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April 6, 2018

By Email (Luly.Massaro@puc.ri.gov) and First-Class Mail
Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02886

Re: National Grid's Distribution Rate Filing
Docket No.: 4770
Our File: CM - 18535

Dear Ms. Massaro:

Enclosed please find the Direct Testimony and Exhibits of Gregory W. Tillman on Behalf of Wal-Mart Stores East, LP and Sam's East, Inc., for filing in the above-referenced matter. I have also enclosed the required ten copies.

Thank you for your attention to this filing. If you have any questions, please do not hesitate to contact me.

Very truly yours,

Melissa Horne

Melissa M. Horne

MMH/amd
Enclosures
cc: Docket 4770 Service List (by email)
Leo Wold, Esquire, Dept. of Attorney General

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STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

IN RE: THE NARRAGANSETT ELECTRIC COMPANY d/b/a NATIONAL GRID ELECTRIC AND GAS DISTRIBUTION RATE FILING

DOCKET NO. 4770

DIRECT TESTIMONY AND EXHIBITS OF GREGORY W. TILLMAN

ON BEHALF OF

WAL-MART STORES EAST, LP AND SAM'S EAST, INC.

Dated: April 6, 2018

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Exhibits

Exhibit GWT-1 –	Witness Qualifications Statement
Exhibit GWT-2 –	Reported Authorized Returns on Equity, Electric Utility Rate Cases Completed, 2015 to Present
Exhibit GWT-3 –	Calculation of Revenue Requirement Impact of National Grid's Proposed ROE of 10.1 percent and 9.56 percent
Exhibit GWT-4 –	Redetermination of Billing Demand Units and Walmart Proposed Rate Design

Introduction

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.

A. My name is Gregory W. Tillman. My business address is 2001 SE 10th St., Bentonville, AR 72716-5530. I am employed by Walmart, Inc. as Senior Manager, Energy Regulatory Analysis.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS DOCKET?

A. I am testifying on behalf of Wal-Mart Stores East, LP and Sam's East, Inc. (collectively, "Walmart").

Q. PLEASE DESCRIBE YOUR EDUCATION AND EXPERIENCE.

A. I earned a Bachelor of Science in Electrical Engineering from the University of Tulsa in 1987. At the time I joined Walmart in 2015, I had over 23 years of experience in the regulated and deregulated energy industry including roles in regulatory, pricing, billing, and metering information. In 1990, after serving on active duty as a Signal Officer in the United States Army, I joined Public Service Company of Oklahoma ("PSO"). From 1990 through 1997, I was employed in various positions at PSO, including in the Information Services, Business Planning, Rates and Regulatory, and Ventures departments. During my tenure with the Rates and Regulatory Department, I served as the Supervisor of Power Billing and Data Collection. In this position, I managed the billing for large industrial and commercial customers and led the implementation of PSO's real-time pricing program. I also managed the implementation of real-time pricing for the three remaining utilities in the Central and South West Corporation – Southwestern Electric Power Company, Central Power and Light, and West Texas Utilities. In 1997, I joined the Retail Energy Department of the Williams Energy Company as the Manager of Systems for the retail gas and electric data and billing. I also managed the customer billing function at Williams Thermogas, as well as the billing and accounting systems support functions at Williams Communications. From 2000 to 2002, I served as the Vice President of Energy Solutions for Automated Energy. In 2008, following several assignments as a consultant and project manager in various industries, I joined Oklahoma Gas & Electric Company ("OG&E") as a Senior Pricing Analyst. I was promoted to Manager of Pricing in January 2010 and became the Product Development Pricing Leader in 2013. While at OG&E, I was instrumental in developing and managing OG&E's pricing strategy and products, including the design and implementation of OG&E's SmartHours™ rate. I have been in my current position with Walmart since November 2015. My Witness Qualification Statement is included herein as Exhibit GWT-1.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE THE RHODE ISLAND PUBLIC UTILITIES COMMISSION ("RIPUC" OR "THE COMMISSION")?

A. No.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY BEFORE OTHER STATE REGULATORY COMMISSIONS?

A. Yes. I have previously testified in twenty-one (21) proceedings before the Arizona Corporation Commission, the Arkansas Public Service Commission, the Connecticut Public Utility Regulatory Authority, the Indiana Utility Regulatory Commission, the Iowa Utilities Board, the Kentucky Public Service Commission, the Michigan Public Service Commission, the Oklahoma Corporation Commission, the South Carolina Public Service Commission, the Public Utility Commission of Texas, and the Wisconsin Public Service Commission. My testimony addressed the topics of revenue requirement, rate design, revenue allocation, pricing, customer impacts, tariffs, and terms and conditions of service. *See* Exhibit GWT-1.

Q. ARE YOU SPONSORING ANY EXHIBITS WITH YOUR TESTIMONY?

A. Yes. I am sponsoring the exhibits listed in the Table of Contents.

Q. PLEASE BRIEFLY DESCRIBE WALMART'S OPERATIONS IN RHODE ISLAND.

A. As shown on Walmart's website, there are 9 retail units in Rhode Island employing 2,458 associates. During fiscal year ending January 2017, Walmart spent $674 million with 122 Rhode Island suppliers, supporting an additional 11,982 jobs.[1]

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[1] https://corporate.walmart.com/our-story/our-locations#/united-states/rhode-island

Q. PLEASE BRIEFLY DESCRIBE WALMART'S OPERATIONS WITHIN THE SERVICE TERRITORY OF THE NARRAGANSETT ELECTRIC COMPANY D/B/A NATIONAL GRID ("NATIONAL GRID" OR "THE COMPANY").

Walmart has 8 retail units that take electric and gas service from National Grid in Rhode Island. Primarily, Walmart takes service on the Large Demand Rate G-32 ("Rate G-32") rate schedule.

Purpose of Testimony and Summary of Recommendations

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to respond to the November 27, 2017 rate case filing of the Company, responding specifically to the revenue requirement and rate design issues within the testimony and exhibits presented by the Company's witnesses. I will also address general issues surrounding the Company's supplemental filing to address impacts from the federal Tax Cuts and Jobs Act ("TCJA").

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS TO THE COMMISSION.

A. My recommendations to the Commission are as follows:

1) The Commission should thoroughly and carefully consider the financial impact of a rate increase on customers, paying particular attention to the Company's requested revenue requirement and ROE. Such consideration ensures that any increase in the Company's rates reflects the minimum amount necessary to compensate the Company for adequate and reliable service, while also providing the Company an opportunity to earn a reasonable return.

2) The Commission should closely examine the Company's proposed revenue requirement increase and the associated proposed increase in ROE, especially when viewed in light of 1) the customer impact of the resulting revenue requirement increase; and, 2) recent commission authorized ROEs nationwide.

3) Walmart is concerned with the classes included in the Company's proposed Cost of Service Study ("COSS"). Notwithstanding the classes included, Walmart does not take a position on the Company's proposed COSS; however, to the extent that alternative cost of service models or modifications to the Company's model are proposed by other parties, Walmart reserves the right to address any such proposals.

4) At the proposed revenue requirement and notwithstanding the Company's proposal to combine the 5,000 kW and 200 kW classes, Walmart does not oppose the Company's proposed revenue allocation methodology.

5) If the Commission ultimately approves a revenue requirement less than that proposed by the Company, the Commission should require that the resulting revenue allocation maintain the Company's proposed movement to cost for the major customer classes.

6) The Commission should order the Company to update its proposed rate design to reflect the correct billing demand units and establish a base distribution rate structure for Rate G-32 that consists of only customer charges and demand

charges. These updates will ensure that Rate G-32 collects the proper revenue, sends more accurate price signals, and reduces intra-class subsidies.

7) The Commission should reject the method proposed by the Company to combine the revenue requirement of the Rate G-32 and G-62 classes for the purpose of designing rates for the combined class and instead order National Grid to perform the COSS using a single consolidated class.

8) Walmart does not take a position on the revised revenue requirement based on the impacts of the TCJA at this time. Walmart reserves the right to address the revised revenue requirements during the course of this proceeding.

Q. DOES THE FACT THAT YOU MAY NOT ADDRESS AN ISSUE OR POSITION ADVOCATED BY THE COMPANY INDICATE WALMART'S SUPPORT?

A. No. The fact that an issue is not addressed herein or in related filings should not be construed as an endorsement of any filed position.

