

BEFORE THE  
NEW YORK STATE  
PUBLIC SERVICE COMMISSION

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Proceeding on Motion of the Commission as to the  
Rates, Charges, Rules and Regulations of  
Central Hudson Gas & Electric Corporation  
for Electric Service

Case 17-E-\_\_\_\_

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Proceeding on Motion of the Commission as to the  
Rates, Charges, Rules and Regulations of  
Central Hudson Gas & Electric Corporation  
for Gas Service

Case 17-G-\_\_\_\_

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**DIRECT TESTIMONY OF THE  
COST OF SERVICE PANEL**

July 28, 2017

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**I. INTRODUCTION**

Q. Please state the names of the members of the Cost of Service Panel (“Panel”).

A. Our names are Glynis Bunt, Jay Tompkins Jr. and Linda VanEtten.

Q. Ms. Bunt, please state your current employer and business address.

A. I am employed by Central Hudson Gas & Electric Corporation (“Central Hudson” or the “Company”) and my business address is 284 South Avenue, Poughkeepsie, New York 12601.

Q. Ms. Bunt, in what capacity are you employed by Central Hudson and what is your scope of responsibilities?

A. I am employed by Central Hudson as Senior Director of Cost, Rates, and Forecasts. In that capacity, I am responsible for cost of service applications, rate design, tariff administration, sales and load forecasting, electric load research and retail access program administration and maintenance.

Q. Ms. Bunt, what is your educational background and professional experience?

A. I hold an Associate in Science Degree in Business Administration from Dutchess Community College, a Bachelor of Science Degree in Business Administration from the State University of New York at New Paltz, and a Master of Business Administration Degree with a concentration in Finance from Marist College. I have been continuously employed by Central Hudson since June 1987 in positions of increasing responsibility in the

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1 Internal Auditing, Financial Planning, and Cost and Rate Divisions. I was  
2 promoted to Director of Cost, Rates & Forecasts in September 2002 and  
3 to my current position in March 2011.

4 Q. Ms. Bunt, have you previously testified before the New York State Public  
5 Service Commission (“Commission” or “PSC”)?

6 A. Yes. I have testified before the Commission in Cases 95-G-1034, 05-E-  
7 0934, 05-G-0935, 08-E-0887, 08-G-0888, 09-E-0588, 09-G-0589, 12-M-  
8 0192, 14-E-0318, 14-G-0319 and have submitted an affidavit in 07-M-  
9 1139.

10 Q. Mr. Tompkins, please state your current employer and business address.

11 A. I am employed by Central Hudson and my business address is 284 South  
12 Avenue, Poughkeepsie, New York 12601.

13 Q. Mr. Tompkins, in what capacity are you employed by Central Hudson and  
14 what is your scope of responsibilities?

15 A. I am employed by Central Hudson as a Cost and Rate Analyst. In that  
16 capacity, I am responsible for gas cost of service applications, developing  
17 monthly commodity and commodity-related prices, analyzing and  
18 designing delivery surcharge rates and, filing tariff and regulatory updates.

19 Q. Mr. Tompkins, what is your educational background and professional  
20 experience?

21 A. I hold an Associate in Applied Science Degree in Orthotics Assistant  
22 Technology from Dutchess Community College, a Bachelor of Science  
23 Degree in Accounting and a Bachelor of Science Degree in Finance both

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1 from the State University of New York at New Paltz. I began employment  
2 at Central Hudson in May 2010 as an Accountant in Financial Reporting.  
3 In March 2014, I was transferred to my current position.

