologies, requiring little or no infrastructure investment beyond the systems themselves. When these factors are considered together with New York's greenhouse gas ("GHG") reduction goals and the potential for significant improvements in the energy efficiency of buildings, there is an increasing risk that gas distribution infrastructure will become stranded as it ages. Gas infrastructure investment costs are typically shared with all gas customers, meaning that savings enjoyed by some customers come at a financial as well as an environmental cost to other customers.

Q. Did the Company evaluate these costs and other impacts associated with gas system expansion?

A. No. It appears that the Company has not provided a BCA to accompany its proposal for gas expansion spending.

Q. What is your assessment of the Company's gas growth investment and spending?

A. In my opinion, the Company should not be spending on gas load building, just as it should not be spending on electric load building, unless it can demonstrate net societal benefits over the life of the program or measure.

Q. What do you recommend that the Commission do in regard to these programs?

A. I recommend that the Commission declare a moratorium on gas load building programs and spending until it can establish and implement a protocol for evaluation of the program from a long-term societal perspective. Such a tool will inform EAM design and guide the development and implementation of more cost-effective alternatives to gas system expansion.

Q. Why should the Commission and the Company suspend gas expansion programs until comprehensive BCA tools based on a societal perspective can be developed?

A. The low current prices for gas have created an enthusiasm for increased gas utilization as a power plant fuel and for direct combustion in homes and businesses. However, capital investment in gas infrastructure—whether for production, transmission, distribution, or conversion—cannot be evaluated for cost-effectiveness in a vacuum or only in the short term. Alternatives to gas exist and are increasingly cost-effective.[65] These options include large-scale renewable energy generation, distributed renewable generation, energy efficiency, beneficial electrification equipment like GHPs, and others.[66] In the absence of up-to-date and comprehensive BCA tools that address the tradeoffs associated with gas system expansion investments from a long-term societal perspective and that drive Company proposals and Commission decisions regarding those investments, there is an increasing risk of creating an asset class that will become a stranded investment in the future.[67]

Money spent on and committed to gas system expansion also creates an opportunity cost by shifting resources away from clean, no-fuel technology options like renewable energy and energy efficiency, which frustrates New York's policies aimed at

---

[65] *See* Lazard, *Lazard's Levelized Cost of Energy Analysis—Version 10.0*, 11 (2016), https://www.lazard.com/media/438038/levelized-cost-of-energy-v100.pdf (describing cost of electrical power only).

[66] *See, e.g.*, Neil Veilleux et al., Meister Consultants Grp., prepared for Int'l Energy Agency, Renewable Energy Technology Deployment, *Waking the Sleeping Giant*, 8 (2015) (depicting renewable alternatives to gas heating), http://iea-retd.org/wp-content/uploads/2015/02/RES-H-NEXT.pdf.

[67] The Company did not consider the impacts of its gas expansion activities on meeting the future goals of the NY Clean Energy Strategy, on potential stranded costs, or rating agency opinions. *See* Company responses to Wyman 3-34 through 3-39.

significant GHG emissions reductions.[68] In the face of these important tradeoffs, the Company should develop and submit a comprehensive, societal BCA that evaluates gas system expansion against a range of non-gas alternatives.

Q. How do gas system expansion investments impact customers?

A. Gas system expansions can appear to provide new gas customers with lower energy bills because of the currently lower prices of gas, but those potential savings can easily evaporate if gas prices increase. When gas prices do rise, customers can be locked into a higher-cost fuel or stranded cost payments for years. These expansion investments can also raise rates for existing customers when the costs of system expansion are rate-based and not charged directly to the newly connected customers.[69] Economic development programs encouraging greater gas use can likewise create benefits for funding recipients while raising rates for customers at large.

Q. What are the mid- to long-term issues that could potentially strand gas system expansion investments?

A. These issues include not only the improving economics of the alternatives to gas, but also a range of problems associated with gas as a fuel.

---

[68] *See* Direct Testimony of Thomas G. (Jerry) Acton on Behalf of Alliance for a Green Economy, *Matter of Niagara Mohawk Power Corp. d/b/a Nat'l Grid for Gas & Electric Serv.*, Case Nos. 17-E-0238 & 17-E-0239 (PSC Aug. 25, 2017).

[69] A recent decision of the Ontario Energy Board, in Canada, addressed the issue of subsidized gas system expansion. The Board decided that subsidies from existing customers to support gas expansion to new customers were not appropriate. *See* Ontario Energy Board, Backgrounder: Generic Proceeding on Community Expansion (Natural Gas) (2016), https://www.oeb.ca/oeb/_Documents/Documents/Backgrounder_Gas_Expansion_20161117.pdf.

- First, today's lower gas prices are a favorable condition, but when viewed over the longer term, gas prices have been quite volatile. This volatility can translate into rate shock when passed through to customers.[70]
- Second, gas is a finite fossil fuel. There are well known problems with the very optimistic estimates of gas reserves developed by the U.S. Energy Information Administration ("EIA"), and a series University of Texas studies predict that gas from the four largest shale plays in the U.S. will peak in 2020.[71] The useful life and straight-line depreciation life of many gas infrastructure investments may actually be longer than the period during which gas will be readily available at affordable prices.[72] Long before the physical resource is exhausted, supply constraints due to resource distribution could cause price increases and volatility. Increasing gas end-use puts direct consumer reliance on gas in direct competition with gas use for electricity production in times of fuel constraint that are certain to increase over the coming decades.
- Third, gas is, in New York, an imported fuel. This means that increasing reliance on gas shifts risk of transport congestion and supply constraint to an increasing portion of New York customers. Moreover, as an imported fuel, the trade balance for gas tilts

---

[70] *See* EIA, *New York Price of Natural Gas Delivered to Residential Consumers*, https://www.eia.gov/dnav/ng/hist/n3010ny3A.htm (data released Oct. 31, 2017) (showing price of natural gas delivered to residential customers in New York State from 1967 to 2016).
[71] *See* J. David Hughes, *2016 Shale Gas Reality Check*, Post Carbon Inst., 1 (2016) , http://www.postcarbon.org/publications/2016-shale-gas-reality-check/ (citing Texas studies); *see also* Mason Inman, *Natural Gas: The Fracking Fallacy*, 516 Nature 28, 29 (Dec. 3, 2014), https://www.nature.com/news/natural-gas-the-fracking-fallacy-1.16430 (citing Texas studies).
[72] *See* EIA, *Annual Energy Outlook 2017 with Projections to 2050*, 55 (Jan. 5, 2017), https://www.eia.gov/outlooks/aeo/pdf/0383%282017%29.pdf (showing possible quadrupling of Henry Hub spot prices by 2040).

heavily toward exports of capital. With efficiency and in-state renewable energy generation, a higher fraction of the costs remains in New York.

- Fourth, when burned for power, gas offers reduced emissions of CO_2 as compared with those of coal, oil, and propane. These benefits are partially, and potentially entirely, offset by the GHG impacts of methane leaks that occur in every part of the natural gas life cycle, from production to final use.[73] Methane is a dramatically more potent GHG than CO_2, so much so that life cycle leakage could offset all combustion-related CO_2 reduction benefits.[74] Moreover, as the equipment that uses gas as a fuel ages, the efficiency of fuel use degrades, reducing the carbon reduction benefits of the fuel.
- Finally, it is important to remember that New York has already moved substantially to reduce its dependence on fossil fuels for electricity production. Approximately 40% of the New York electric production sector's greenhouse emissions are related to gas use.[75] Meeting the objectives of the New York State Energy Plan and Clean

[73] *See* David R. Lyon, *Methane Emissions from the Natural Gas Supply Chain*, ch. 3, in Environmental and Health Issues in Unconventional Oil and Gas Development 33–48 (Debra Kaden & Tracie L. Rose eds., 2016), http://www.sciencedirect.com/science/article/pii/B9780128041116000030.

[74] *See* Sarah Zielinski, *Natural Gas Really Is Better than Coal*, Smithsonian.com, Feb. 13, 2014, https://www.smithsonianmag.com/science-nature/natural-gas-really-better-coal-180949739/ (citing Adam R. Brandt et al., *Methane Leaks from North American Natural Gas Systems*, 343 Science 733, 733–735 (2014)).

[75] *See* EPA, Emissions & Generation Resource Integrated Database ("eGRID"), eGRID2014 Summary Tables, tbl. 11 (State Resource Mix) (rev. Feb. 27, 2017), https://www.epa.gov/sites/production/files/2017-02/documents/egrid2014_summarytables_v2.pdf; New York State Energy Research and Development Agency ("NYSERDA"), *New York State Greenhouse Gas Inventory*, https://www.nyserda.ny.gov/-/media/Files/EDPPP/Energy-Prices/Energy-Statistics/greenhouse-gas-inventory.pdf.

Energy Standard requires a fundamental shift away from use of gas, not an increase in gas end uses.[76]

Q. What role would a moratorium on gas expansion and the development of a comprehensive BCA procedure play in a strategy to reduce gas use?

A. The first step in getting out of a hole is to stop digging. New York has taken a critical first step in rejecting the production of shale gas through hydraulic fracturing. The next step is a moratorium on any gas expansion investments, including incentives for end-use conversion, pending development of a BCA procedure. The next step after that is for New York to develop a comprehensive strategy for managed de-capitalize natural gas infrastructure in a measured and deliberate fashion by aiming electrification and efficiency initiatives at portions of the grid that are experiencing declining sales. In addition, alternative uses of gas infrastructure should be explored. The long-term objective should be the significant reduction and eventual elimination of end-use gas consumption.

Q. What recommendations do you have for the design of a BCA framework for gas expansion and its alternatives?

A. The BCA used to evaluate gas expansions, and ultimately inform a managed de-capitalization strategy, must encompass the broadest scope of analysis, from gas production to the burner tip. The BCA must take a long-term perspective, examining the decades over which infrastructure would be in place. The procedure must take a full societal perspective of costs and benefits, including assessment of the health and

[76] *See* NYSERDA, *Clean Energy Standard*, https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Standard.

environmental justice impacts of gas production, transmission, distribution, and use. The procedure must also take into account the projected future commodity price of gas and the impact of price instability and increases on ratepayers. The BCA should provide points of comparison for all of those parameters as applied to non-fossil-fuel alternatives to gas.

Q. Are you concerned that a moratorium on gas system expansion investments could adversely impact low- and moderate-income customers who would benefit from today's lower prices for gas?