National Grid Proposed Revenue Increase

Q. WHAT IS YOUR UNDERSTANDING OF THE COMPANY'S PROPOSED REVENUE REQUIREMENT INCREASE?

A. My understanding is that National Grid originally requested an electric revenue increase of $41.3 million. *See* Testimony of Melissa A. Little, Book 8 of 17, page 15, line 15. The increase is based on a test year ending June 2017. *Id.* page 5, line 8. The proposed revenue increase reflects an increase to the Company's electric revenue requirement of approximately 14.8%.[1]

Q. IS IT YOUR UNDERSTANDING THAT THE COMPANY PROVIDED A SUPPLEMENTAL FILING WHICH INCLUDED MODIFICATIONS TO ITS ORIGINAL PROPOSALS?

A. Yes, it is my understanding that National Grid provided an update to its original filing on March 2, 2018. Walmart received the update on March 22, 2018. The update included revised revenue requirements based on the impacts of the TCJA, signed into law by the President on December 22, 2017.

Q. HAVE YOU REVIEWED THE UPDATED REVENUE REQUIREMENT INCREASE?

A. Yes, I have performed a cursory review of the revenue requirement increase as updated to reflect the impacts of the TCJA.

Q. WHAT IS THE COMPANY'S UPDATED REVENUE REQUIREMENT INCREASE?

A. According to the Company's supplemental filing, the originally proposed increase was adjusted downward by $13.9 million, resulting in an increase of $27.4 million when compared to current rates. *See* Schedule MAL-1-ELEC (REV-1), Revenue Requirement, p. 1.

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[1] $41.3 million / $279.2 million = 14.8%. *See* Little, page 16.

Q. ARE RATE REDUCTION IMPACTS OF THE TCJA RELEVANT TO THE COMMISSION'S CONSIDERATION OF THE MERITS OF NATIONAL GRID'S PROPOSED DISTRIBUTION RATE INCREASE?

A. No. While reductions in revenue requirement resulting from the TCJA are beneficial to customers and result in reduced revenue requirement, they are not relevant to the Commission's consideration of the merits of the Company's proposed distribution rate increase. Tax liabilities are essentially pass-through items and the reduced liabilities should accrue to the benefit of customers regardless of the impact resulting from other issues in this docket. At issue in this docket is the approval of fair, just, and reasonable rates related to National Grid's provision of reliable electric service to its customers. Only those changes in the non-tax based portion of base rates reflect the ongoing cost of providing distribution service and should not be deemed any more or less reasonable due to contemporaneous changes in the federal income tax rates applicable to the Company's earnings.

Q. TAKING THE IMPACT OF THE TCJA INTO ACCOUNT, DOES THE $27.4 MILLION REVENUE REQUIREMENT INCREASE REFLECT THE COMPANY'S PROPOSED INCREASE TO DISTRIBUTION BASE RATES?

A. No. The proposed increase of $27.4 million reflects the increase in distribution rates conflated with the impact of the TCJA. The stated increase of $27.4 million is the difference between current rate revenue under the previous tax rates and the proposed rate revenue under the new tax rates. To determine the distribution rate increase exclusive of the impact of the TCJA, one must determine the increase using the current rate revenue restated under the new tax law compared to the proposed rate revenue under the same tax situation.

Q. HAVE YOU DETERMINED THE INCREASE IN BASE DISTRIBUTION RATES REQUESTED BY THE COMPANY EXCLUSIVE OF THE IMPACT OF THE TCJA?

A. No. I have not determined the increase in base distribution rates exclusive of the impact of the TCJA. While not an exact determination, one might expect that the decrease in the current rate revenue due to the TCJA would closely approximate the decrease in the proposed rate revenue due to the TCJA of $13.9 million presented in the Company's supplemental filing. Using the TCJA impact on the proposed rates as an estimate for its impact on the current rates, the approximated distribution rate increase matches the originally requested $41.3 million. My testimony separately addresses the original request of $41.3 million at the pre-TCJA tax rate and separately addresses the Company's revised filing to address the impact of the TCJA.

Q. SHOULD THE COMMISSION GENERALLY CONSIDER THE IMPACT OF THE PROPOSED DISTRIBUTION RATE INCREASE OF $41.3 MILLION ON CUSTOMERS IN SETTING THE REVENUE REQUIREMENT AND ROE FOR THE COMPANY?

A. Yes. The Commission should balance the interests of the Company with the interests of its customers. To that end, the Commission should thoroughly and carefully consider the financial impact of a rate increase on customers, paying particular attention to the Company's requested revenue requirement and ROE.

Such consideration ensures that any increase in the Company's rates reflects the minimum amount necessary to compensate the Company for adequate and reliable service, while also providing the Company an opportunity to earn a reasonable return.

Return on Equity

Q. WHAT IS THE COMPANY'S PROPOSED ROE IN THIS DOCKET?

A. National Grid is proposing an ROE of 10.10 percent based on a range of 10.00 percent to 10.75 percent. *See* Testimony of Robert B. Hevert, p. 6, line 18 - p. 7, line 7. The requested ROE at the Company's proposed capital structure results in a proposed weighted average cost of capital of 7.43 percent. *See* Schedule MAL-1-ELEC, Revenue Requirement, Page 4. The proposed ROE is 60 basis points above the Company's most recently approved ROE of 9.50 percent. *See* RIPUC Docket No. 4373, Final Report and Order No. 21011 approving revised rates, charges and tariffs effective February 1, 2013, Written order issued on April 11, 2013, p. 116.

Q. ARE YOU CONCERNED THAT THE COMPANY'S PROPOSED ROE OF 10.1 PERCENT IS EXCESSIVE?

A. Yes. I am concerned that the Company's proposed ROE is excessive, especially in light of: (1) the customer impact of the resulting revenue requirement increase as discussed above; and, (2) recent rate case ROEs approved by this Commission and commissions nationwide.

National Utility Industry ROE Trends

Q. HOW DOES THE COMPANY'S PROPOSED ROE COMPARE WITH ROEs APPROVED BY OTHER UTILITY REGULATORY COMMISSIONS?

A. The ROE proposed by the Company is higher than the average ROE approved by other utility regulatory commissions in 2015, 2016, 2017, and so far in 2018. *See* Exhibit GWT-2.

Q. WHAT IS YOUR UNDERSTANDING OF THE ROE AWARDED IN RECENT RATE CASES?

A. According to data from SNL Financial[1], a financial news and reporting company, there have been 103 reported electric utility rate case ROEs authorized by state regulatory commissions for investor-owned electric utilities in 2015, 2016, 2017, and thus far in 2018. The average of these reported ROEs is 9.62 percent. The range of reported authorized ROEs for the period is 8.40 percent to 11.95 percent, and the median authorized ROE is 9.60 percent. *Id.*

Q. IS THE AVERAGE REPORTED ROE EVEN LOWER FOR DISTRIBUTION ONLY UTILITIES OR IN CASES WHERE ONLY DISTRIBUTION RATES WERE AT ISSUE?

A. Yes. The average reported ROE for distribution only utilities or for rate cases that only dealt with distribution rates was 9.33 percent. *Id.* This is 77 basis points lower than the Company's proposed ROE. Excluding the authorized ROEs for Illinois based

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[1] Regulatory Research Associates is a part of SNL Financial.

distribution-only utilities, which are set by statutory formula, the average ROE awarded is 13 basis points higher at 9.46 percent. *Id.*

Q. WHAT IS THE TREND IN AUTHORIZED ROES FOR DISTRIBUTION ONLY UTILITIES FROM 2015 TO PRESENT?

A. The average authorized ROE for distribution only utilities in 2015 was 9.17 percent, in 2016 it was 9.31 percent, in 2017 it was 9.43, and thus far in 2018 it is 9.00 percent (this includes only one decision). *Id.* Excluding the ROEs for Illinois based utilities, which are set by statutory formula, results in an average ROEs in these years of 9.19, 9.45, 9.61, and 9.00 percent, respectively. *Id.*

Q. WHAT IS THE REVENUE REQUIREMENT IMPACT IF THE COMMISSION WERE TO AWARD AN ROE OF 9.56 PERCENT, THE AVERAGE ROE AWARDED FOR NON-ILLINOIS BASED DISTRIBUTION ONLY UTILITIES IN 2017 AND THUS FAR IN 2018?

A. An authorized ROE of 9.56 percent instead of the requested 10.1 percent would result in a reduction to the requested increase, inclusive of taxes, of about $3.2 million. This represents about 7.76 percent of the Company's requested increase. *See* Exhibit GWT-3.