4 Q. Mr. Tompkins, have you previously testified before the Commission?

5 A. Yes, I have testified before the Commission in Cases 14-E-0318 and 14-  
6 E-0319.

7 Q. Ms. VanEtten, please state your current employer and business address.

8 A. I am employed by Central Hudson and my business address is 284 South  
9 Avenue, Poughkeepsie, New York 12601.

10 Q. Ms. VanEtten, in what capacity are you employed by Central Hudson and  
11 what is your scope of responsibilities?

12 A. I am employed by Central Hudson as an Associate Cost and Rate Analyst.  
13 In that capacity, I am responsible for: maintaining the electric load  
14 research program; compiling and analyzing sales, revenue, weather and  
15 electric load data for internal and regulatory reporting; maintaining the  
16 New York Independent System Operator (“NYISO”) Loadshift reporting  
17 process; compiling and analyzing data for cost of service studies;  
18 developing monthly electric commodity and commodity related prices; and  
19 filing tariff and regulatory updates.

20 Q. Ms. VanEtten, what is your educational background and professional  
21 experience?

22 A. I hold an Associate in Science Degree in Business Administration from  
23 Ulster County Community College. I began my employment at Central

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1 Hudson in April 2000 as a Customer Service Representative. I was  
2 promoted to Executive Assistant in November 2000. I transferred to  
3 Assistant Payroll Analyst in April 2005 and was promoted to Payroll  
4 Analyst in March 2008. I was transferred to my current position in January  
5 2011.

6 Q. Ms. VanEtten, have you previously testified before the Commission?

7 A. Yes. I have testified before the Commission in Cases 12-M-0192, 14-E-  
8 0318, and 14-G-0319.

9 **II. PURPOSE OF TESTIMONY**

10 Q. What is the purpose of the Panel’s testimony in these proceedings?

11 A. The Panel presents cost of service (“COS”) information regarding the  
12 Company’s electric and gas operations, and addresses the electric and  
13 gas factors of adjustment.

14 Q. Is the Panel sponsoring any exhibits in support of its testimony?

15 A. Yes, the Panel is sponsoring:

- 16 1) Exhibit \_\_ (COSP-1) – Electric Department Embedded Cost of  
17 Service Studies;
- 18 2) Exhibit \_\_ (COSP-2) – Gas Department Embedded Cost of Service  
19 Studies;
- 20 3) Exhibit \_\_ (COSP-3) – Hypothetical Embedded Studies;

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- 1           4)     Exhibit \_\_ (COSP-4) - Electric Department Marginal Cost of Service
- 2                     Study;
- 3           5)     Exhibit \_\_ (COSP-5) – Gas Department Marginal Cost of Service
- 4                     Study; and
- 5           6)     Exhibit \_\_ (COSP-6) – Comparison of Rates.

6 Q.     Would you please describe the COS studies that the Panel has prepared?

7 A.     Yes. We have prepared four separate embedded COS studies that are

8           fully allocated and unbundled pursuant to the Unbundling Track

9           Guidelines of Case 00-M-0504 and reflect further unbundling refinements

10          implemented in Cases 09-E-0588 and 09-G-0589. These COS studies

11          are: an historical study and a pro forma study of electric operations; and

12          an historical study and a pro forma study of gas operations. The historical

13          studies pertain to the calendar year ended December 31, 2015. The pro

14          forma studies pertain to the twelve months ending June 30, 2019 (the

15          “Rate Year”). We have also prepared two hypothetical historic embedded

16          service studies, one for electric operations and one for gas operations,

17          removing certain elements of revenue and cost as discussed more fully

18          below.

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1 We have also prepared system-wide electric and gas marginal cost of  
2 service studies.

3 **III. EMBEDDED COS STUDIES**

4 Q. What is the purpose of an embedded COS study?

5 A. The basic purpose is to determine the earned rate of return (“ROR”) on  
6 rate base by service class in order to evaluate the relationship between  
7 current rates being charged to each customer class and the costs incurred  
8 to serve each customer class. Basically, revenues less expense divided  
9 by rate base yields the ROR, an estimate of operating income received for  
10 each dollar invested to provide service.