A. Low- and moderate-income ("LMI") customers face high energy burdens and taking the opportunity to cost-effectively reduce those burdens in both the near and long term is properly the policy of the Commission and the State of New York. It is important to ensure that near-term cost savings do not come at the expense of a long-term, society-wide infrastructure mortgage that is unaffordable. This is especially important with regards to low income customers. These are the customers least able to afford to "write off" a gas investment that has become uneconomic. That is another major reason that the Commission should establish, and the Company should energetically participate in, a process to develop a comprehensive analytical procedure that accounts for cost and benefits over the long term, and to society as a whole.

Q. What do you recommend that the Company do to provide opportunities to reduce energy burdens for LMI customers in the near term?

A. LMI customers who otherwise would have qualified for gas expansion and conversion programs should be aggressively targeted for energy efficiency improvements. The Company should also consider providing other support to these customers. The Company should aggressively promote the deployment of highly efficient GHP systems for residential customers.

IV. CHARGING CUSTOMERS FOR TRADE ASSOCIATION ACTIVITIES

Q. Is the Company a member of any trade associations?

A. Yes, the Company is a member of both the Edison Electric Institute and the American Gas Association.[77]

Q. Please describe the issue of the Company seeking cost recovery from customers for trade association activities.

A. The Company seeks to recover trade association dues as an "above-the-line" expense from ratepayers. Unbeknownst to most customers, these payments may be used to fund advocacy with which customers may disagree and that is contrary to their interests. The Company reports that it paid a total of $262,382 in dues—$117,285 to the Edison Electric Institute ("EEI"), and $145,097 to the American Gas Association ("AGA").[78] Groups such as EEI and AGA receive a majority of their revenue from utility membership dues,[79] are highly political in nature, and promote policies that are not always in the best interests of ratepayers.

The Company refused the Department of Public Service Staff's request to provide descriptive information relating to the purpose of the organizations and the organizations' financial statements, annual budgets, and activities.[80] Instead, the Company reports, in response to Staff's request, that based on unsworn and undocumented information

[77] Company response to DPS 1-48 (annexed hereto as KRR-4).
[78] Company response to DPS 1-48.
[79] U.S. Dep't of Treasury, IRS, Form 990, Part VIII Statement of Revenue (Edison Electric Institute, 2015), https://projects.propublica.org/nonprofits/organizations/130659550.
[80] Company response to DPS 1-48.

provided by EEI and AGA on the invoices to the Company, $28,991 of the total $262,382 was related to "lobbying fees" and was recorded as a "below the line" expense for which the Company does not seek recovery.[81] The Company provides no information to support the reasonableness of cost recovery for the "above the line" dues—which amount to $233,391 each rate year[82]—or to ensure the accuracy of the assertions by the associations as to the extent to which dues are used to support lobbying and advocacy positions. The Company has failed to demonstrate that the costs associated with EEI and AGA membership dues are limited to activities that benefit ratepayers and therefore are just and reasonable. The Company has failed to demonstrate that it has removed all payments for lobbying activities from the costs it seeks to recover from customers. The Company produced no evidence that it verified the assertions from EEI and AGA. Based on this failure to justify and substantiate the reasonableness of cost recovery for the dues paid to EEI and AGA, I recommend that the Commission deny recovery of these expenses and order the Company to adjust its revenue requirement downward accordingly.

Q. In sum, what justification does the Company provide for the reasonableness and appropriateness of requiring customers to pay $233,391 each rate year for the Company's membership in EEI and AGA?

A. The Company asserts that has invoices from the EEI and AGA that total $262,382, and that include notations, probably made by the invoicing clerk at each of those

---

[81] *Id.* The Company asserts that is has invoices from the EEI and AGA that total $262,382, and that include notations, apparently made by the invoicing clerk at each of those organizations, that indicate that $28,991 of the dues supported lobbying by those organizations.
[82] Calculated as $117,285 + $145,097 = $262,382 - $28,991 = $233,391.

organizations, that indicate that $28,991 of the dues supported lobbying by those organizations.

Q. **What is EEI, and what services does the trade association provide to its members?**

A. EEI is a trade association with a large operating budget ($90 million in 2015) that represents U.S. investor-owned electric companies in all 50 states.[83] EEI describes its mission as providing public policy leadership, industry data, business intelligence, conferences and forums, and products and services to the utility industry.[84] EEI also provides a Mutual Assistance Program in which member utilities can access assistance during storms to restore power to affected customers.[85] Most of EEI's work involves promoting its utility members' policy agenda and bottom-line through political action and legal intervention.[86]

Q. **What is AGA and what services does the trade association provide for its members?**

A. AGA is a trade association that represents more than 200 natural gas supply companies in the United States.[87] AGA supports the use and production of natural gas through regulatory and policy intervention, development assistance, exchange of information, and conferences and workshops.[88] AGA advocates for the increased development of pipeline

---

[83] David Anderson et al., Energy & Policy Inst. ("EPI"), Paying for Utility Politics 4 (2017) ("EPI, *Paying for Utility Politics*"), http://www.energyandpolicy.org/wp-content/uploads/2017/05/Ratepayers-funding-Edison-Electric-Institute-and-other-organizations.pdf. A copy of the Executive Summary of this report is annexed hereto as Exhibit KRR-5.
[84] *See* EEI, *About EEI*, http://www.eei.org/about/Pages/default.aspx (last visited May 24, 2018).
[85] *See* EEI, *Mutual Assistance*, http://www.eei.org/issuesandpolicy/electricreliability/mutual assistance/ (last visited May 24, 2018).
[86] *See* EPI, *Paying for Utility Politics* at 4.
[87] *See* AGA, *Fact Sheets*, https://www.aga.org/knowledgecenter/facts-and-data/fact-sheets (last visited May 24, 2018).
[88] *See* AGA, *Our Mission*, https://www.aga.org/about/our-mission (last visited May 24, 2018).

infrastructure.[89] AGA also is credited with positioning natural gas as a "bridge fuel," allowing for natural gas to be publicly viewed as part of the solution to climate change.[90]

Q. What portion of EEI's budget is spent on lobbying activity as compared with other activities?

A. It is unknown what portion of EEI's budget is allocated towards lobbying activity because the most recently available NARUC audit of EEI data is from 2005.[91] The Company has not submitted a more recent audit of any kind in this proceeding.

Q. Why is it important to know how EEI treats its expenditures?

A. Reliable data on EEI spending activity is necessary for reasonable allocations of expenses between lobbying and non-lobbying activity. Absence of that data presents a significant challenge for stakeholders, ratepayers, and regulatory authorities who seek to protect ratepayers from funding lobbying and any non-lobbying advocacy that may not be in their best interest.

Q. Why is it important to determine what activities and policies the EEI and AGA ratepayer-funded dues support?

A. The majority of New Yorkers support renewable energy, the reduction of GHG emissions, and New York's REV initiative.[92] New York energy policy is committed to a

---

[89] *See* AGA, 2017 Playbook, *Natural Gas: Moving Our National Forward*, 24–26, http://playbook.aga.org (last visited May 24, 2018).
[90] *See* Jeff Share, *Dave McCurdy Brings Strong Credentials to AGA*, Pipeline & Gas Journal (Dec. 2011), https://pgjonline.com/2011/12/01/dave-mccurdy-brings-strong-credentials-to-aga/.
[91] *See* EPI, *Paying for Utility Politics*, at 32.
[92] A 2016 survey of New York voters found that more than 90% of New Yorkers strongly support solar power, more than four out of five New Yorkers support the REV initiative, and a majority of them view global warming as a serious problem. *See* The Nature Conservancy, New York Voter Attitudes on a Cleaner Energy Future (2016) (slides 4–7), https://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/newyork/climate-energy/new-york-voter-attitudes-on-clean-energy.pdf.

clean, distributed, affordable energy future, while EEI and AGA advocacy and policy positions have been demonstrably inimical to the type of clean energy goals New York hopes to achieve. REV was launched to champion renewable energy, grid modernization, the reduction of carbon emissions, and a safer, more resilient, affordable, and reliable electricity grid for the benefit of New York's citizens. The development of more distributed renewable energy assets and energy efficiency programs, coupled with a reduction in the expansion of fossil fuels and GHG emissions, provide direct and quantifiable benefits to ratepayers throughout the State.

Q. What dues-funded EEI and AGA activities are in the interest of New York ratepayers?

A. Examples of association activities clearly in the interests of ratepayers include: EEI and AGA sponsored workforce education and training modules, knowledge campaigns centered around electrical and gas safety, and EEI's Mutual Assistance Program that combines utility resources during extreme weather to restore power to customers.

Q. So, what is the problem with above-the-line trade association dues?

A. The problem is that the EEI and AGA act as advocacy organizations in supporting a policy agenda contrary to many ratepayers' interests or personal beliefs, and the policies of the State of New York. In one example, over the period of 2008 to 2015, EEI donated $142,667 to the American Legislative Exchange Council ("ALEC"), of which AGA is a member as well.[93] ALEC, a politically conservative 501(c)(3) organization, provides

[93] EPI, *Paying For Utility Politics* at 17.

state legislators with "model bills" to oppose renewable energy standards and overturn laws that reduce carbon dioxide emissions.[94]

Q. Are you recommending that the Company not be allowed to indirectly fund ALEC or other anti-renewable energy advocacy organizations through its contributions to EEI and AGA member dues?

A. No. I accept that the Company may decide that it is in the best interests of shareholders to join in these agendas. My testimony is that ratepayers should not be required to support these organizations, directly or indirectly, through EEI and AGA dues, and that the Company must produce sufficient and competent evidence to the Commission that any dues payments that it seeks to recover from ratepayers through the revenue requirement do not fund these activities. If permissible non-lobbying EEI and AGA activities amount to less than fifty percent of the total organizational budget, Orange & Rockland customers will be involuntarily funding lobbying and political advocacy activities carried out by EEI and AGA.

Q. What other issues has EEI supported that conflict with ratepayers' interests?

A. EEI maintains an ongoing effort to fuel doubt about climate science and oppose limits on carbon emissions.[95] EEI advances this goal primarily by funding special interest groups like the Utility Air Regulatory Group ("UARG") and ALEC.[96] UARG recently submitted

---

[94] *Id.*; *See* Suzanne Goldenberg & Ed Pilkington, *ALEC Calls for Penalties on 'Freerider' Homeowners in Assault on Clean Energy*, The Guardian, Dec. 4, 2013, https://www.theguardian.com/world/2013/dec/04/alec-freerider-homeowners-assault-clean-energy.

[95] *See, e.g.*, David Anderson et al., EPI, Utilities Knew: Documenting Electric Utilities' Early Knowledge and Ongoing Deception on Climate Change from 1968–2017 at 6 (2017) ("EPI, *Utilities Knew*"), https://drive.google.com/file/d/0B8l-rYonMke-NG5ONVZkZVVJMG8/view.