Q. IS WALMART RECOMMENDING THAT THE COMMISSION BE BOUND BY ROES AUTHORIZED BY OTHER STATE REGULATORY AGENCIES?

A. No. Decisions of other state regulatory commissions are not binding on the Commission. Additionally, each commission considers the specific circumstances in each case in its determination of the proper ROE. Walmart is providing this information to illustrate a national customer perspective on industry trends in authorized ROE. In addition to using recent authorized ROEs as a general gauge of reasonableness for the various cost of equity analyses presented in this case, the Commission should consider how its authorized ROE impacts existing and prospective customers relative to other jurisdictions.

Q. WHAT IS WALMART'S RECOMMENDATION TO RIPUC REGARDING THE COMPANY'S REQUESTED ROE?

A. The Commission should closely examine the Company's proposed revenue requirement increase and the associated proposed increase in ROE, especially when viewed in light of 1) the customer impact of the resulting revenue requirement increase; and, 2) recent commission authorized ROEs nationwide.

Cost of Service

Q. WHAT IS WALMART'S POSITION ON SETTING RATES BASED ON THE COST OF SERVICE?

A. Walmart advocates that rates be set by regulatory agencies based on the utility's cost of service for each rate class. A regulatory policy that supports the fair-cost-apportionment objective of rate-making ensures that rates reflect cost causation, which sends proper price signals to customers and minimizes price distortions.

Q. HOW IS COST CAUSATION DETERMINED IN THE RATE-MAKING PROCESS?

A. In cost of service regulation, the Commission must determine the revenue requirement that the Company is authorized to recover based on prudent costs including a reasonable return on the investment required to provide service. The utility's COSS is an analytic tool commonly used to determine the total cost and equitable assignment of cost responsibility to customer classes. This is accomplished by identifying, functionalizing, classifying, and allocating the allowable costs to customer classes in the manner that customers cause those costs to be incurred.

Q. DOES WALMART TAKE A POSITION ON THE COMPANY'S PROPOSED COSS AT THIS TIME?

A. Walmart is concerned with, as I will discuss later in my testimony, the classes included in the Company's proposed COSS. Notwithstanding the classes included, Walmart does not take a position on the Company's proposed COSS; however, to the extent that alternative cost of service models or modifications to the Company's model are proposed by other parties, Walmart reserves the right to address any such proposals.

Revenue Allocation

Q. WHAT IS REVENUE ALLOCATION?

A. Revenue allocation is the assignment of the revenue responsibility to each customer class. A revenue allocation that assigns revenue to each class at the class' respective cost of service is said to be free of inter-class subsidies.

Q. ARE THERE INSTANCES IN WHICH THE COMMISSION WOULD ASSIGN DIFFERENT REVENUE TO INDIVIDUAL CLASSES THAN IS CALLED FOR WITHIN THE COSS, RESULTING IN INTER-CLASS SUBSIDIES?

A. Yes. At times, the regulator may find it necessary to approve a level of revenue requirement to a particular class which differs from the cost responsibility amount determined in the COSS. This is often driven by the need to ensure that customers are not seriously adversely impacted by major changes to the level of rates. Other reasons can include perceived differences in COSS results and reality, relative risks assigned to classes, social goals associated with the role of the prices in a particular jurisdiction, and response to the state of the economy within or external to the regulatory jurisdiction. The regulatory agency may exercise its discretion based on one or more of these concerns to adjust revenue allocation to support policy or advance the public interest. However, these adjustments often result in rates that are not cost-based and, as a result, not just, reasonable, and equitable.

Q. WHAT IS THE ULTIMATE GOAL WHEN ALLOCATING REVENUE?

A. To the extent possible, inter-class subsidies should be eliminated through a revenue allocation that reflects the cost of service. If this is not possible in the immediate case, the Commission should establish a clear path or set policy to achieve elimination of undesired subsidies, continually moving each class closer to their respective cost of service until undesired subsidies are eliminated and price signals, and ultimately system efficiency, are improved.

Q. WHAT IS YOUR UNDERSTANDING OF THE PROCESS USED TO ARRIVE AT THE COMPANY'S PROPOSED REVENUE ALLOCATION?

A. According to the testimony of Company witness Gorman, the revenue allocation was performed under two guiding principles: the first principle is to reflect, as closely as possible the COSS results; and the second is to mitigate any extreme rate impacts to rate classes or on individual customer subgroups. *See* Pre-filed Direct Testimony of Howard S. Gorman ("Gorman Direct"), p. 25, lines 8 - 11. These guiding principles were implemented through a series of actions including: 1) examination of the increases required to set each class at its cost of service; 2) limit any class increase to twice the system average; and, 3) prevent any class decrease and allocating the resulting surplus to the rate classes at their allocated revenue requirement. *Id.*, p.25, line 18 through p. 26, line 9.

Q. HOW DOES THE COMPANY REPRESENT THE ACCURACY OF THE PROPOSED CLASS REVENUES IN THEIR REFLECTION OF THE UNDERLYING COSTS OF EACH CLASS?

A. The Company represents this relationship in their cost of service results through the use of relative return index ("RRI"). An RRI greater than one means that the rate class is paying rates in excess of the costs incurred to serve that class, and an RRI less than one means that the rate class is paying rates less than the costs incurred to serve that class. As such, when rates are set such that a class does not have an RRI equal to one there are inter-class subsidies, as those rate classes with an RRI greater than one shoulder some of the revenue responsibility burden for the classes with an RRI less than one.

Q. WHAT IS THE RRI FOR EACH CLASS AT PRESENT RATES AND THE COMPANY'S PROPOSED REVENUE ALLOCATION?

A. The present and proposed RRI for each class is shown in Table 1.

Table 1: Present and Proposed Relative Return Index

	Current		Proposed	
CLASS	ROR (%)	RRI	ROR (%)	RORI
Residential	2.28	0.58	7.34	0.99
Small C&I	3.07	0.78	7.34	0.99
General C&I	5.91	1.50	7.35	0.99
200 kW Demand	8.13	2.07	7.38	0.99
5000 kW Demand	2.59	0.66	7.35	0.99
Lighting Rates	10.56	2.68	9.61	1.29
Propulsion	219.46	55.76	199.10	26.80
Total	3.94	1.0	7.43	1.0

Source: Schedule HSG-3, Results of Allocated Cost of Service Study and Revenue Allocation.

Q. DOES THE COMPANY'S PROPOSED REVENUE ALLOCATION MOVE THE MAJOR RATE CLASSES TO THEIR RESPECTIVE COSTS OF SERVICE AND THE REMAINING CLASSES TOWARD THEIR COSTS?

A. Yes, the major customer classes (Residential, Commercial, General Service C&I, 200 kW Demand, and 500 kW Demand Classes) are moved to their cost of service in the Company's proposed revenue allocation. The other classes, Lighting Rates and Propulsion, are moved toward their cost at a rate of 83% and 53% respectively. As such, the Company's proposed revenue allocation eliminates or substantially reduces the subsidy levels for all classes.

Q. DOES WALMART OPPOSE THE COMPANY'S REVENUE ALLOCATION METHODOLOGY?

A. At the proposed revenue requirement and notwithstanding the Company's proposal to combine the 5,000 kW and 200 kW classes, which I address later in my testimony, Walmart does not oppose the Company's proposed revenue allocation methodology.

Q. IF THE COMMISSION ULTIMATELY APPROVES A REDUCED REVENUE REQUIREMENT, WHAT IS WALMART'S RECOMMENDATION TO RIPUC?

A. If the Commission ultimately approves a revenue requirement less than that proposed by the Company, the Commission should require that the resulting revenue allocation maintain the Company's proposed movement to cost for the major customer classes.

Rate Design

Q. WHAT ARE THE COMPANY'S GUIDING PRINCIPLES FOR RATE DESIGN?

A. According to Company witness Gorman, the guiding principles for rate design are:

- Produce the target revenue for each rate class, as determined in the revenue allocation process;
- Promote efficient use of resources, ultimately reducing costs to customers;

- Produce costs for customers and revenue for the utility that are reasonably stable and predictable while reflecting the nature of the costs they recover; (i.e., recovering customer-related costs in the monthly fixed charge); and
- Mitigate extreme rate impacts on customer subgroups.

See Gorman Direct, p.27, lines 16 - 22.

Q. ARE THESE GUIDING PRINCIPLES REASONABLE TO USE IN RATE DESIGN?

A. Yes. Walmart generally advocates for rate design to be guided by principles similar to these.

Q. HAS THE COMPANY ADHERED TO THESE PRINCIPLES IN ITS PROPOSED RATE DESIGN FOR RATE G-32?

A. No, for two reasons. First, due to an error in the rate design for Rate G-32, National Grid's proposed rate design fails to produce the target revenue for Rate G-32. Second, the Company's rate design proposal for Rate G-32 also fails to reflect the nature of the underlying costs that the rates are intended to recover.