11 Q. What is the difference between an historical COS and a pro forma COS?

12 A. An historical COS uses actual data as recorded on the Company's books  
13 for a particular calendar year, in this case 2015. A pro forma COS utilizes  
14 rate year forecasts for system loads, revenues, expenses, and rate base  
15 to develop an estimated ROR by service class. Together, the historical  
16 and pro forma studies allow for a comparison of estimated realized to  
17 estimated expected rates of return based on the current rate structure  
18 adopted in Cases 14-E-0318 and 14-G-0319, the Company’s prior rate  
19 cases.

20 Q. What is the purpose of the historical year COS studies?

21 A. One purpose of the historical year studies is to document actual realized  
22 rate base, revenues and expenses by rate class that are reconcilable to

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1 Central Hudson's Annual Report to the Commission. An historical year  
2 study also is used to facilitate the unbundling of rates by reference to  
3 actual calendar year labor and expenses by Commission account and  
4 Central Hudson function number.

5 Q. What is the primary purpose of the pro forma COS studies?

6 A. The primary purpose of the pro forma COS studies is to provide a frame of  
7 reference and guidance for the design of cost-based delivery service rates  
8 that will produce relative ROR uniformity among the various rate classes  
9 and a fair rate of return on the Company's capital investments.

10 Q. Please outline the methods used to prepare an embedded COS study.

11 A. The basic procedure is to allocate rate base, expenses, and revenue  
12 among the various service classes via a three step process of: (1)  
13 functionalization; (2) classification of investment and expenses; and then  
14 (3) allocation of those "costs" among the service subclasses.

15 Q. Please explain what is meant by the term "functionalization."

16 A. Functionalization characterizes the analysis and re-grouping of the various  
17 plant investment and expenses according to the activity or "function" for  
18 which the cost was incurred rather than strictly by the Federal Energy  
19 Regulatory Commission ("FERC")/PSC account number to which it was  
20 booked. The conventional "functions" are production-related,  
21 transmission-related, distribution-related or customer-related ("PTDC").

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1 Q. How did the Panel determine the function of a cost?

2 A. Company accounting records and data maintained for engineering  
3 purposes are the principal sources of information used in the  
4 functionalization process. Personnel from the Company's accounting and  
5 engineering areas also provided assistance in identifying the particular  
6 function or functions of specific investments.

7 Q. Would the Panel please provide an example of a functionalized cost?

8 A. Costs recorded in the Electric Plant Account 353, Transmission Station  
9 Equipment, averaged approximately \$111.5 million in 2015. Records as  
10 to the type and location of the equipment represented by this investment  
11 indicate that about \$2.6 million served a production function; \$85.1 million  
12 served a power supply transmission function; \$23.7 million served a  
13 distribution function and about \$150,000 served a specific class of  
14 customers. As a result, the \$2.6 million would be functionalized to  
15 production, the \$85.1 million to transmission, the \$23.7 million to  
16 distribution, and the \$150,000 is specifically assigned to a specific class of  
17 customers.

18 Q. Please explain what is meant by the term "classification."

19 A. Classification refers to the process of separating the functionalized costs  
20 into amounts related to demand, energy or number of customers.  
21 Demand-related costs vary in proportion to the rate (expressed in kW or  
22 Mcf) at which customers utilize electricity or natural gas. Energy-related  
23 costs vary in proportion to the total volume of the electricity or natural gas

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1 delivered. Customer-related costs vary in proportion to the number of  
2 customers served. A smaller, fourth category of costs, specifically-  
3 assigned, defines costs that can be attributed to a particular service class  
4 of customers.

5 Q. Regarding the Panel’s example of the functionalization of Electric Account  
6 353, how did the Panel proceed to classify these costs?

7 A. Since virtually all of the equipment included in Account 353 must be sized  
8 to meet the expected maximum collective demand of all customers, the  
9 non-specific functional categories (production, power supply transmission  
10 and distribution) were classified as demand-related investment. The  
11 remainder, about \$150,000, was specifically assigned.