[96] In a 2015 case before the Indiana Utility Regulatory Commission ("IURC"), testimony revealed that $173,612 of EEI annual dues were paid to UARG. *See* Verified Direct Testimony

comments to the Trump Administration encouraging the repeal and replacement of the Clean Power Plan, broadly arguing against EPA's regulations requiring lower carbon emissions from utilities.[97] In contrast, the State of New York's Office of the Attorney General, representing the people of New York, led a coalition of states in support of the Clean Power Plan.[98]

EEI also has directly challenged state programs for rooftop solar and DER.[99] In 2014, EEI filed comments to the Arizona Corporation Commission to challenge Arizona's net-metering policy.[100] EEI advocated for a change in the value of distributed resources, arguing, among other things, that "grid security and reliability values should not be considered in rates," that "environmental and social externalities should not be included in [distributed generation ("DG")] rates," and that "DG systems should not be

---

of Derric J. Isensee, Attach. 6-B, at 37, *In re N. Indiana Pub. Serv. Co.*, Cause No. 44688 (IURC Oct. 1, 2015), https://assets.documentcloud.org/documents/3111258/Northern-Indiana-Public-Service-Company-Dues.pdf.

[97] *See* Letter from Andrea B. Field, Counsel, UARG, to Samantha K. Dravis, EPA, 5–7 (May 12, 2017), *submitted in* EPA, Docket ID EPA-HQ-OA-2017-0190-0042, https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OA-2017-0190-40140&attachmentNumber=1&contentType=pdf.

[98] *See* Press Release, New York State Attorney General Eric T. Schneiderman, A.G. Schneiderman Leads Coalition of States and Localities in Opposing Pres. Trump's Efforts to Dismantle the Clean Power Plan (Mar. 28, 2017), https://ag.ny.gov/press-release/ag-schneiderman-leads-coalition-states-and-localities-opposing-pres-trumps-efforts.

[99] *See* Joby Warrick, *Utilities Wage Campaign Against Rooftop Solar*, Washington Post, Mar. 7 2015, https://www.washingtonpost.com/national/health-science/utilities-sensing-threat-put-squeeze-on-booming-solar-roof-industry/2015/03/07/2d916f88-c1c9-11e4-ad5c-3b8ce89f1b89_story.html?utm_term=.5834a980a07b.

[100] Comments of the Edison Electric Institute, *Value & Cost of Distributed Generation (Including Net Metering)*, Docket No. E-00000J-14-0023 (Ariz. Corp. Comm'n Feb. 14, 2014), http://docket.images.azcc.gov/0000151239.pdf (formatting altered).

compensated directly for reducing market prices."[101] To support its position, the EEI ran $500,000 worth of television ads attacking solar customers.[102]

Q. What issues has AGA supported that conflict with ratepayers' interests?

A. AGA maintains an ongoing funding effort to support the growth and promote the use of natural gas in the United States.[103] As noted earlier in my testimony, natural gas has a significant GHG impact, historically has been characterized by volatile commodity prices, and is not guaranteed to remain cost-effective for the useful life of the natural gas infrastructure investments that AGA supports. Taken together, natural gas expansion is demonstrably not in the interest of ratepayers, and ratepayers should not be made to foot the bill for advocacy conducted by AGA that may run counter to ratepayer interest.

Q. What other issues contrary to ratepayer interests has AGA supported?

A. AGA funded and launched Your Energy, which is a public relations campaign masquerading as a grassroots effort to combat genuinely local opposition to pipelines and gas in Virginia.[104] In addition, AGA and EEI are members of the Utility Solid Waste Activities Group ("USWAG").[105] USWAG addresses solid and hazardous waste issues on behalf of utilities and trade associations, while pursuing a litigious agenda against

---

[101] *Id.* at 9–10.
[102] *See* Adam Browning, *Edison Electric Institute Really Does Not Want You to Go Solar*, Greentech Media, Feb. 28, 2014, https://www.greentechmedia.com/articles/read/in-rare-public-filing-edison-institute-downplays-value-of-solar-for-arizon; *see also* EEITV, *We All Rely on the Electric Grid*, YouTube (Nov. 3, 2013), https://www.youtube.com/watch?v=Ut1_PosSLtk.
[103] *See* Jennifer Yachnin, *American Gas Association Seeking to Spread Its Influence Well Beyond the Beltway*, E&E Daily, Dec. 9, 2011, https://www.eenews.net/stories/1059957439.
[104] Alexander C. Kaufman, *Natural Gas Industry Brings a Fake Grassroots Movement Group to Eastern Pipeline Fights*, HuffPost, June 19 2017 (updated), http://www.huffingtonpost.com/entry/natural-gas-pipeline-your-energy-virginia_us_593afeb1e4b0240268793e8d.
[105] *See Utility Solid Waste Activities Group*, EEI http://www.eei.org/about/affiliates/uswag/Pages/default.aspx (last visited May 24, 2018).

common sense environmental rules and regulations.[106] For example, the EPA Coal Combustion Residuals Rule places basic requirements on the maintenance, cleanup, and groundwater monitoring of coal ash waste.[107] USWAG is petitioning the EPA for a stay of the rule, calling it "ill-conceived and burdensome."[108] This action is likely to harm customers through reduced regulatory oversight and increased risk of environmental and public health hazards.

Q. Do any third-party regulatory organizations conduct oversight of utility EEI and AGA dues?

A. No, there is no regulatory oversight of the allocation of trade association membership dues today. From the 1980s to the early 2000s, NARUC conducted annual audits of trade association financial records through the Committee on Utility Oversight.[109] The audits persuaded NARUC regulators to direct utilities to collect a smaller portion of their EEI and AGA dues from ratepayers.[110] The Committee on Utility Oversight, which audited

---

[106] *See* Press Release, Earthjustice, Polluters Ask Trump Administration to Cut Safeguards for Nation's No. 2 Toxic Pollution Threat, May 12, 2017, https://earthjustice.org/news/press/2017/polluters-ask-trump-administration-to-cut-safeguards-for-nation-s-no-2-toxic-pollution-threat.

[107] *See* Disposal of Coal Combustion Residuals from Electric Utilities, 80 Fed. Reg. 21,301 (Apr. 17, 2015).

[108] USWAG Petition for Rulemaking to Reconsider Provisions of the Coal Combustion Residuals Rule, 80 Fed. Reg. 21,302 (Apr. 17, 2015), and Request to Hold in Abeyance Challenge to Coal Combustion Rule, No. 15-1219, et al. (D.C. Cir.) (EPA May 12, 2017); *see* Lyndsey Gilpin, *As Coal Ash Rules are Challenged, Activists Worry About Long-Term Monitoring*, Southeast Energy News, June 13, 2017, http://southeastenergynews.com/2017/06/13/as-coal-ash-rules-are-challenged-activists-worry-about-long-term-monitoring/.

[109] *See* NARUC Bd. of Directors, Resolution Regarding Discontinuation of the Committee on Utility Oversight (adopted Mar. 8, 2000), http://pubs.naruc.org/pub/5398B543-2354-D714-51D3-90ACAB1DA952.

[110] *See* EPI, *Paying for Utility Politics*, at 6.

expenditure data, disbanded in the year 2000.[111] Recently, utilities have been seeking lower than usual amounts from shareholders, and correspondingly higher shares from customers—though there is no evidence of a major shift in program efforts at either EEI or AGA. For example, Georgia Power proposed 29% of EEI dues as below-the-line expenses in a 2016 filing,[112] NV Energy proposed 16% in a 2015 filing,[113] and Oklahoma Gas & Electric proposed 0% in a 2016 filing.[114] Without transparency of spending data, it is difficult to fully understand how EEI and AGA spend ratepayer funds. The Commission is the best institution to re-address this issue in the absence of a coordinated multi-state audit like the audit NARUC conducted.

Q. Have other public utility commissions addressed this issue?

A. While I have not conducted a comprehensive survey of all states, commissions in California and Missouri have addressed the issue in recent rate cases. In 2013, the Utility Reform Network ("TURN"), a California-based advocacy organization that represents consumers before the California Public Utilities Commission ("CPUC"), succeeded in challenging the above-the-line EEI dues allocation proposed by Pacific Gas & Electric Co. ("PG&E").[115] TURN argued that "EEI spends money on many other things that do not fit the narrow definition of lobbying" but nevertheless could impair ratepayer

---

[111] *See* NARUC Bd. of Directors, Resolution Regarding Discontinuation of the Committee on Utility Oversight (adopted Mar. 8, 2000).
[112] *See id.* at 20.
[113] *See id.* at 24.
[114] *See id.* at 20–21 & tbl.1; Responsive Testimony of Sharhonda Dodoo at 5:17–6:2 & tbl.1, *In re Okla. Gas & Elec. Co.*, No. PUD 201500273 (Corp. Comm'n Okla. Mar. 21, 2016), https://www.documentcloud.org/documents/3111578-Sharhonda-Dodoo-PUD-Testimony-OGE-Dues.html#document/p6/a318911.
[115] *See* EPI, *Paying for Utility Politics*, at 34–37.

interests and therefore should not be funded by ratepayers.[116] Based on TURN's argument and the most recent 2005 NARUC audited data, the CPUC decided to increase the allocation of below-the-line dues from the 25% proposed by PG&E to 43.3%.[117] In a later Southern California Edison ("SCE") case, SCE proposed to recover only 24% from shareholders, while TURN requested that 100% of EEI dues be disallowed.[118] In that instance, the Administrative Law Judge agreed that SCE has "not shown that it has removed all political or lobbying costs from its forecast."[119] In the ruling, the Administrative Law Judge proposed to increase the below-the-line allocation to 47.9% from SCE's proposed 24%.[120]

In 2015, the Missouri Public Service Commission ("MO-PSC") staff presented testimony in support of disallowing all above-the-line EEI dues, stating: "Staff's recommendation to disallow the entire amount of EEI dues stems from [Union Electric Co. d/b/a Ameren Missouri's] failure to quantify these benefits between shareholders and the ratepayers."[121] MO-PSC staff noted that the MO-PSC had excluded all EEI dues in a prior proceeding on the ground that "these payments have not been shown to produce any

[116] William B. Marcus, Electric Generation and Other Results of Operations Issues for Pacific Gas & Electric Co., Prepared Testimony on behalf of TURN at 68, *In re Pacific Gas & Elec. Co.*, Appl'n No. 12-11-009 (CPUC May 17, 2013), https://assets.documentcloud.org/documents/3382426/TURN-PGE-Testimony-2014-Rate-Request.pdf.
[117] Proposed Decision Granting Compensation to The Utility Reform Network for Substantial Contribution to Decision 14-08-032 at 8, *In re Pacific Gas & Elec. Co.*, Appl'n No. 12-11-009 (CPUC undated), https://www.documentcloud.org/documents/3239245-COMPENSATION-to-TURN-for-SUBSTANTIAL.html#document/p8/a331970.
[118] *See* EPI, *Paying for Utility Politics*, at 35–37.
[119] *Id.* at 36.
[120] *See id.*
[121] Surrebuttal Testimony of Jason Kunst, *In re Union Elec. Co. d/b/a Ameren Missouri*, Case No. ER-2014-0258 at 2 (MO-PSC Feb. 6, 2015) (citation omitted), https://assets.documentcloud.org/documents/3320628/MO-PSC-Surrebuttal-Testimony-Dues.pdf.

direct benefit to the ratepayers."[122] After negotiations, the MO-PSC staff and Ameren Missouri agreed to entry of a settlement order.[123]

Q. What do you propose to ensure that ratepayers are not required to fund activities from which they receive no benefit or by which they risk being harmed?