Q. DOES THE COMPANY'S RATE DESIGN CONTAIN AN ERROR?

A. Yes. The billing determinants used to calculate the base distribution demand charge are in error. The Company proposes to combine Rate G-32 and G-62 classes into a single class, however, the billing demands used in the rate design calculations are wrong.

Q. PLEASE EXPLAIN.

A. The error is a result of translating the demand billing determinants from the existing Rate G-62 structure, in which all demand is billed in the demand charge, to the new Rate G-32 structure, in which the first 200 kW of demand is included in the customer charge and not included in the demand charge.

Q. WHAT ARE THE DEMAND BILLING UNITS FROM THE COMPANY'S PRESENT RATE G-32 AND G-62?

A. The demand billing units for the present rate revenue for Rate G-32 are 2,869,062 kW, exclusive of Rate B-32 demand billing units of 126,944 kW. For Rate G-62 the billing demand is 1,018,663 kW. *See* HSG-2C, Proof of Revenue at Current Rates-Rate Year, p. 1, lines 12, 17, 18. The Rate G-32 demand billing units consist of only monthly demand values that exceed the first 200 kW, which are included in the customer charge within the rate. As an example, a G-32 customer which has a demand of 500 kW in a billing period will be billed for 300 kW through the demand charge.

Q. WHAT ARE THE DEMAND BILLING UNITS USED IN THE COMPANY'S RATE DESIGN?

A. For the rate design, the Company used total demand billing units of 3,639,374 kW. *See* Schedule HSG-4-D, Rate Design for Large Demand – Rate G-32 / G-62, Sheet 1, line 16. This is composed of B-32 Backup demand of 95,646 kW, B-32 Supplemental demand of 31,317 kW, and Rate G-32 billing demand units of 3,512,410 kW. The G-32 billing demand units used in the rate design were not calculated properly.

Q. WHAT IS YOUR UNDERSTANDING OF THE CALCULATION USED BY THE COMPANY TO DETERMINE THE BILLING DEMAND UNITS OF 3,512,410 KW USED IN RATE DESIGN?

A. Based on my review of the electronic spreadsheets, I understand that the calculation used by the Company to determine the billing units used for rate design intended to sum the billing demand units for existing Rate G-32 customers with the billing demand units for Rate G-62 customers, less the first 200 kW of each month's billing demand units ("Excluded kW"). The determination of Excluded kW was the product of (a) the number of customers currently on Rate G-62, (b) the demand units included in the customer charge per bill, and (c) the number of months per year. However, the Company used the incorrect value for the number of customers on Rate G-62. Instead of the number of customers, the Company used the number of bills.

Q. HOW MANY CUSTOMERS ARE CURRENTLY IN RATE G-62?

A. There are thirteen (13) customers in Rate G-62. *See* Schedule HSG-2A, External Allocator Values – Class Allocation, Sheet 1, Line 10.

Q. WHAT VALUE FOR NUMBER OF CUSTOMERS DID THE COMPANY USE AND WHAT WA THE RESULTING EXCLUDED KW IN THE CALCULATION?

A. The Company calculated the Excluded kW using the number of bills, or 156, for number of customers. *See* Excel Spreadsheet File NECo-17 Rev_Rates (Filed), sheet

"G-32," Column and Row N20 – P28. The calculation resulted in an Excluded kW of 375,315 kW. *Id.*

Q. WHAT IS THE VALUE OF EXCLUDED KW ASSOCIATED WITH THE CALCULATION USING THE CORRECTED NUMBER OF CUSTOMERS?

A. Using a value of thirteen (13) for number of customers and calculating the Excluded kW according its formula results in an Excluded kW of 31,200 kW. See Exhibit GWT-4, page 2.

Q. FOR THE PURPOSE OF CALCULATING RATES, WHAT IS THE BILLING DEMAND UNITS THAT THE COMPANY SHOULD HAVE USED IN ITS RATE DESIGN?

A. Based on the proper calculation, the value used in rate design should be 3,856,525 kW. Id., column d, line 15.

Q. HOW DOES THE COMPANY'S PROPOSED RATE STRUCTURE FAIL TO REFLECT THE NATURE OF THE UNDERLYING COSTS?

A. The proposed Rate G-32 is designed using a structure that collects revenue through a customer charge, demand charges, and an energy charge. These components are presented in Table 2.

Table 2: Proposed Rate Design.

Rate Component	Proposed Rate
Customer Charge	$1,100 / Month
Energy Charge	$0.00631 / kWh
Demand Charge (Over 200 kW)	$5.00 / kW
HVD Billing Credit Units	($0.42) / kW
HVM Discount	(0.942%)
Second Feeder Service	$3.28 / kW

Source: Schedule HSG-4-D, Rate Design for Large Demand – Rate G-32 / G-62

This rate structure does not reflect the underlying costs for the Rate G-32 class. National Grid's functional classification of costs includes only customer-related costs and demand-related costs. *See* Schedule HSG-1C-1, Unit Costs By Functional Classification. Since there are no energy-related costs included in the Company's functional classification of costs, then, under the guiding principle regarding the nature of the underlying costs espoused by the Company, the rate design should exclude any energy-related charges. The costs which are proposed to be collected through energy-based charges should be collected through the demand-based charges instead.

Q. DOES THE COLLECTION OF DEMAND-RELATED COSTS THROUGH THE ENERGY-BASED CHARGES, AS PROPOSED BY THE COMPANY, CREATE INTRA-CLASS SUBSIDIES?

A. Yes. Collecting demand-related (or fixed) costs through energy-based (or variable) charges shifts demand cost responsibility from lower load factor customers to higher load factor customers. Essentially, recovering demand-related costs on the energy charge results in misallocation of cost responsibility as higher load factor customers overpay for the demand-related costs incurred by the Company to serve them.

Q. CAN YOU PROVIDE A GENERAL ILLUSTRATION OF THIS SHIFT IN DEMAND COST RESPONSIBILITY?

A. Yes. Assume the following:

a) A utility has only two customers (Customer 1 and Customer 2), with individual peak demands of 20 Kw for a total system load of 40 Kw.

b) The annual revenue requirement or cost to the utility associated with the investment to serve the customers is $2,000 which will be collected each year. Each customer is responsible for one-half (½) of the cost, or $1,000 of demand-related or fixed costs.

c) Customer 1 has a monthly demand of 20 kW and a load factor of 60 percent and thus consumes 105,120 kWh/year (20 kW * 60% * 8760 hours).

d) Customer 2 has a monthly demand of 20 kW and a load factor of 30 percent and thus consumes 52,560 kWh/year (20 kW * 30% * 8760 hours).

Q. IF THE DEMAND-RELATED COSTS WERE CHARGED ON A PER KW BASIS, WHAT WOULD THE PER KW CHARGE BE?

A. The charge would be $4.17 per kW-month ($2,000 / 40 kW / 12 months). Each customer would then pay $1,000 for the demand-related cost they impose on the system (20 kW * $4.17/kW * 12).

Q. IF THE DEMAND-RELATED COSTS WERE CHARGED ON A PER KWH BASIS, WHAT WOULD THE PER KWH CHARGE BE?

A. If customers were charged on a per kWh basis, the energy charge would be 1.27 cents per kWh ($2,000 / 157,860 kWh), where $2,000 is the total cost and 157,860 kWh represents the total annual energy sales.

Q. WHAT WOULD EACH CUSTOMER PAY UNDER THE PER KWH CHARGE OF 1.27 CENTS PER KWH?

A. Customer 1, the customer with the higher load factor of 60 percent, would pay $1,333 ($0.0127/kWh * 105,120 kWh). Customer 2, the customer that has the lower load factor would pay $667 ($0.0127/kWh * 52,560 kWh).

Q. ARE THE RESULTING ENERGY BASED CHARGES REPRESENTATIVE OF THE UNDERLYING COSTS?

A. No. As can be seen in the example, if the Company collects its demand-related costs through energy-based charges, it will over-collect from one customer and under-collect from the other. Recall that each customer is responsible for causing $1,000 of the annual fixed costs. Under the per kWh scenario, the utility would recover $333 more from the higher load factor customer, Customer 1, than its cost responsibility and $333 less from the lower load factor customer, Customer 2, than its cost responsibility. In other words, Customer 1, would be subsidizing $333 of Customer 2's cost responsibility.

Q. WHAT IS WALMART'S RECOMMENDATION TO THE COMMISSION REGARDING RATE DESIGN FOR RATE G-32?

A. The Commission should order the Company to update its proposed rate design to reflect the correct billing demand units and establish a base distribution rate structure for Rate G-32 that consists of only customer charges and demand charges.