12 Q. Please explain what is meant by the term “allocation.”

13 A. Allocation refers to the process of distributing the functionalized and  
14 classified costs among the service classes on the basis of service class  
15 contribution to peak demand (in kW); or, class contribution to total volume  
16 of electricity delivered (i.e., energy in MWh); or, class contribution to total  
17 number of customers; or, by direct assignment to a specific rate class  
18 when appropriate. To accomplish this step, several types of “demand”  
19 allocators are used, including Summer/Winter Coincident Peak (“CP”)  
20 demand, Class NCP (non-coincident peak kW); and Sigma NCPi (sum of  
21 individual customers’ peak demand).

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1 Q. Continuing with the Panel's Account 353 example, how was the plant  
2 investment ultimately allocated?

3 A. The Company allocated investments functionalized as "production" and  
4 "power supply transmission" to the various service classes on the basis of  
5 their respective contribution to the average of the summer and winter  
6 coincident peak demands. Investment functionalized as "distribution-  
7 related" was allocated on the basis of per class contribution to the class  
8 non-coincident peak demand at the substation level of service.  
9 Investments functionalized as "specific" were directly assigned to the rate  
10 classes of customers to be served by that investment.

11 Q. What major sources of information were used to develop the historical  
12 cost of service studies?

13 A. The Company used the "Electric Utility Cost Allocation Manual" dated  
14 January 1992 by the National Association of Regulatory Utility  
15 Commissioners as the basic reference on cost of service methodology.  
16 Company accounting and engineering records yielded additional  
17 information for the functionalization and classification of various costs.  
18 The Company's Annual Report to the PSC for the year ended December  
19 31, 2015 was the principal source for income statement items and  
20 operation and maintenance expenses. The Company developed electric  
21 demand allocators from comprehensive load research data compiled for  
22 calendar year 2015. Finally, Company billing records yielded number of

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1 customers, kWh/Mcf sold/delivered and revenues by rate code and  
2 service class.

3 Q. What major sources of information did Central Hudson use to develop the  
4 Rate Year pro forma cost of service studies?

5 A. The Company's Revenue Requirements Panel provided Rate Year  
6 income statements for both gas and electric, which included estimates for  
7 future rate base, operations & maintenance ("O&M"), depreciation and  
8 amortization and other operating expenses. The Company's Forecasting  
9 and Rates Panel provided revenue, sales and customer forecasts. Details  
10 regarding future plant investments, depreciation reserve and taxes came  
11 from the Accounting and Tax Panel. Rate Year demand allocators were  
12 developed by applying the ratio of historical kWh/customer/class:  
13 kW/customer/class to the forecast kWh/customer/class. Application of  
14 historical COS results to Rate Year data yields an expected ROR on rate  
15 base by customer class, given currently-effective rates. A comparison of  
16 class ROR to the system average ROR will indicate which rates need to  
17 be adjusted in order to improve the system average ROR and/or reduce  
18 interclass subsidies.

19 Q. How many service classes and subclasses do the Company's studies  
20 address?

21 A. The electric department COS studies address twelve subclasses: SC1-  
22 residential general/non-heating; SC1-residential heating; SC6-residential  
23 time-of-use; SC2-small general service non-demand metered; SC2-small

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1 general service secondary demand metered; SC2-small general service  
2 primary demand metered; SC3-large general primary; SC13-large general  
3 substation; SC13-large general transmission; SC5-area lighting; SC8-  
4 street lighting; and SC9-traffic signals.

5 The gas department COS studies address nine subclasses: SC1-  
6 residential heating; SC1-residential non-heating; SC2-  
7 commercial/industrial heating; SC2-commercial/industrial non-heating;  
8 SC8 & 9-interruptible; SC11d1m-firm distribution large mains;  
9 Interdepartmental (Central Hudson's own use of gas); SC11t-firm  
10 transmission, including electric generators; and SC11d-firm distribution.

11 Q. With respect to the specific process, how did the Company classify  
12 production plant in the Electric COS studies?

13 A. Consistent with the October 25, 2001 Order Establishing Rates in Case  
14 00-E-1273, hydroelectric production plant was classified energy-related  
15 and combustion turbines were classified demand-related.