A. The Company must provide sufficiently detailed information regarding the membership dues cost allocation as an incident to its burden of producing sufficient evidence that its requested rates are just and reasonable. This evidence must demonstrate that above-the-line dues to EEI and AGA: (1) directly benefit ratepayers and (2) do not work contrary to ratepayer interests. Due to the conflict of interest between those organizations and New York ratepayers, and in the absence of a third-party audit in the record, it is not reasonable to rely merely upon the assertions of EEI and AGA themselves. The data submitted by the Company therefore is inadequate to carry the Company's burden of demonstrating that its rates are just and reasonable or to confirm that ratepayers are not being asked to pay for lobbying or political advocacy activities carried out by the EEI or AGA.

Q. What do you recommend that the Commission do in the face of this lack of evidence?

A. Because the Company has not provided sufficient and competent evidence to support a finding that the dues it is asking ratepayers to pay are a just and reasonable expense, I recommend that the total amount of requested revenue requirement related to membership dues in EEI and AGA be disallowed.

---

[122] *Id.* at 3 (quoting Report and Order, *In re Union Electric Company*, Case No. EC-87-114 (MO-PSC)).
[123] EPI, *Paying for Utility Politics*, at 31.

V. RECOMMENDATIONS

Q. Based on the foregoing testimony, what are your recommendations to the Commission?

A. I recommend that the Commission:

- Deny the Company's proposed fixed customer charge increase.
- Find that the minimum system approach to functionalization of costs is inconsistent with sound rate making principles and with New York energy and REV policy goals.
- Order the Company to submit a new rate application that is based on a new ECOSS that incorporates an approach to building the customer charge that assigns as customer costs only those costs associated with connecting a customer to the grid. In the alternative, order the Company to file a new ECOSS in its next rate application and until then to implement the reduced residential customer service charge proposed in Figure KRR-3.
- Deny all of the Company's proposals for gas system expansion and load building, and for imposing the costs of those expansions on all gas customers. Impose a moratorium on all gas expansion programs and spending. Order the Company to develop and submit a BCA tool that will be public and transparent and that accounts for long-term costs and benefits on a full societal basis. Order the Company to begin to develop a plan for long-term managed decapitalization of the gas system.
- Deny the Company's proposal for recovery of EEI and AGA trade association dues payments from ratepayers. Order the Company to ensure that any future request for rate recovery of such expenses be fully supported by objective and reliable evidence

that the funds recovered from ratepayers do not support lobbying activities by the organizations.

Q. Does this conclude your testimony?

A. Yes.

Testimony of Karl R. Rábago

Case Nos. 18-E-0067 & 18-G-0068

Exhibit __ (KRR-1)

Karl R. Rábago Resume

Karl R. Rábago

Executive Director, Pace Energy and Climate Center
Elisabeth Haub School of Law
78 North Broadway, White Plains, NY 10603

c: +1.512.968.7543 e: krabago@law.pace.edu

Summary

Nationally recognized leader and innovator in electricity and energy law, policy, and regulation. Experienced as a public utility regulatory commissioner, educator, research and development program manager, utility executive, business builder, federal executive, corporate sustainability leader, consultant, and advocate. Highly proficient in advising, managing, and interacting with government agencies and committees, the media, citizen groups, and business associations. Successful track record of working with US Congress, state legislatures, governors, regulators, city councils, business leaders, researchers, academia, and community groups. National and international contacts through experience with Pace Energy and Climate Center, Austin Energy, AES Corporation, US Department of Energy, Texas Public Utility Commission, Jicarilla Apache Tribal Utility Authority, Cargill Dow LLC (now NatureWorks, LLC), Rocky Mountain Institute, CH2M HILL, Houston Advanced Research Center, Environmental Defense Fund, and others. Skilled attorney, negotiator, and advisor with more than twenty-five years of experience working with diverse stakeholder communities in electricity policy and regulation, emerging energy markets development, clean energy technology development, electric utility restructuring, smart grid development, and the implementation of sustainability principles. Extensive regulatory practice experience. Nationally recognized speaker on energy, environment and sustainable development matters. Managed staff as large as 250; responsible for operations of research facilities with staff in excess of 600. Developed and managed budgets in excess of $300 million. Law teaching experience at Pace University School of Law, University of Houston Law Center, and U.S. Military Academy at West Point. Post-doctorate degrees in environmental and military law. Military veteran.

Employment

PACE ENERGY AND CLIMATE CENTER, PACE UNIVERSITY SCHOOL OF LAW

Executive Director: May 2014—Present.

Leader of a team of professional and technical experts in energy and climate law, policy, and regulation. Responsible for crafting and leading an advocacy agenda on utility sector transformation and clean energy advancement. Active in every aspect of groundbreaking New York "Reforming the Energy Vision" portfolio of proceedings. Engaged in solar market policy across the northeast United States. Built a team of experts engaged in grid modernization efforts in multiple states. Developed a new "Equitable Access to Sustainable Energy" initiative that engages with and support clean energy efforts of low- and moderate-income communities and organizations. Secure funding for and manage execution of research, market development support, and advisory services for a wide range of funders, clients, and stakeholders with the overall goal of advancing clean energy deployment, climate responsibility, and market efficiency. Supervise a team of employees, consultants, and adjunct researchers. Provide learning and development opportunities for law students. Coordinate efforts of the Center with and support the environmental law faculty. Additional activities:

- Co-Director and Principal Investigator, Northeast Solar Energy Market Coalition (2015-present). The NESEMC is a US Department of Energy's SunShot Initiative Solar Market Pathways project. Funded under a cooperative agreement between the US DOE and Pace University, the NESEMC seeks to harmonize solar market policy and advance best policy and regulatory practices in the northeast United States.

- Chairman of the Board, Center for Resource Solutions (1997-present). CRS is a not-for-profit organization based at the Presidio in California. CRS developed and manages the Green-e Renewable Electricity Brand, a nationally and internationally recognized branding program for green power and green pricing products and programs. Past chair of the Green-e Governance Board (formerly the Green Power Board).
- Director, Interstate Renewable Energy Council (IREC) (2012-present). IREC focuses on issues impacting expanded renewable energy use such as rules that support renewable energy and distributed resources in a restructured market, connecting small-scale renewables to the utility grid, developing quality credentials that indicate a level of knowledge and skills competency for renewable energy professionals.

RÁBAGO ENERGY LLC

Principal: July 2012—Present. Consulting practice dedicated to providing expert witness and policy formulation advice and services to organizations in the clean and advanced energy sectors. Frequent testimony in utility rate-setting cases, plan reviews, and grid modernization cases. Recognized national leader in development and implementation of award-winning "Value of Solar" alternative to traditional net metering. Additional information at www.rabagoenergy.com.

AUSTIN ENERGY – THE CITY OF AUSTIN, TEXAS

Vice President, Distributed Energy Services: April 2009—June 2012. Executive in 8th largest public power electric utility serving more than one million people in central Texas. Responsible for management and oversight of energy efficiency, demand response, and conservation programs; low-income weatherization; distributed solar and other renewable energy technologies; green buildings program; key accounts relationships; electric vehicle infrastructure; and market research and product development. Executive sponsor of Austin Energy's participation in an innovative federally-funded smart grid demonstration project led by the Pecan Street Project. Led teams that successfully secured over $39 million in federal stimulus funds for energy efficiency, smart grid, and advanced electric transportation initiatives. Additional activities included:

- Director, Renewable Energy Markets Association. REMA is a trade association dedicated to maintaining and strengthening renewable energy markets in the United States.
- Membership on Pedernales Electric Cooperative Member Advisory Board. Invited by the Board of Directors to sit on first-ever board to provide formal input and guidance on energy efficiency and renewable energy issues for the nation's largest electric cooperative.

THE AES CORPORATION

Director, Government & Regulatory Affairs: June 2006—December 2008. Government and regulatory affairs manager for AES Wind Generation, one of the largest wind companies in the country. Manage a portfolio of regulatory and legislative initiatives to support wind energy market development in Texas, across the United States, and in many international markets. Active in national policy and the wind industry through work with the American Wind Energy Association as a participant on the organization's leadership council. Also served as Managing Director, Standards and Practices, for Greenhouse Gas Services, LLC, a GE and AES venture committed to generating and marketing greenhouse gas credits to the U.S. voluntary market. Authored and implemented a standard of practice based on ISO 14064 and industry best practices. Commissioned the development of a suite of methodologies and tools for various greenhouse gas credit-producing technologies. Also served as Director, Global Regulatory Affairs, providing regulatory support and group management to AES's international electric utility operations on five continents. Additional activities:

- Director and past Chair, Jicarilla Apache Nation Utility Authority (1998 to 2008). Located in New Mexico, the JAUA is an independent utility developing profitable and autonomous utility services that provides natural gas, water utility services, low income housing, and energy planning for the Nation. Authored "First Steps" renewable energy and energy efficiency strategic plan.