These updates will ensure that Rate G-32 collects the proper revenue, sends more accurate price signals, and reduces intra-class subsidies.

Q. HAVE YOU DETERMINED A RATE DESIGN BASED ON YOUR RECOMMENDATION?

A. Yes. I have provided a rate design based on my recommendations that conforms to the guiding principles outlined by Company witness Gorman. This rate design is shown in Table 3. See Exhibit GWT-4.

Table 3: Proposed Rate Design.

Rate Component	Proposed Rate
Customer Charge	$1,100 / Month
Demand Charge (Over 200 kW)	$8.41 / kW
HVD Billing Credit Units	($0.42) / kW
HVM Discount	(0.942%)
Second Feeder Service	$3.28 / kW

Source: Exhibit GWT-4

Consolidation of Rates G-32 and G-62

Q. DID THE COMPANY PROPOSE CHANGES TO THE RATE CLASSES IN ITS RATE DESIGN PROPOSAL?

A. Yes. The Company proposed to eliminate Rate G-62 and move those customers into Rate G-32, resulting in a single consolidated customer class.

Q. WHAT IS YOUR UNDERSTANDING OF THE COMPANY'S REASON FOR CONSOLIDATION OF THESE CLASSES?

A. According to Company witness Gorman, National Grid is combining these classes to eliminate Rate G-62, which is an optional rate for customers with a maximum 12-month demand in excess of 5,000 kW. Moving rates to the cost of service levels would require a significant increase to customers taking service under Rate G-62 because those customers are currently paying significantly less than their cost of service. Further, the Company indicates that if these rates are not combined, the current Rate G-62 customers would migrate to rate G-32, creating a significant shortfall in revenue which would be recovered from all customers under the Company's Revenue Decoupling Mechanism ("RDM"). *See* Gorman Direct, p. 38 line 15 – p. 39 line 8.

Q. IS WALMART CONCERNED WITH THE COMPANY'S PROPOSAL TO CONSOLIDATE THE RATE G-32 AND G-62 CLASSES INTO A SINGLE CLASS?

A. Walmart is concerned with the proposed methodology used by the Company to combine Rate G-32 and G-62 classes into a single consolidated class. The proposed method produces a COSS that fails to reflect the underlying cost basis of the consolidated class.

Q. WAS THE COMPANY'S COSS PERFORMED USING A CONSOLIDATED CLASS CONTAINING THE EXISTING RATE G-32 AND RATE G-62 CUSTOMERS?

A. No. The Company's COSS was performed using the Rate G-32 and Rate G-62 classes as separate classes. *See* Schedule HSG-1, Allocated Cost of Service for the Rate Year Revenue Requirement.

Q. HOW WAS THE COMBINED CLASS CREATED BY THE COMPANY?

A. According to Company witness Gorman, "Narragansett Electric has combined the proposed revenue allocation of Rates G-32 and G-62 for the purposes of designing rates for the rate class." *See* Gorman Direct, p. 39, lines 17 – 19.

Q. DOES NATIONAL GRID'S METHOD RESULT IN A FAIR, JUST, AND REASONABLE ALLOCATION OF COSTS?

A. No. In order to create a fair cost apportionment, the COSS must reflect the characteristics of each customer class. Performing the COSS and combining class results yields a different result than consolidating classes and then performing the COSS utilizing the single consolidated class.

Q. CAN YOU PROVIDE AN EXAMPLE OF HOW THE RESULTS MAY DIFFER IN THESE TWO METHODS?

A. Yes. Consider a COSS containing three classes with the simplified load shapes, each having a non-coincident peak of 100 kW, shown in Figure 1.

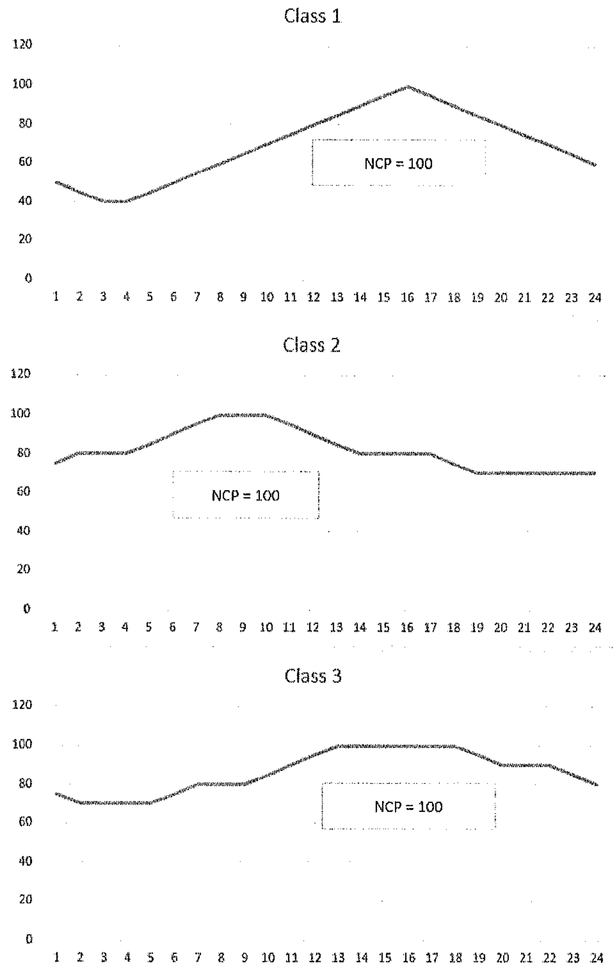

Figure 1. Example Load Shapes for a Three Class System

Q. UNDER THIS EXAMPLE, HOW WOULD $1,000 BE ALLOCATED USING AN NCP ALLOCATOR?

A. Each class has an NCP of 100 kW which results in an NCP allocator of 0.333 for each of the classes (100 kW/ 300 kW = .333). The cost being allocated using the NCP allocation is $1,000 so each class would be allocated a cost of $333 ($1,000 x .333 = $333).

Q. IF CLASSES 2 AND 3 WERE COMBINED USING THE COMPANY'S APPROACH, WHICH IS TO COMBINE THE CLASSES *AFTER* PERFORMING THE COSS, WHAT WOULD THE REVENUE REQUIREMENT BE FOR THE COMBINED CLASS?

A. Summing the $333 assigned to Class 2 and the $333 assigned to Class 3 would result in a combined class revenue requirement of $666.

Q. IF CLASSES 2 AND 3 WERE CONSOLIDATED PRIOR TO DETERMING THE NCP ALLOCATOR HOW WOULD $1,000 BE ALLOCATED TO THE RESULTING TWO CLASSES?

A. The consolidated load shape for the new consolidated class ("Class 2 + 3") is shown in Figure 2. The NCP for this new class is 185 Kw and the NCP for Class 1, is unaffected.

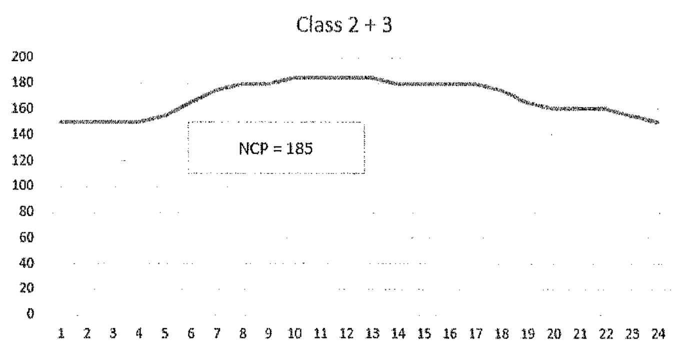

Figure 2. Consolidated Load Shape of Class 2+3

The resulting allocation percentage to Class 1 is now 0.351 (100 kW / 285 kW = .351) and the allocation percentage to the new Class 2 + 3 is 0.649 (185 kW / 285 kW = .649). The allocation of the $1,000 in cost results in Class 1 being allocated a revenue requirement of $351 and Class 2 + 3 would have a revenue requirement of

$649. As can be seen, these results are different than the results from combining the COSS revenue requirement results of the two classes as proposed by the Company.

Q. WHAT IS WALMART'S RECOMMENDATION TO THE COMMISSION ON THE CONSOLIDATION OF RATE G-32 AND G-62 CLASSES?

A. The Commission should reject the method proposed by the Company to combine the revenue requirement of the Rate G-32 and G-62 classes for the purpose of designing rates for the combined class and instead order National Grid to perform the COSS using a single consolidated class.