16 Q. Have you made any noteworthy changes to the manner in which the  
17 Company functionalized, classified or allocated items as compared to the  
18 approach filed by the Company in Cases 14-E-0318 and 14-G-0319?

19 A. Yes, consistent with the Commission's May 20, 2016 Order Adopting Low  
20 Income Program Modifications and Directing Utility Filings in Case 14-M-  
21 0565, low-income program costs were allocated to each service class in  
22 proportion to its contribution to embedded cost of service transmission and  
23 distribution delivery revenue requirement, rather than to the residential

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1 classes only. Additionally, the residual portion of electric transmission  
2 substation plant that was not directly allocated to specific customers was  
3 allocated to each service class based on the portion of each class' load  
4 that was not associated with a direct allocation.

5 Q. How were gas mains addressed in the historical and pro forma COS  
6 studies?

7 A. Gas main costs were classified on the basis of 65% demand and 35%  
8 customer as prescribed by the Commission in its Order Adopting  
9 Recommended Decision with Modifications issued on June 22, 2009 in  
10 Case 08-G-0888. Gas mains of less than six inches in diameter were  
11 allocated to customers other than the SC11dlm-firm distribution large  
12 mains class and the SC11t-firm transmission class.

13 Q. Earlier in the Panel's testimony, the Panel made reference to unbundled  
14 functions and the Commission's actions in Case 00-M-0540. Please  
15 describe the requirements for, and the results of, unbundling based on this  
16 proceeding.

17 A. The Unbundling Track of Case 00-M-0504 required Central Hudson (as  
18 well as all other impacted companies) to file fully allocated embedded  
19 COS studies with unbundled rates based on those studies. In compliance,  
20 the Company filed such studies in Cases 05-E-0934 and 05-G-0935 which  
21 led to the implementation of unbundled Merchant Function Charges  
22 ("MFCs") which were continued through Cases 08-E-0887 and 08-G-0888.

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1 The MFCs that currently appear on customers' bills reflect revisions to the  
2 MFC methodology that were adopted in Cases 09-E-0588 and 09-G-0589.

3 Q. Please describe the current MFC cost allocation methodology.

4 A. Currently, the MFC Admin includes commodity-related credit and  
5 collections costs and 50% of commodity-related Call Center costs, plus  
6 any associated administrative and general ("A&G") expenses and rate  
7 base items. The MFC Supply includes commodity procurement costs for  
8 the acquisition of commodity for full service customers, 50% of  
9 commodity-related Call Center costs, plus any associated A&G and rate  
10 base items.

11 Q. Is the Company proposing any changes to the MFC methodology in this  
12 proceeding?

13 A. No.

14 Q. Are the COS studies that the Panel is sponsoring fully unbundled?

15 A. Yes. The electric and gas embedded COS studies prepared for this rate  
16 case identify the revenue requirements for bundled and unbundled  
17 components. Cost-based potential MFCs for customers taking commodity  
18 service from an Energy Services Company ("ESCO") have been updated  
19 and are shown in Exhibit \_\_ (COSP-1) Schedule C for electric customers  
20 and Exhibit \_\_ (COSP-2) Schedule C for gas customers.

21 Q. How many cost components has the Company unbundled?

22 A. Central Hudson unbundled three cost components for the gas department  
23 and six for the electric department.

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1 Q. Would the Panel please identify each of the unbundled components and  
2 explain the different number of unbundled functions for gas and electric?

3 A. The unbundled components common to both gas and electric departments  
4 include: MFC Admin; MFC Supply; and bill printing, mailing and receipt  
5 services (“BPRS”). The unbundled components unique to the electric  
6 department include meter ownership, meter services and meter data  
7 services pursuant to the Commission’s provision of competitive metering  
8 for certain electric customers.

9 Q. Would you please identify the kinds of costs that are included in the  
10 revenue requirement for each of the unbundled components?