HOUSTON ADVANCED RESEARCH CENTER

Group Director, Energy and Buildings Solutions: December 2003—May 2006. Leader of energy and building science staff at a mission-driven not-for-profit contract research organization based in The Woodlands, Texas. Responsible for developing, maintaining and expanding upon technology development, application, and commercialization support programmatic activities, including the Center for Fuel Cell Research and Applications, an industry-driven testing and evaluation center for near-commercial fuel cell generators; the Gulf Coast Combined Heat and Power Application Center, a state and federally funded initiative; and the High Performance Green Buildings Practice, a consulting and outreach initiative. Secured funding for major new initiative in carbon nanotechnology applications in the energy sector. Developed and launched new and integrated program activities relating to hydrogen energy technologies, combined heat and power, distributed energy resources, renewable energy, energy efficiency, green buildings, and regional clean energy development. Active participant in policy development and regulatory implementation in Texas, the Southwest, and national venues. Frequently engaged with policy, regulatory, and market leaders in the region and internationally. Additional activities:

- President, Texas Renewable Energy Industries Association. As elected president of the statewide business association, leader and manager of successful efforts to secure and implement significant expansion of the state's renewable portfolio standard as well as other policy, regulatory, and market development activities.
- Director, Southwest Biofuels Initiative. Established the Initiative acts as an umbrella structure for a number of biofuels related projects, including emissions evaluation for a stationary biodiesel pilot project, feedstock development, and others.
- Member, Committee to Study the Environmental Impacts of Windpower, National Academies of Science National Research Council. The Committee was chartered by Congress and the Council on Environmental Quality to assess the impacts of wind power on the environment.
- Advisory Board Member, Environmental & Energy Law & Policy Journal, University of Houston Law Center.

CARGILL DOW LLC (NOW NATUREWORKS, LLC)

Sustainability Alliances Leader: April 2002—December 2003. Founded in 1997, NatureWorks, LLC is based in Minnetonka, Minnesota. Integrated sustainability principles into all aspects of a ground-breaking biobased polymer manufacturing venture. Responsible for maintaining, enhancing and building relationships with stakeholders in the worldwide sustainability community, as well as managing corporate and external sustainability initiatives. NatureWorks is the first company to offer its customers a family of polymers (polylactide – "PLA") derived entirely from annually renewable resources with the cost and performance necessary to compete with packaging materials and traditional fibers; now marketed under the brand name "Ingeo."

- Successfully completed Minnesota Management Institute at University of Minnesota Carlson School of Management, an alternative to an executive MBA program that surveyed fundamentals and new developments in finance, accounting, operations management, strategic planning, and human resource management.

ROCKY MOUNTAIN INSTITUTE

Managing Director/Principal: October 1999–April 2002. In two years, co-led the team and grew annual revenues from approximately $300,000 to more than $2 million in annual grant and consulting income. Co-authored “Small Is Profitable,” a comprehensive analysis of the benefits of distributed energy resources. Worked to increase market opportunities for clean and distributed energy resources through consulting, research, and publication activities. Provided consulting and advisory services to help business and government clients achieve sustainability through application and incorporation of Natural Capitalism principles. Frequent appearance in media at international, national, regional and local levels.

- President of the Board, Texas Ratepayers Organization to Save Energy. Texas R.O.S.E. is a non-profit organization advocating low-income consumer issues and energy efficiency programs.
- Co-Founder and Chair of the Advisory Board, Renewable Energy Policy Project-Center for Renewable Energy and Sustainable Technology. REPP-CREST was a national non-profit research and internet services organization.

CH2M HILL

Vice President, Energy, Environment and Systems Group: July 1998–August 1999. Responsible for providing consulting services to a wide range of energy-related businesses and organizations, and for creating new business opportunities in the energy industry for an established engineering and consulting firm. Completed comprehensive electric utility restructuring studies for the states of Colorado and Alaska.

PLANERGY

Vice President, New Energy Markets: January 1998–July 1998. Responsible for developing and managing new business opportunities for the energy services market. Provided consulting and advisory services to utility and energy service companies.

ENVIRONMENTAL DEFENSE FUND

Energy Program Manager: March 1996–January 1998. Managed renewable energy, energy efficiency, and electric utility restructuring programs for a not-for-profit environmental group with a staff of 160 and over 300,000 members. Led regulatory intervention activities in Texas and California. Initiated and managed nationwide collaborative activities aimed at increasing use of renewable energy and energy efficiency technologies in the electric utility industry, including the Green-e Certification Program, Power Scorecard, and others. Participated in national environmental and energy advocacy networks, including the Energy Advocates Network, the National Wind Coordinating Committee, the NCSL Advisory Committee on Energy, and the PV-COMPACT Coordinating Council. Frequently appeared before the Texas Legislature, Austin City Council, and regulatory commissions on electric restructuring issues.

UNITED STATES DEPARTMENT OF ENERGY

Deputy Assistant Secretary, Utility Technologies: January 1995–March 1996. Manager of the Department’s programs in renewable energy technologies and systems, electric energy systems, energy efficiency, and integrated resource planning. Supervised technology research, development and deployment activities in photovoltaics, wind energy, geothermal energy, solar thermal energy, biomass energy, high-temperature superconductivity, transmission and distribution, hydrogen, and electric and magnetic fields. Developed, coordinated, and advised on legislation, policy, and renewable energy technology development within the Department, among other agencies, and with Congress. Managed, coordinated, and developed international agreements for cooperative activities in renewable energy and utility sector policy, regulation, and market development. Established and enhanced partnerships with stakeholder groups, including technology firms, utilities, state and local governments, and associations. Supervised development and deployment support activities at national laboratories. Developed, advocated and managed a Congressional budget appropriation of approximately $300 million.

STATE OF TEXAS

Commissioner, Public Utility Commission of Texas. May 1992–December 1994. Appointed by Governor Ann W. Richards. Regulated electric and telephone utilities in Texas. Laid the groundwork for legislative and regulatory adoption of integrated resource planning, electric utility restructuring, and significantly increased use of renewable energy and energy efficiency resources. Co-chair and organizer of the Texas Sustainable Energy Development Council. Vice-Chair of the National Association of Regulatory Utility Commissioners (NARUC) Committee on Energy Conservation. Member and co-creator of the Photovoltaic Collaborative Market Project to Accelerate Commercial Technology (PV-COMPACT). Member, Southern States Energy Board Integrated Resource Planning Task Force. Member of the University of Houston Environmental Institute Board of Advisors.

LAW TEACHING

Professor for a Designated Service: Pace University Law School, 2014-present. Non-tenured member of faculty. Courses taught: Energy Law. Supervise a student clinical effort that engages in a wide range of advocacy, analysis, and research activities in support of the mission of the Pace Energy and Climate Center.

Associate Professor of Law: University of Houston Law Center, 1990–1992. Full time, tenure track member of faculty. Courses taught: Criminal Law, Environmental Law, Criminal Procedure, Environmental Crimes Seminar, Wildlife Protection Law. Provided *pro bono* legal services in administrative proceedings and filings at the Texas Public Utility Commission.

Assistant Professor: United States Military Academy, West Point, New York, 1988–1990. Member of the faculty in the Department of Law. Honorably discharged in August 1990, as Major in the Regular Army. Courses taught: Constitutional Law, Military Law, and Environmental Law Seminar. While carrying a full time teaching load, earned a Master of Laws degree in Environmental Law. Established a program for subsequent environmental law professors to obtain an LL.M. prior to joining the faculty.

LITIGATION

Trial Defense Attorney and Prosecutor, U.S. Army Judge Advocate General's Corps, Fort Polk, Louisiana, January 1985–July 1987. Assigned to Trial Defense Service and Office of the Staff Judge Advocate. Prosecuted and defended more than 150 felony-level courts-martial. As prosecutor, served as legal officer for two brigade-sized units (approximately 5,000 soldiers), advising commanders on appropriate judicial, non-judicial, separation, and other actions. Pioneered use of some forms of psychiatric and scientific testimony in administrative and judicial proceedings.

NON-LEGAL MILITARY SERVICE

Armored Cavalry Officer, 2d Squadron 9th Armored Cavalry, Fort Stewart, Georgia, May 1978–August 1981. Served as Logistics Staff Officer (S-4). Managed budget, supplies, fuel, ammunition, and other support for an Armored Cavalry Squadron. Served as Support Platoon Leader for the Squadron (logistical support), and as line Platoon Leader in an Armored Cavalry Troop. Graduate of Airborne and Ranger Schools. Special training in Air Mobilization Planning and Nuclear, Biological and Chemical Warfare.

Formal Education

LL.M., Environmental Law, Pace University School of Law, 1990: Curriculum designed to provide breadth and depth in study of theoretical and practical aspects of environmental law. Courses included: International and Comparative Environmental Law, Conservation Law, Land Use Law, Seminar in Electric Utility Regulation, Scientific and Technical Issues Affecting Environmental Law, Environmental Regulation of Real Estate, Hazardous Wastes Law. Individual research with Hudson Riverkeeper Fund, Garrison, New York.

LL.M., Military Law, U.S. Army Judge Advocate General's School, 1988: Curriculum designed to prepare Judge Advocates for senior level staff service. Courses included: Administrative Law, Defensive Federal Litigation, Government Information Practices, Advanced Federal Litigation, Federal Tort Claims Act Seminar, Legal Writing and Communications, Comparative International Law.

J.D. with Honors, University of Texas School of Law, 1984: Attended law school under the U.S. Army Funded Legal Education Program, a fully funded scholarship awarded to 25 or fewer officers each year. Served as Editor-in-Chief (1983–84); Articles Editor (1982–83); Member (1982) of the Review of Litigation. Moot Court, Mock Trial, Board of Advocates. Summer internship at Staff Judge Advocate's offices. Prosecuted first cases prior to entering law school.

B.B.A., Business Management, Texas A&M University, 1977: ROTC Scholarship (3–yr). Member: Corps of Cadets, Parson's Mounted Cavalry, Wings & Sabers Scholarship Society, Rudder's Rangers, Town Hall Society, Freshman Honor Society, Alpha Phi Omega service fraternity.