Tax Cuts and Jobs Act

Q. WHAT IS YOUR UNDERSTANDING OF THE COMPANY'S RESPONSE TO THE TCJA?

A. Based on the Company's response to Commission's Data Request 4-1, I understand that on March 2, 2018, the Company submitted revised revenue requirements which reflected the reduction in federal income tax rates from 35 percent to 21 percent and other implications of the TCJA on revenue requirements. *See* Responses to Commission's Fourth Set of Data Requests, PUC 4-1 Supplemental, March 28, 2018.

Q. HAVE YOU THOROUGHLY REVIEWED THE COMPANY'S REVISED REVENUE REQUIREMENTS AND THE IMPACT OF THE TCJA ON THE COMPANY'S ORIGINAL FILING?

A. No. As previously discussed, I performed only a cursory review of the impact on the overall revenue requirement changes. I have not performed a thorough review of the impacts of the TCJA as presented in the Company's supplemental filing.

Q. DOES WALMART TAKE A POSITION ON THE COMPANY'S REVENUE REQUIREMENT AS REVISED TO REFLECT THE IMPACT OF THE TCJA?

A. No. Walmart does not take a position on the revised revenue requirement based on the impacts of the TCJA at this time. Walmart reserves the right to address the revised revenue requirements during the course of this proceeding.

Q. GENERALLY, WHAT IS WALMART'S POSITION ON ADDRESSING THE TCJA IMPACT ON UTILITY COMPANIES' RATES?

A. In general, Walmart supports a solution to address the net impact of the TCJA that:

- Ensures the entire net benefit created by the TCJA is reflected in the revenue requirements and rates paid by an investor-owned utility's customers. The appropriate solution will account for and include the entire net effect of the TCJA and ensure that both customers and shareowners are properly compensated under the resulting revenue requirement.
- Supports the transfer of the benefits to customers as quickly as possible. The benefits of the TCJA became effective on January 1, 2018. Regulatory authorities should seek to ensure that customers receive the resulting benefits based on the changes in tax rates as of their effective date and that those benefits are returned to customers as quickly as possible.

- Incorporates the rate-making principle of simplicity; avoiding the conflation of tax benefit with other rate-making and/or regulatory issues. The appropriate solution supports accurate determination of the net tax impact and provides for a true-up to actual revenue requirement impact to ensure that the utility's authorized earnings are not impacted by the TCJA.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

Gregory W. Tillman

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EXPERIENCE

November 2015 – Present
Wal-Mart Stores, Inc., Bentonville, AR
Senior Manager, Energy Regulatory Analysis

November 2008 – November 2015
Oklahoma Gas & Electric, Oklahoma City, OK
Product Development Pricing Leader
Manager, Pricing
Senior Pricing Analyst

May 2006 – November 2008
LSG Solutions, Oklahoma City, OK
Project Manager, International Registration Plan/Interstate Fuel Tax Agreement Systems Development

August 2002 – May 2006
OnPeak Utility Solutions, Oklahoma City, OK
Owner/Consultant

May 2000 – August 2002
Automated Energy, Inc., Oklahoma City, OK
Vice President, Utility Solutions

November 1997 – May 2000
Williams Energy, Tulsa, OK
Sr. Manager Accounting Services
Process Manager, Customer Billing and Accounting
Retail Systems Manager, Billing and Electricity

May 1990 – November 1997
Public Service Company of Oklahoma, Tulsa, OK
Manager, Software Development and Support
Supervisor, Data Translation and Power Billing
Administrator, Disaster Recovery and Research and Development
Programmer/Analyst

June 1987 – May 1990
United States Army, Signal Command, Ft. Monmouth, NJ
Project Officer, Joint Tactical Information Distribution System

EDUCATION

1991-1994	**The University of Tulsa**	Graduate Coursework, M.B.A.
1987	**The University of Tulsa**	B.S., Electrical Engineering

TESTIMONY BEFORE REGULATORY COMMISSIONS

2018
Connecticut Public Utilities Regulatory Authority Docket No. 17-10-46: Application of the Connecticut Light and Power Company D/B/A Eversource Energy to Amend its Rate Schedules.

2017
Indiana Utility Regulatory Commission Cause No. 44967-NONE: Petition of Indiana Michigan Power Company, an Indiana corporation, for (1) authority to increase its rates and charges for electric utility service through a phase in rate adjustment; (2) approval of: revised depreciation rates; accounting relief; inclusion in basic rates and charges of qualified pollution control property, clean energy projects and cost of bringing I&M's system to its present state of efficiency; rate adjustment mechanism proposals; cost deferrals; major storm damage restoration reserve and distribution vegetation management program reserve; and amortizations; and (3) for approval of new schedules of rates, rules and regulations.

Public Service Commission of Wisconsin Docket No. 4220-UR-123: Application of Northern States Power Company, a Wisconsin Corporation for Authority to Adjust Electric and Natural Gas Rates

Michigan Public Service Commission Case No. U-18255. In the matter of the Application of DTE ELECTRIC COMPANY for authority to increase its rates for its rate schedules and rules governing the generation and distribution of electricity and for other relief.

Michigan Public Service Commission Case No. U-18322. In the matter of the Application of CONSUMERS ENERGY COMPANY for authority to increase its rates for its rate schedules and rules governing the generation and distribution of electricity and for other relief.

Iowa Utilities Board Docket No. RPU-2017-0001: In re: Interstate Power and Light Company.

Public Service Commission of Kentucky Case No. 2017-00179: In the Matter of the Electronic Application of Kentucky Power Company for (1) A General Adjustment of its Rates for Electric Service; (2) An Order Approving its 2017 Environmental Compliance Plan; (3) An Order Approving its Tariffs and Riders; (4) An Order Approving Accounting Practices to Establish Regulatory Assets and Liabilities; and (5) An Order Granting all other Required Approvals and Relief.

Public Service Commission of Kentucky Case No. 2016-00370: In the Matter of the Electronic Application of Kentucky Utilities Company for an Adjustment of Its Electric Rates and for Certificates of Public Convenience and Necessity.

Public Service Commission of Kentucky Case No. 2016-00371: In the Matter of the Electronic Application of Louisville Gas and Electric Company for an Adjustment of Its Electric and Gas Rates and for Certificates of Public Convenience and Necessity.

2016
Arizona Corporation Commission Docket No. E-01345A-16-0036: In the Matter of the Application of Arizona Public Service Company for a Hearing to Determine the Fair Value of the Utility Property of the

Company for Ratemaking Purposes, to Fix a Just and Reasonable Rate of Return Thereon, to Approve Rate Schedules Designed to Develop Such Return.

Public Service Commission of South Carolina Docket No. 2016-227-E: IN RE: Application of Duke Energy Progress, LLC for Authority to Adjust and Increase Its Electric Rates and Charges

Arkansas Public Service Commission Docket No. 16-027-R: In The Matter of Net Metering and The Implementation of Act 827 of 2015.

Public Utility Commission of Texas Docket No. 45524, in the matter of the Application of Southwestern Public Service for Authority to Change Rates

Public Service Commission of Wisconsin Docket No. 4220-UR-122: Application of Northern States Power Company, a Wisconsin Corporation for Authority to Adjust Electric and Natural Gas Rates

Michigan Public Service Commission Case No. U-18014. In the matter of the Application of DTE ELECTRIC COMPANY for authority to increase its rates, amend its rate schedules and rules governing the distribution and supply of electric energy, and for miscellaneous accounting authority.

Arizona Corporation Commission Docket No. E-01933A-15-0322: In the Matter of the Application of Tucson Electric Power Company For the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of the Properties of Tucson Electric Power Company Devoted to its Operations Throughout the State of Arizona, and for Related Approvals.

2015
Arizona Corporation Commission Docket No. E-04204A-15-0142: In the Matter of the Application of UNS Electric, Inc. For the Establishment of Just and Reasonable Rates and Charges Designed to Realize a Reasonable Rate of Return on the Fair Value of the Properties of UNS Electric, Inc. Devoted to Its Operations Throughout the State of Arizona, and for Related Approvals.