Selected Publications

"Achieving very high PV penetration – The need for an effective electricity remuneration framework and a central role for grid operators," Richard Perez (corresponding author), Energy Policy, Vol. 96, pp. 27-35 (2016)

"The Net Metering Riddle," Electricity Policy.com, (April 2016)

"The Clean Power Plan," Power Engineering Magazine (invited editorial), Vol. 119, Issue 12 (Dec. 2, 2015)

"The 'Sharing Utility:' Enabling & Rewarding Utility Performance, Service & Value in a Distributed Energy Age," co-author, 51st State Initiative, Solar Electric Power Association (Feb. 27, 2015)

"Rethinking the Grid: Encouraging Distributed Generation," Building Energy Magazine, Vol. 33, No. 1 Northeast Sustainable Energy Association (Spring 2015)

"The Value of Solar Tariff: Net Metering 2.0," The ICER Chronicle, Ed. 1, p. 46 [International Confederation of Energy Regulators] (December 2013)

"A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation," co-author, Interstate Renewable Energy Council (October 2013)

"The 'Value of Solar' Rate: Designing an Improved Residential Solar Tariff," Solar Industry, Vol. 6, No. 1 (Feb. 2013)

"A Review of Barriers to Biofuels Market Development in the United States," 2 Environmental & Energy Law & Policy Journal 179 (2008)

"A Strategy for Developing Stationary Biodiesel Generation," Cumberland Law Review, Vol. 36, p.461 (2006)

"Evaluating Fuel Cell Performance through Industry Collaboration," co-author, Fuel Cell Magazine (2005)

"Applications of Life Cycle Assessment to NatureWorks™ Polylactide (PLA) Production," co-author, Polymer Degradation and Stability 80, 403-19 (2003)

"An Energy Resource Investment Strategy for the City of San Francisco: Scenario Analysis of Alternative Electric Resource Options," contributing author, Prepared for the San Francisco Public Utilities Commission, Rocky Mountain Institute (2002)

"Small Is Profitable: The Hidden Economic Benefits of Making Electrical Resources the Right Size," co-author, Rocky Mountain Institute (2002)

"Socio-Economic and Legal Issues Related to an Evaluation of the Regulatory Structure of the Retail Electric Industry in the State of Colorado," with Thomas E. Feiler, Colorado Public Utilities Commission and Colorado Electricity Advisory Panel (April 1, 1999)

"Study of Electric Utility Restructuring in Alaska," with Thomas E. Feiler, Legislative Joint Committee on electric Restructuring and the Alaska Public Utilities Commission (April 1, 1999)

"New Markets and New Opportunities: Competition in the Electric Industry Opens the Way for Renewables and Empowers Customers," EEBA Excellence (Journal of the Energy Efficient Building Association) (Summer 1998)

"Building a Better Future: Why Public Support for Renewable Energy Makes Sense," Spectrum: The Journal of State Government (Spring 1998)

"The Green-e Program: An Opportunity for Customers," with Ryan Wiser and Jan Hamrin, Electricity Journal, Vol. 11, No. 1 (January/February 1998)

"Being Virtual: Beyond Restructuring and How We Get There," Proceedings of the First Symposium on the Virtual Utility, Klewer Press (1997)

"Information Technology," Public Utilities Fortnightly (March 15, 1996)

"Better Decisions with Better Information: The Promise of GIS," with James P. Spiers, Public Utilities Fortnightly (November 1, 1993)

"The Regulatory Environment for Utility Energy Efficiency Programs," Proceedings of the Meeting on the Efficient Use of Electric Energy, Inter-American Development Bank (May 1993)

"An Alternative Framework for Low-Income Electric Ratepayer Services," with Danielle Jaussaud and Stephen Benenson, Proceedings of the Fourth National Conference on Integrated Resource Planning, National Association of Regulatory Utility Commissioners (September 1992)

"What Comes Out Must Go In: The Federal Non-Regulation of Cooling Water Intakes Under Section 316 of the Clean Water Act," Harvard Environmental Law Review, Vol. 16, p. 429 (1992)

"Least Cost Electricity for Texas," State Bar of Texas Environmental Law Journal, Vol. 22, p. 93 (1992)

"Environmental Costs of Electricity," Pace University School of Law, Contributor–Impingement and Entrainment Impacts, Oceana Publications, Inc. (1990)

Testimony of Karl R. Rábago

Case Nos. 18-E-0067 & 18-G-0068

Exhibit __ (KRR-2)

List of Prior Testimony

Testimony Submitted by Karl R. Rábago, on behalf of Pace Energy and Climate Center, or through Rábago Energy LLC

(as of 9 May 2018)

Date	Proceeding	Case/Docket #	On Behalf Of:
Dec. 21, 2012	VA Electric & Power Special Solar Power Tariff	Virginia SCC Case # PUE-2012-00064	Southern Environmental Law Center
May 10, 2013	Georgia Power Company 2013 IRP	Georgia PSC Docket # 36498	Georgia Solar Energy Industries Association
Jun. 23, 1203	Louisiana Public Service Commission Re-examination of Net Metering Rules	Louisiana PSC Docket # R-31417	Gulf States Solar Energy Industries Association
Aug. 29, 2013	DTE (Detroit Edison) 2013 Renewable Energy Plan Review (Michigan)	Michigan PUC Case # U-17302	Environmental Law and Policy Center
Sep. 5, 2013	CE (Consumers Energy) 2013 Renewable Energy Plan Review (Michigan)	Michigan PUC Case # U-17301	Environmental Law and Policy Center
Sep. 27, 2013	North Carolina Utilities Commission 2012 Avoided Cost Case	North Carolina Utilities Commission Docket # E-100, Sub. 136	North Carolina Sustainable Energy Association
Oct. 18, 2013	Georgia Power Company 2013 Rate Case	Georgia PSC Docket # 36989	Georgia Solar Energy Industries Association
Nov. 4, 2013	PEPCO Rate Case (District of Columbia)	District of Columbia PSC Formal Case # 1103	Grid 2.0 Working Group & Sierra Club of Washington, D.C.
Apr. 24, 2014	Dominion Virginia Electric Power 2013 IRP	Virginia SCC Case # PUE-2013-00088	Environmental Respondents
May 7, 2014	Arizona Corporation Commission Investigation on the Value and Cost of Distributed Generation	Arizona Corporation Commission Docket # E-00000J-14-0023	Rábago Energy LLC (invited presentation and workshop participation)
Jul. 10, 2014	North Carolina Utilities Commission 2014 Avoided Cost Case	North Carolina Utilities Commission Docket # E-100, Sub. 140	Southern Alliance for Clean Energy
Jul. 23, 2014	Florida Energy Efficiency and Conservation Act, Goal Setting – FPL, Duke, TECO, Gulf	Florida PSC Docket # 130199-EI, 130200-EI, 130201-EI, 130202-EI	Southern Alliance for Clean Energy
Sep. 19, 2014	Ameren Missouri's Application for Authorization to Suspend Payment of Solar Rebates	Missouri PSC File No. ET-2014-0350, Tariff # YE-2014-0494	Missouri Solar Energy Industries Association
Aug. 6, 2014	Appalachian Power Company 2014 Biennial Rate Review	Virginia SCC Case # PUE-2014-00026	Southern Environmental Law Center (Environmental Respondents)

Aug. 13, 2014	Wisconsin Public Service Corp. 2014 Rate Application	Wisconsin PSC Docket # 6690-UR-123	RENEW Wisconsin and Environmental Law & Policy Center
Aug. 28, 2014	WE Energies 2014 Rate Application	Wisconsin PSC Docket # 05-UR-107	RENEW Wisconsin and Environmental Law & Policy Center
Sep. 18, 2014	Madison Gas & Electric Company 2014 Rate Application	Wisconsin PSC Docket # 3720-UR-120	RENEW Wisconsin and Environmental Law & Policy Center
Sep. 29, 2014	SOLAR, LLC v. Missouri Public Service Commission	Missouri District Court Case # 14AC-CC00316	SOLAR, LLC
Jan. 28, 2016 (date of CPUC order)	Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs, etc.	California PUC Rulemaking 14-07-002	The Utility Reform Network (TURN)
Mar. 20, 2015	Orange and Rockland Utilities 2015 Rate Application	New York PSC Case # 14-E-0493	Pace Energy and Climate Center
May 22, 2015	DTE Electric Company Rate Application	Michigan PSC Case # U-17767	Michigan Environmental Council, NRDC, Sierra Club, and ELPC
Jul. 20, 2015	Hawaiian Electric Company and NextEra Application for Change of Control	Hawai'i PUC Docket # 2015-0022	Hawai'i Department of Business, Economic Development, and Tourism
Sep. 2, 2015	Wisc. PSCo Rate Application	Wisconsin PSC Case # 6690-UR-124	ELPC
Sep. 15, 2015	Dominion Virginia Electric Power 2015 IRP	VA SCC Case # PUE-2015-00035	Environmental Respondents
Sep. 16, 2015	NYSEG & RGE Rate Cases	New York PSC Cases 15-E-0283, -0285	Pace Energy and Climate Center
Oct. 14, 2015	Florida Power & Light Application for CCPN for Lake Okeechobee Plant	Florida PSC Case 150196-EI	Environmental Confederation of Southwest Florida
Oct. 27, 2015	Appalachian Power Company 2015 IRP	VA SCC Case # PUE-2015-00036	Environmental Respondents
Nov. 23, 2015	Narragansett Electric Power/National Grid Rate Design Application	Rhode Island PUC Docket No. 4568	Wind Energy Development, LLC
Dec. 8, 2015	State of West Virginia, et al., v. U.S. EPA, et al.	U.S. Court of Appeals for the District of Columbia Circuit Case No. 15-1363 and Consolidated Cases	Declaration in Support of Environmental and Public Health Intervenors in Support of Movant Respondent-Intervenors' Responses in Opposition to Motions for Stay

Dec. 28, 2015	Ohio Power/AEP Affiliate PPA Application	PUC of Ohio Case No. 14-1693-EL-RDR	Environmental Law and Policy Center
Jan. 19, 2016	Ohio Edison Company, Cleveland Electric Illuminating Company, and Toledo Edison Company Application for Electric Security Plan (FirstEnergy Affiliate PPA)	PUC of Ohio Case No. 14-1297-EL-SSO	Environmental Law and Policy Center
Jan. 22, 2016	Northern Indiana Public Service Company (NIPSCO) Rate Case	Indiana Utility Regulatory Commission Cause No. 44688	Citizens Action Coalition and Environmental Law and Policy Center
Mar. 18, 2016	Northern Indiana Public Service Company (NIPSCO) Rate Case – Settlement Testimony	Indiana Utility Regulatory Commission Cause No. 44688	Joint Intervenors - Citizens Action Coalition and Environmental Law and Policy Center
Mar. 18, 2016	Comments on Pilot Rate Proposals by MidAmerican and Alliant	Iowa Utility Board NOI-2014-0001	Environmental Law and Policy Center
May 27, 2016	Consolidated Edison of New York Rate Case	New York PSC Case No. 16-E-0060	Pace Energy and Climate Center
June 21, 2016	Federal Trade Commission: Workshop on Competition and Consumer Protection Issues in Solar Energy	Invited workshop presentation	Pace Energy and Climate Center
Aug. 17, 2016	Dominion Virginia Electric Power 2016 IRP	VA SCC Case # PUE-2016-00049	Environmental Respondents
Sep. 13, 2016	Appalachian Power Company 2016 IRP	VA SCC Case # PUE-2016-00050	Environmental Respondents
Oct. 27, 2016	Consumers Energy PURPA Compliance Filing	Michigan PSC Case No. U-18090	Environmental Law & Policy Center, "Joint Intervenors"
Oct. 28, 2016	Delmarva, PEPCO (PHI) Utility Transformation Filing – Review of Filing & Utilities of the Future Whitepaper	Maryland PSC Case PC 44	Public Interest Advocates
Dec. 1, 2016	DTE Electric Company PURPA Compliance Filing	Michigan PSC Case No. U-18091	Environmental Law & Policy Center, "Joint Intervenors"
Dec. 16, 2016	Rebuttal of Unitil Testimony in Net Energy Metering Docket	New Hampshire Docket No. DE 16-576	New Hampshire Sustainable Energy Association ("NHSEA")
Jan. 13, 2017	Gulf Power Company Rate Case	Florida Docket No. 160186-EI	Earthjustice, Southern Alliance for Clean Energy, League of Women Voters-Florida

Jan. 13, 2017	Alpena Power Company PURPA Compliance Filing	Michigan PSC Case No. U-18089	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Indiana Michigan Power Company PURPA Compliance Filing	Michigan PSC Case No. U-18092	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Northern States Power Company PURPA Compliance Filing	Michigan PSC Case No. U-18093	Environmental Law & Policy Center, "Joint Intervenors"
Jan. 13, 2017	Upper Peninsula Power Company PURPA Compliance Filing	Michigan PSC Case No. U-18094	Environmental Law & Policy Center, "Joint Intervenors"
Mar. 10, 2017	Eversource Energy Grid Modernization Plan	Massachusetts DPU Case No. 15-122/15-123	Cape Light Compact
Apr. 27, 2017	Eversource Rate Case & Grid Modernization Investments	Massachusetts DPU Case No. 17-05	Cape Light Compact
May 2, 2017	AEP Ohio Power Electric Security Plan	PUC of Ohio Case No. 16-1852-EL-SSO	Environmental Law & Policy Center
Jun. 2, 2017	Vectren Energy TDSIC Plan	Indiana URC Cause No. 44910	Citizens Action Coalition & Valley Watch
Jul. 28, 2017	Vectren Energy 2016-2017 Energy Efficiency Plan	Indiana URC Cause No. 44645	Citizens Action Coalition
Jul. 28, 2017	Vectren Energy 2018-2020 Energy Efficiency Plan	Indiana URC Cause No. 44927	Citizens Action Coalition
Aug. 11, 2017	Dominion Virginia Electric Power 2017 IRP	VA SCC Case # PUR-2017-00051	Environmental Respondents
Aug. 18, 2017	Appalachian Power Company 2017 IRP	VA SCC Case # PUR-2017-00045	Environmental Respondents
Aug. 25, 2017	Niagara Mohawk Power Co. d/b/a National Grid Rate Case	NY PSC Case # 17-E-0238, 17-G-0239	Pace Energy and Climate Center
Sep. 15, 2017	Niagara Mohawk Power Co. d/b/a National Grid Rate Case	NY PSC Case # 17-E-0238, 17-G-0239	Pace Energy and Climate Center
Oct. 20, 2017	Missouri PSC Working Case to Explore Emerging Issues in Utility Regulation	MO PSC File No. EW-2017-0245	Renew Missouri
Nov. 21, 2017	Central Hudson Gas & Electric Co. Electric and Gas Rates Cases	NY PSC Case # 17-E-0459, -0460	Pace Energy and Climate Center

Jan. 16, 2018	Great Plains Energy, Inc. Merger with Westar Energy, Inc.	Missouri PSC Case # EM-2018-0012	Renew Missouri Advocates
Jan. 19, 2018	U.S. House of Representatives, Energy and Commerce Committee	Hearing on "The PURPA Modernization Act of 2017," H.R. 4476	Rábago Energy LLC
Jan. 29, 2018	Joint Petition of Electric Distribution Companies for Approval of a Model SMART Tariff	Mass. D.P.U. Case No. 17-140	Boston Community Capital Solar Energy Advantage Inc. (Jointly authored with Sheryl Musgrove)
Feb. 21, 2018	Joint Petition of Electric Distribution Companies for Approval of a Model SMART Tariff	Mass. D.P.U. Case No. 17-140 - Surrebuttal	Boston Community Capital Solar Energy Advantage Inc. (Jointly authored with Sheryl Musgrove)
Apr. 6, 2018	Narragansett Electric Co., d/b/a National Grid Rate Case Filing	RI PUC Docket No. 4770	New Energy Rhode Island ("NERI")
Apr. 26, 2018	U.S. EPA Proposed Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Stories: Electric Utility Generating Units, 82 Fed. Reg. 48,035 (Oct. 16, 2017) – "Clean Power Plan"	U.S. EPA Docket No. EPA-HQ-OAR-2016-0592	Karl R. Rábago
Apr. 25, 2018	Narragansett Electric Co., d/b/a National Grid Power Sector Transformation Plan	Rhode Island PUC Docket No. 4780	New Energy Rhode Island ("NERI")

Testimony of Karl R. Rábago

Case Nos. 18-E-0067 & 18-G-0068

Exhibit __ (KRR-3)

Joint Principles on Residential Fixed Charges in New York

Joint Principles on Residential Fixed Charges in New York

Endorsed by:

Acadia Center
All Our Energy
Alliance for a Green Economy
Alliance for Clean Energy New York
The Alliance for Solar Choice
Association for Energy Affordability
Binghamton Regional Sustainability Coalition
Campaign for Renewable Energy
Chhaya Community Development Corporation
Citizen Action of New York
Citizens' Environmental Coalition
Citizens for Local Power
Dryden Resource Awareness Coalition
Environment America
Environment New York
Environmental Entrepreneurs (E2) New York Metro Chapter
Fossil Free Tompkins
Greater Syracuse Tenants Network
Greening USA
Lime
Mission:data
Mothers Out Front - New York
National Consumer Law Center (on behalf of its low-income clients)
Natural Resources Defense Council
Nobody Leaves Mid-Hudson
New York Public Interest Research Group
New York Solar Energy Industries Association
Pace Energy and Climate Center
Partnership for the Public Good
PEACE, Inc.
Public Citizen
Public Utility Law Project of N.Y.
PUSH Buffalo
RUPCO
Sane Energy Project
Sealed
Sierra Club
Solar Energy Industries Association
Sullivan Alliance for Sustainable Development
Syracuse Peace Council
Syracuse United Neighbors
U.S. Public Interest Research Group
Vote Solar
WE ACT for Environmental Justice
WNY Peace Center

New York's energy system is undergoing a fundamental transition as new technologies and changing costs upend the historic model of supplying energy to consumers. Customer-sited generation, energy efficiency, and smart energy management are enabling many consumers to reduce their costs as the state moves toward a clean energy future with ambitious reforms as part of its Reforming the Energy Vision initiative, or REV. However, the current high residential fixed charges[1] in New York, which are fees that every customer pays regardless of the amount of electricity used, make this future more difficult to reach.

High fixed charges are regressive and contrary to the realities of a modern power grid and the public interest. First, they undermine incentives to save energy, install distributed generation, or engage in other behaviors that deliver value to the system. Second, because low-income customers tend to use less energy, higher fixed charges shift costs from bigger energy users to more vulnerable populations, exacerbating the

[1] Also known as customer charges or basic service charges.

regressivity that already exists in home energy burdens.[2] Overall, these charges run contrary to and would frustrate achievement of many of the initiatives and reforms envisioned by REV, including, facilitating greater reliance upon energy efficiency and clean distributed energy, ensuring affordable, reliable home energy service for all residential utility customers, and enabling customer control of energy bills.

New York has very high fixed customer charges compared to other states. For example, National Grid has a residential fixed charge of $17 in New York, but only $5 in Rhode Island and $5.50 in Massachusetts. Central Hudson has even higher fixed charges at $24, which it is seeking to increase to $25, as well as an additional tiered "service size charge" for many customers. Acadia Center found that current average residential customer charges for major investor-owned utilities are higher in New York than all of its neighboring states.[3] New York's fixed charges are even higher than Wisconsin, a state that has been widely criticized for approving large fixed charge increases since 2014. While high fixed charges have been the norm in New York for many years, the Public Service Commission should be commended for denying fixed charge increases since 2015. It should now join states such as Connecticut which are taking the next step and begin reducing them.

The endorsing organizations believe that, based on national experience, a reasonable definition for residential fixed charges[4] typically results in $5 to $10 a month per customer.[5] In the current National Grid rate case, testimony has shown that residential customer charges of $17 per month are not justified and that a reasonable range would be between $5.57 and $8.30 per month. A major reduction in residential fixed charges in the current National Grid and Central Hudson rate cases would benefit a majority of residential customers by lowering their bills, and would particularly help low-usage customers, which significantly includes low-income households, seniors, the disabled, and conservation-minded customers. Lower fixed charges would also improve incentives for energy efficiency and distributed energy resources, and is necessary to achieve the energy future envisioned by REV and to meet the state's ambitious greenhouse gas reduction commitments.

---

[2] See generally https://www.nclc.org/energy-utilities-communications/utility-rate-design.html and, for a New York analysis, see http://www.nclc.org/images/pdf/energy_utility_telecom/rate_design/NY-FINAL2.pdf.
[3] See http://acadiacenter.org/document/residential-fixed-charges-in-new-york/.
[4] The definition should be limited to the incremental cost of connecting a customer, such as simple metering, billing, service line, and certain elements of customer service.
[5] Lazar, J. and Gonzalez, W. (2015), *Smart Rate Design for a Smart Future*, p. 36. Montpelier, VT: Regulatory Assistance Project. Available at: http://www.raponline.org/document/download/id/7680.

Testimony of Karl R. Rábago

Case Nos. 18-E-0067 & 18-G-0068

Exhibit __ (KRR-4)

Company Response to DPS 1-48

Company Name: Orange and Rockland Utilities Inc
Case Description: Orange and Rockland Utilities, Inc. Electric & Gas Rate Case
Case: 18-E-0XXX; 18-G-0XXX

Response to DPS Interrogatories – Set DPS-1
Date of Response: 1/25/2018
Responding Witness: Accounting Panel

Question No. : 48

Dues, Industry Associations.

a) For each industry association/organization, provide by account for the test period, dues for which the company is requesting recovery in its revenue requirement. For each, describe the organization's purpose and provide any descriptive material the company has concerning the organization's financial statements, annual budget, and activities.
b) For each organization that engages in lobbying or advocacy activities, attempts to influence public opinion, uses institutional or image building advertising, state the company's best estimate of the portion of the organization's expenses devoted to such activities. Explain and show how such estimates were derived.

Response

a) The Company is a member of Edison Electric Institute (EEI), North American Transmission Forum (NATF), and the American Gas Association (AGA).

   - EEI is an association of U.S. shareholder-owned electric companies whose members provide electricity for about 220 million Americans, and operate in all 50 states and the District of Columbia.
   - NATF's members include investor-owned, state-authorized, municipal, cooperative, U.S. federal, and Canadian provincial utilities.
   - AGA is an association that represents more than 200 local energy companies that deliver natural gas throughout the United States.