2012
Arkansas Public Service Commission Docket No. 12-067-U: In the Matter of the Application of Oklahoma Gas and Electric Company for an Order Approving a Temporary Surcharge to Recover the Costs of a Renewable Wind Generation Facility

2011
Oklahoma Corporation Commission Cause No. PUD 201100087: In the Matter of the Application of Oklahoma Gas and Electric Company for an Order of the Commission Authorizing Applicant to Modify its Rates, Charges, and Tariffs for Retail Electric Service in Oklahoma

2010
Arkansas Public Service Commission Docket No. 10-067-U: In the Matter of the Application of Oklahoma Gas and Electric Company for Approval of a General Change in Rates and Tariffs

Reported Authorized Returns on Equity, Electric Utility Rate Cases Completed, 2015 to Present

State	Utility	Docket	Decision Date	Vertically Integrated (V)/Distribution (D)	Return on Equity (%)
Wyoming	PacifiCorp	20000-446-ER-14	1/23/2015	V	9.50%
Colorado	Public Service Co. of CO	14AL-0660E	2/24/2015	V	9.83%
New Jersey	Jersey Central Power & Light Co.	ER-12111052	3/18/2015	D	9.75%
Washington	PacifiCorp	UE-140762	3/25/2015	V	9.50%
Minnesota	Northern States Power Co.	E-002/GR-13-868	3/26/2015	V	9.72%
Michigan	Wisconsin Public Service Corp.	U-17669	4/23/2015	V	10.20%
Missouri	Union Electric Co.	ER-2014-0258	4/29/2015	V	9.53%
West Virginia	Appalachian Power Co.	14-1152-E-42-T	5/26/2015	V	9.75%
New York	Central Hudson Gas & Electric	14-E-0318	6/17/2015	D	9.00%
New York	Consolidated Edison Co. of NY	15-E-0050	6/17/2015	D	9.00%
Missouri	Kansas City Power & Light	ER-2014-0370	9/2/2015	V	9.50%
Kansas	Kansas City Power & Light	15-KCPE-116-RTS	9/10/2015	V	9.30%
New York	Orange & Rockland Utlts Inc.	14-E-0493	10/15/2015	D	9.00%
Michigan	Consumers Energy Co.	U-17735	11/19/2015	V	10.30%
Wisconsin	Wisconsin Public Service Corp.	6690-UR-124	11/19/2015	V	10.00%
Wisconsin	Northern States Power Co.	4220-UR-121	12/3/2015	V	10.00%
Illinois	Ameren Illinois	15-0305	12/9/2015	D	9.14%
Illinois	Commonwealth Edison Co.	15-0287	12/9/2015	D	9.14%
Michigan	DTE Electric Co.	U-17767	12/11/2015	V	10.30%
Oregon	Portland General Electric Co.	UE 294	12/15/2015	V	9.60%
Texas	Southwestern Public Service Co	43695	12/17/2015	V	9.70%
Idaho	Avista Corp.	AVU-E-15-05	12/18/2015	V	9.50%
Wyoming	PacifiCorp	20000-469-ER-15	12/30/2015	V	9.50%
Washington	Avista Corp.	UE-150204	1/6/2016	V	9.50%
Arkansas	Entergy Arkansas Inc.	15-015-U	2/13/2016	V	9.75%
Indiana	Indianapolis Power & Light Co.	44576	3/16/2016	V	9.85%
Massachusetts	Fitchburg Gas & Electric Light	15-80	4/29/2016	D	9.80%
Maryland	Baltimore Gas and Electric Co.	9406	6/3/2016	D	9.75%
New Mexico	El Paso Electric Co.	15-00127-UT	6/8/2016	V	9.48%
New York	NY State Electric & Gas Corp.	15-E-0283	6/15/2016	D	9.00%
New York	Rochester Gas & Electric Corp.	15-E-0285	6/15/2016	D	9.00%
Indiana	Northern Indiana Public Service Co.	44688	7/18/2016	V	9.98%
Tennessee	Kingsport Power Company	16-00001	8/9/2016	V	9.85%
Arizona	UNS Electric Inc.	E-04204A-15-0142	8/18/2016	V	9.50%
New Jersey	Atlantic City Electric Co.	ER-16030252	8/24/2016	D	9.75%
Washington	PacifiCorp	UE-152253	9/1/2016	V	9.50%
Michigan	Upper Peninsula Power Co.	U-17895	9/8/2016	V	10.00%
New Mexico	Public Service Co. of NM	15-00127-UT	9/28/2016	V	9.58%
Massachusetts	Massachusetts Electric Co.	15-155	9/30/2016	D	9.90%
Wisconsin	Madison Gas and Electric Co.	3270-UR-121	11/9/2016	V	9.80%
Oklahoma	Public Service Company of OK	PUD 201500208	11/10/2016	V	9.50%
Maryland	Potomac Electric Power Co.	9418	11/15/2016	D	9.55%
Wisconsin	Wisconsin Power and Light Co	6680-UR-120	11/18/2016	V	10.00%
Florida	Florida Power & Light Co.	160021-EI	11/29/2016	V	10.55%
California	Liberty Utilities CalPeco	A15-05-008	12/1/2016	V	10.00%

Reported Authorized Returns on Equity, Electric Utility Rate Cases Completed, 2015 to Present

State	Utility	Docket	Decision Date	Vertically Integrated (V)/Distribution (D)	Return on Equity (%)
Illinois	Ameren Illinois	16-0262	12/6/2016	D	8.64%
Illinois	Commonwealth Edison Co.	16-0259	12/6/2016	D	8.64%
South Carolina	Duke Energy Progress Inc.	2016-227-E	12/7/2016	V	10.10%
New Jersey	Jersey Central Power & Light Co.	ER-16040383	12/12/2016	D	9.60%
Connecticut	United Illuminating Co.	16-06-04	12/14/2016	D	9.10%
Colorado	Black Hills Colorado Electric	16AL-0326E	12/19/2016	V	9.37%
Maine	Emera Maine	2015-00360	12/19/2016	D	9.00%
North Carolina	Virginia Electric & Power Co.	E-22 Sub 532	12/22/2016	V	9.90%
Nevada	Sierra Pacific Power Co.	16-06006	12/22/2016	V	9.60%
Idaho	Avista Corp.	AVU-E-16-03	12/28/2016	V	9.50%
Wyoming	MDU Resources Group Inc.	2004-117-ER-16	1/18/2017	V	9.45%
New York	Consolidated Edison Co. of NY	16-E-0060	1/24/2017	D	9.00%
Michigan	DTE Electric Co.	U-18014	1/31/2017	V	10.10%
Maryland	Delmarva Power & Light Co.	9424	2/15/2017	D	9.60%
New Jersey	Rockland Electric Company	ER-16050428	2/22/2017	D	9.60%
Arizona	Tucson Electric Power Co.	E-01933A-15-0322	2/24/2017	V	9.75%
Michigan	Consumers Energy Co.	U-17990	2/28/2017	V	10.10%
Minnesota	Otter Tail Power Co.	E-017/GR-15-1033	3/2/2017	V	9.41%
Oklahoma	Oklahoma Gas & Electric Co.	PUD 201500273	3/20/2017	V	9.50%
Florida	Gulf Power Co.	160186-EI	4/4/2017	V	10.25%
New Hampshire	Liberty Utilities Granite St	DE-16-383	4/12/2017	D	9.40%
New Hampshire	Unitil Energy Systems Inc.	DE-16-384	4/20/2017	D	9.50%
Missouri	Kansas City Power & Light	ER-2016-0285	5/3/2017	V	9.50%
Minnesota	Northern States Power Co.	E-022/GR-15-826	5/11/2017	V	9.20%
Arkansas	Oklahoma Gas & Electric Co.	16-052-U	5/18/2017	V	9.50%
Delaware	Delmarva Power & Light Co.	16-0649	5/23/2017	D	9.70%
North Dakota	MDU Resources Group Inc.	PU-16-666	6/16/2017	V	9.65%
Kentucky	Kentucky Utilities Co.	2016-00370	6/22/2017	V	9.70%
Kentucky	Louisville Gas & Electric Co.	2016-00371	6/22/2017	V	9.70%
District of Columbia	Potomac Electric Power Co.	FC-1139	7/24/2017	D	9.50%
Arizona	Arizona Public Service Co.	E-01345A-16-0036	8/15/2017	V	10.00%
New Jersey	Atlantic City Electric Co.	D-ER-17030308	9/22/2017	D	9.60%
Texas	Oncor Electric Delivery Co.	45957	9/28/2017	D	9.80%
Maryland	Potomac Electric Power Co.	9443	10/20/2017	D	9.50%
California	Pacific Gas & Electric Co.	Advice No. 5148-E	10/26/2017	V	10.25%
California	San Diego Gas & Electric Co.	Advice No. 3120-E	10/26/2017	V	10.20%
California	Southern California Edison Co.	Advice No. 3665-E	10/26/2017	V	10.30%
Florida	Tampa Electric Co.	20170210-EI	11/6/2017	V	10.25%
Alaska	Alaska Electric Light Power	U-16-086	11/15/2017	V	11.95%
Massachusetts	NSTAR Electric Co.	17-05	11/30/2017	D	10.00%
Massachusetts	Western Massachusetts Electric	17-05	11/30/2017	D	10.00%
Washington	Puget Sound Energy Inc.	UE-170033	12/5/2017	V	9.50%
Illinois	Ameren Illinois	17-0197	12/6/2017	D	8.40%
Illinois	Commonwealth Edison Co.	17-0196	12/6/2017	D	8.40%
Wisconsin	Northern States Power Co. - WI	D-4220-UR-123	12/7/2017	V	9.80%

Reported Authorized Returns on Equity, Electric Utility Rate Cases Completed, 2015 to Present

State	Utility	Docket	Decision Date	Vertically Integrated (V)/Distribution (D)	Return on Equity (%)
Texas	El Paso Electric Co.	46831	12/14/2017	V	9.65%
Texas	Southwestern Public Service Co	46449	12/14/2017	V	9.60%
Oregon	Portland General Electric Co.	UE 319	12/18/2017	V	9.50%
New Mexico	Public Service Co. of NM	16-00276-UT	12/20/2017	V	9.58%
Idaho	Avista Corp.	AVU-E-17-01	12/28/2017	V	9.50%
Nevada	Nevada Power Co.	17-06003	12/29/2017	V	9.40%
Vermont	Green Mountain Power Corp	17-3112-INV	12/21/2017	V	9.10%
Kentucky	Kentucky Power Co.	C-2017-00179	1/18/2018	V	9.70%
Oklahoma	Public Service Co. of OK	Ca-PUD201700151	1/31/2018	V	9.30%
Iowa	Interstate Power & Light Co.	D-RPU-2017-0001	2/2/2018	V	9.98%
North Carolina	Duke Energy Progress Inc.	D-E-2, Sub 1142	2/23/2018	V	9.90%
Minnesota	ALLETE (Minnesota Power)	D-E-015/GR-16-664	3/12/2018	V	9.25%
New York	Niagara Mohawk Power Corp.	C-17-E-0238	3/15/2018	D	9.00%

Entire Period		
# of Decisions	**103**	
Average (All Utilities)		**9.62%**
Average (Distribution Only)		**9.33%**
Average (Distribution Only, exc. IL FRP)		**9.46%**
Average (Vertically Integrated Only)		**9.77%**
Median		**9.60%**
Minimum		**8.40%**
Maximum		**11.95%**

2015		
# of Decisions	**23**	
Average (All Utilities)		**9.60%**
Average (Distribution Only)		**9.17%**
Average (Distribution Only, exc. IL FRP)		**9.19%**
Average (Vertically Integrated Only)		**9.75%**

2016		
# of Decisions	**32**	
Average (All Utilities)		**9.60%**
Average (Distribution Only)		**9.31%**
Average (Distribution Only, exc. IL FRP)		**9.45%**
Average (Vertically Integrated Only)		**9.77%**

2017		
# of Decisions	**42**	
Average (All Utilities)		**9.68%**
Average (Distribution Only)		**9.43%**
Average (Distribution Only, exc. IL FRP)		**9.61%**
Average (Vertically Integrated Only)		**9.80%**

Reported Authorized Returns on Equity, Electric Utility Rate Cases Completed, 2015 to Present

State	Utility	Docket	Decision Date	Vertically Integrated (V)/Distribution (D)	Return on Equity (%)
2018					
# of Decisions		6			
Average (All Utilities)					9.52%
Average (Distribution Only)					9.00%
Average (Distribution Only, exc. IL FRP)					9.00%
Average (Vertically Integrated Only)					9.63%

Source: SNL Financial LC, March 26, 2018

Calculation of Revenue Requirement Impact of National Grid's Proposed Increase in ROE

(1)	**Schedule MAL-1-Elec, p. 4**	National Grid Requested Rate of Return			7.43%
		1) Calculate Rate of Return Using the Current ROE			
		Capital Component	**Percent of Total**	**Cost**	**Weighted Cost**
(2)	**Schedule MAL-1-Elec, p. 4**	Short Term Debt	0.45%	1.76%	0.0079%
(3)	**Schedule MAL-1-Elec, p. 4**	Long Term Debt	48.47%	4.69%	2.2732%
(4)	**Schedule MAL-1-Elec, p. 4**	Preferred Stock	0.11%	4.50%	0.0050%
(5)	**Schedule MAL-1-Elec, p. 4**	Total Common Equity	50.97%	9.56%	4.8727%
(6)	**(2)+(3)+(4)+(5)**	**Rate of Return (ROE = 9.56%)**			**7.16%**
		2) Calculate Revenue Requirement Impact at the Proposed ROE			
(7)	**Schedule MAL-1-Elec, p. 1**	Rate Base			$ 758,249
(8)	**= (6)**	Rate of Return (ROE = 9.56%)			7.16%
(9)	**(8) x (7)**	Adjusted Income Requirement (ROE = 9.56%)			$ 54,282
(10)	**Schedule MAL-1-Elec, p. 1**	NG Proposed Income Requirement ($000)			$ 56,338
(11)	**(10) - (9)**	Difference in Income Requirement ($000)			$ 2,056
(12)	**Schedule MAL-1-Elec, p. 1**	Conversion Factor			1.5588
(13)	**(11) x (12)**	**Difference in Revenue Requirement ($000)**			**$ 3,205**
(14)	**Schedule MAL-1-Elec, p. 1**	Requested Revenue Requirement Increase ($000)			$ 41,295
(15)	**(13) / (14)**	**Percent of Increase from ROE Increase**			**7.76%**

Redetermination of Billing Demand Units and Walmart Proposed Rate Design

Line			As Proposed (See HSG-4-D)			Walmart Rate Design		
			Billing Units	Proposed Rates	Revenue	Billing Units	Proposed Rates	Revenue
			(a)	(b)	(c)	(d)	(e)	(f)
1	Revenue Allocation- G-32	$38,949,805			**$47,136,311**			**$47,136,311**
2	Revenue Allocation- G-62	$8,186,505						
3	Customer Charge:							
4	Monthly Bills	B-32	60	$1,100.00	$66,172	60	$1,100.00	$66,172
5		G-32 / G-62	13,403	$1,100.00	$14,743,034	13,403	$1,100.00	$14,743,034
6	**Customer Charge Revenue**		13,463		**14,809,206**	13,463		**14,809,206**
7								
8	Energy-based Charge:							
9	kWh Sales	B-32 Supplemental	13,230,918	$0.00631	83,487	13,230,918	$0.00000	0
10	kWh Sales	G-32 / G-62	2,359,849,091	$0.00631	14,890,648	2,359,849,091	$0.00000	0
11			2,373,080,009		14,974,135	2,373,080,009		0
12	Demand Charge (Over 200 kW)							
13	Demand Billing Units	B-32 Back-up	95,646	$0.92	$87,995	95,646	$0.92	$87,995
14		B-32 Supplemental	31,317	$5.00	$156,586	31,317	$8.41	$263,377
15		G-32	3,512,410	$5.00	$17,562,051	3,856,525	$8.41	$32,433,377
16			3,639,374		$17,806,632	3,983,489		$32,784,749
17								
18	HVD Billing Credit Units	B-32	0	($0.42)	0	0	($0.42)	0
19		G-32	2,286,043	($0.42)	(960,138)	2,286,043	($0.42)	(960,138)
20			2,286,043		(960,138)	2,286,043		(960,138)
21								
22	HVM Discount		$48,559,764	(0.942%)	($457,243)	$48,559,764	(0.942%)	($457,243)
23	Second Feeder Service		295,668	$3.28	969,791	295,668	$3.28	969,791
24	**Distribution Charge Revenue**				**32,333,176**			**32,337,159**
25								
26	**Total Revenue**				**$47,142,382**			**$47,146,365**

	Company's Calculation of kW Included in Customer Charge (Excluded from Billing Units)			Walmart's Corrected Calculation of kW Included in Customer Charge (Excluded from Billing Units)		
1	G-32 Billing kW (Present)	See Proof Present	2,869,062	G-32 Billing kW (Present)		2,869,062
2	G-62 Billing kW (Present)	See Proof Present	1,018,663	G-62 Billing kW (Present)		1,018,663
3	Customers	Incorrect Value	156	Customers	Correct Valı	13
4	Exclude for G-32	kW included in CC	200	Exclude for G-32		200
5	Months		12	Months		12
6	kW excluded	=3 x 4 x 5	375,315	kW excluded		31,200
7	kW from G-62		643,348	kW from G-62		987,463
8	Total Billing Demand Units		3,512,410	Total Billing Demand Units		3,856,525