   During the Test Year, O&R paid $276,881 in membership dues to these entities (EEI -- $117,285, NATF -- $14,499, and AGA -- $145,097).

   The Company objects to providing further information on the grounds that the interrogatory seeks information that is irrelevant or not reasonably calculated to lead to the discovery of admissible evidence, is overbroad, unduly burdensome, harassing, expensive, oppressive or exceeds the scope of this proceeding.

b) During the Test Year, O&R's allocated share of lobbying fees identified on invoices from EEI and AGA amounted to $28,991. The Company recorded this cost "below the line" to FERC account 4264. In these cases, the Company is not seeking recovery of these lobbying costs.

Testimony of Karl R. Rábago

Case Nos. 18-E-0067 & 18-G-0068

Exhibit __ (KRR-5)

Executive Summary
Energy and Policy Institute, Paying for Utility Politics

Paying for Utility Politics

How utility ratepayers are forced to fund the Edison Electric Institute and other political organizations

May 2017

Paying for Utility Politics

How utility ratepayers are forced to fund the Edison Electric Institute and other political organizations

May 2017

The Energy and Policy Institute is a watchdog organization working to expose attacks on renewable energy and counter misinformation by fossil fuel and utility interests. It does not receive funding from for-profit corporations or grants from government agencies.

Authors

David Anderson
Matt Kasper
David Pomerantz

Table of Contents

Executive Summary

This report explores how regulated utility companies are including their Edison Electric Institute (EEI) annual payments, along with payments to other trade associations, in their operating expenses. The widespread practice forces ratepayers to pay for political and public relations activities with which they may not agree, and from which they do not benefit. It also has the effect of ratepayers subsidizing the political activities of EEI and other trade associations. Utility commissions have a responsibility to protect ratepayers from paying for industry groups and their political work along with public relations activities. But utilities have become adroit at using EEI, and other organizations, to effectively and quietly influence policy while sheltering their shareholders from the bulk of the associated costs. Almost no other political organizations have the luxury of subsidization enjoyed by EEI and other representatives of the regulated utility industry.

EEI's Revenue, Expenses, Actions - and Why Ratepayers Shouldn't Be Paying for it

EEI is an inherently political organization, and a powerful one. At $90 million in 2015, EEI's budget is the highest it has been in over a decade, an increase which the nation's electric ratepayers have funded. President Thomas Kuhn made $4.1 million in 2015 and is one of the highest paid industry association executives. The association's budget is primarily spent on staff, many of whom spend a considerable amount of their time working to help member utilities achieve desired policy and regulatory outcomes; not all of these activities are considered lobbying under the definition EEI uses from the Internal Revenue Code, but their actions are still political in nature.

In EEI's own words, in 2015 it "rebalanced the public conversation through extensive earned media efforts at the national and state levels" to address fixed-cost recovery, "educated regulators and consumers advocates on key industry issues, including capital expenditures that highlight the record-high investments in the grid"; and spent time to make sure that the Federal Energy Regulatory Commission (FERC) "provides compensatory returns on equity that recognize the risks associated with transmission construction."[1]

These activities are intended to benefit utilities' bottom line, and it is likely that none would count in EEI's definition of lobbying, which many utility commissions use to determine which fees should not be borne by ratepayers.

1 EEI 2015 Results In Review available at http://big.assets.huffingtonpost.com/eeibooklet.pdf; EEI's 2016 Wall Street Briefing available at http://web.archive.org/web/20160715202904/http://www.eei.org/resourcesandmedia/industrydataanalysis/industryfinancialanalysis/Documents/Wall_Street_Briefing.pdf.

Utility Companies Charging Ratepayers for EEI Dues

Electric utility ratepayers are paying for EEI's activities when an investor-owned utility includes payments to EEI (and other industry trade associations) as part of the company's cost of service in rate requests. Public utility commissioners generally approve a substantial portion of these dues with only minimal oversight, with some notable exceptions. Utility ratepayers are usually unaware that a portion of their electricity bill is going to subsidize EEI. In Florida Power & Light's 2016 rate request, for example, the utility revealed that its ratepayers are on tap to pay more than $9.5 million in EEI dues from 2015 to 2018.[2] These EEI dues went unchallenged during the Florida Public Service Commission's consideration of the utility's request to raise rates on ratepayers. A table listing examples of more than two dozen companies recovering their EEI dues from ratepayers is included in an appendix of this report.

Other Political Organizations Beyond EEI Receive Utility Ratepayers Money

EEI is not the only political organization that receives money from utility ratepayers. The American Gas Association, Nuclear Energy Institute, and the U.S. Chamber of Commerce, for example, are all groups that are often included in rate requests so that ratepayers pay for the utility's annual membership fees. Given how these organizations promote fracking and natural gas infrastructure,[3] propose bailouts for nuclear power plants,[4] and spread misinformation regarding the science of climate change,[5] they are also all political in nature. An examination of Wisconsin Public Service Corporation classification of industry association dues, for example, reveals that the utility proposed that its ratepayers help pay for not only the American Gas Association and the U.S. Chamber of Commerce membership fees, but also both the Republican and Democratic Governors Associations, and the Republican State Leadership Committee.[6]

---

[2] Florida Power & Light Industry Association Dues (MFR C-15 draft) available at https://drive.google.com/file/d/0B-0ZwtRThY3LVjRjSVVPTjZ6N28/view

[3] American Gas Association, "Responsible Natural Gas Development" available at https://www.aga.org/environment/responsible-natural-gas-development

[4] Nuclear Energy Institute, "Incentives for Energy Production" available at https://www.nei.org/Issues-Policy/Economics/Incentives-for-Energy-Production

[5] Union of Concerned Scientists, "Who Stands with the U.S. Chamber of Commerce on Climate Change? New Data Says Few (Still)" available at http://blog.ucsusa.org/gretchen-goldman/who-stands-with-the-u-s-chamber-of-commerce-on-climate-change-new-data-says-few-still-788

[6] Wisconsin Public Service Corporation Governmental Relations/Memberships (Docket 6690-UR-124) available at https://www.documentcloud.org/documents/3227546-Wisconsin-Public-Service-Corporation-Dues.html

Often these payments are tucked in among industry association dues payments to less political institutions that have been recognized as providing beneficial services, such as the Electric Power Research Institute or North American Electric Reliability Corporation.

Utility Companies Push Back Against Oversight of Their EEI Dues

When third-party organizations or public service commission staffs have attempted to protect ratepayers from funding political organizations in recent years, their attempts have met with fierce resistance from the utility companies. Nevertheless, some auditors at public utility commissions and some consumer advocates either have successfully asked that the burden of proof be placed on a utility company to show how EEI dues benefit ratepayers, or have asked for more financial information regarding EEI's spending in attempts to show commissioners that EEI's spending is intended to benefit shareholders.

Waning Regulatory Oversight of Ratepayers' Paying for Political Memberships

For a time between the 1980's and early 2000's, the National Association of Regulatory Utility Commissioners (NARUC) investigated EEI's misuse of utility customer money for lobbying and public relations. This led to NARUC conducting annual audits of EEI's financial records.[7] The result was a system of compromise where, based on NARUC's annual audits, regulators ruled that utilities could collect a significantly smaller portion of their EEI dues from ratepayers. For example, the Florida Public Service Commission increased the lobbying portion of EEI dues that utilities were not allowed to recover from ratepayers from 2% in 1982 to roughly 33% in 1984.[8] The commission also barred utilities from charging ratepayers for payments to EEI's "Media Communications Program."

Over a decade ago, the NARUC audits stopped and consumer advocates have since had difficulty in fully understanding how EEI spends ratepayer money. In 2013, however, The Utility Reform Network had success getting 43.3% of the EEI dues paid by Pacific Gas & Electric' shareholders during that utility's rate request and not ratepayers as the utility originally requested.[9] Successful oversight of EEI dues has faded away in other states. The independent review of industry association dues that was once provided by NARUC has

---

[7] New York Times, "Utility Group Criticized on Funds for Lobbying" available at http://www.nytimes.com/1984/07/21/business/utility-group-criticized-on-funds-for-lobbying.html

[8] Florida Public Service Commission Order (No. 10306, 1981) available at https://www.documentcloud.org/documents/3141815-Florida-Public-Service-Orders-on-Industry.html#document/p27/a322247; (No. 13537, 1984) available at https://www.documentcloud.org/documents/3141815-Florida-Public-Service-Orders-on-Industry.html#document/p158/a327132

[9] Proposed Decision before the Public Utilities Commission of the State of California (Docket 14-08-032) available at https://www.documentcloud.org/documents/3239245-COMPENSATION-to-TURN-for-SUBSTANTIAL.html#document/p8/a331970

been replaced by an unreliable system of self-reporting by EEI and its utility members, both of whom have an obvious self-interest in maximizing the amount of their dues that will be paid by ratepayers.

Recommendations

Precedent exists for public officials to determine the percentage of EEI's work that is benefiting ratepayers or utility company shareholders. The following recommendations would help protect ratepayers from funding utilities' political association memberships:

1. Public utility commissioners and their staff should place the burden of proof on utilities to demonstrate the exact percentage of customer money provided to industry groups and other political organizations, including EEI, that benefits their own ratepayers. This is not a recommendation for commissioners to indiscriminately disallow all EEI dues, as certain EEI programs such as storm response coordination may indeed benefit ratepayers. However, utilities should have to disclose the exact benefits that their political industry associations confer to ratepayers for each of their activities in detail. It is insufficient for utilities to only file an annual invoice from an organization that notes the self-determined lobbying percentage as guidance for commissions to determine the appropriate amount charged to ratepayers.
2. Consumer advocates and other parties whose mission is to protect ratepayers, such as attorneys general, should file for discovery in order to receive additional documents to have a better understanding of how a utility company works with their trade associations, and whether that work benefits ratepayers.
3. The National Association of Regulatory Utility Commissioners (NARUC) should revive the Committee on Utility Association Oversight and audit EEI, NEI, and AGA to determine the percentage of their operations which are political in nature and therefore ought not to be funded by ratepayers.
4. NARUC should compile a survey that shows the percentages of dues utility ratepayers are paying to industry organizations and political party focused groups; particularly (though not limited to) EEI; American Gas Association (AGA); Nuclear Energy Institute (NEI); U.S. Chamber of Commerce; Democratic Governors Association; and Republican Governors Association. Once completed and then published, this manual can help utility accounting staff across the country manage the challenges associated with determining industry association dues during rate requests. This report reveals only examples and is not exhaustive.