11 A. As previously noted, MFC Admin includes commodity-related credit and  
12 collections costs and commodity-related Call Center costs, plus any  
13 associated A&G and rate base items. These costs are generally included  
14 in PSC accounts 903, 905, 908 and 910.

15 The costs allocated to MFC Supply, which include commodity  
16 procurement costs for the acquisition of commodity for full service  
17 customers, commodity-related Call Center costs, plus any associated  
18 A&G and rate base items are generally included in PSC accounts 903,  
19 904, 905, 908, 910, 912, and 920 through 935.

20 The BPRS revenue requirements and unbundled costs include  
21 labor and expenses attributable to the cash processing and customer  
22 accounting departments, the annual charges of the vendor currently  
23 contracted by Central Hudson to print and mail bills plus allocated shares

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1 of Call Center costs and shares of expenses booked to PSC accounts  
2 905, 908 and 920 through 935.

3 Regarding the unbundled components unique to the electric  
4 department, meter ownership reflects the service class average meter  
5 cost and average initial installation costs for non-demand meters but only  
6 the class average meter cost for demand metered customers.

7 Additionally, meter services reflect the class average avoidable  
8 maintenance expense per meter and meter data services reflect the class  
9 average meter reading cost.

10 Q. Please briefly describe the methods used to assign labor and expenses to  
11 each of the unbundled functions.

12 A. The analysis began with the compilation of year 2015 labor expenses (by  
13 internal area and function number) as recorded in each PSC account  
14 greater than or equal to 900.00, which included approximately 400  
15 function numbers in the electric department and 300 in the gas  
16 department. Most areas within Central Hudson use 900 series accounts  
17 only for overhead-type functions (e.g., general office salaries). As a result,  
18 these labor expenses were temporarily functionalized as PTDC-related for  
19 later functionalization on labor sub-total across all functions. Several  
20 areas, however, use 900 series accounts to record virtually all expenses.  
21 Labor and expenses in each of these areas were examined in detail and  
22 unbundled if meeting any of the criteria set forth above.

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1           Briefly, all labor and expenses booked to account 902, meter  
2           reading, were unbundled for the electric department but left bundled with  
3           customer accounts expenses for the gas department pursuant to the  
4           Commission's mandate on competitive metering for electric service as  
5           previously noted.

6           Expenses booked to PSC account 904, uncollectibles, were split  
7           proportionately between commodity-related bad debt and delivery service-  
8           related bad debt, with the former allocation included in the MFC Supply  
9           and the latter allocation left bundled with customer accounts expenses.

10          Credit and collections costs booked to PSC account 903 were split  
11          similar to uncollectibles, with the split between commodity-related  
12          procurement and delivery-service-related expenses. Non-credit and  
13          collections costs booked to PSC account 903 by the Call Center were  
14          allocated to the various bundled and unbundled functions per surveys of  
15          call types from customers, with the remaining PSC account 903 costs  
16          examined in detail and unbundled if meeting any of the criteria previously  
17          discussed.

18          With the exception of bill printing and mailing costs, most labor and  
19          expenses booked to PSC account 905 were functionalized per the  
20          unbundled labor subtotal of PSC accounts 902 and 903.

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1           As previously discussed, commodity-related expenses booked to  
2           PSC accounts 903, 905 and 908 by the Call Center were split equally  
3           between MFC Admin and MFC Supply.

4   Q.   How would customers be able to avoid the unbundled costs that the Panel  
5           has described and shown in Schedule C of Exhibits \_\_ (COSP-1) and \_\_  
6           (COSP-2)?

7   A.   All customers that choose to purchase their commodity supply from an  
8           ESCO will avoid the MFC Supply charge. Customers receiving a separate  
9           bill for commodity supply from their ESCO, which is not participating in the  
10          Company’s consolidated bill program, will also avoid the MFC Admin  
11          charge. While customers purchasing their commodity supply from an  
12          ESCO participating in the Company’s consolidated bill program will not  
13          avoid the MFC Admin charge, they will receive a BPRS credit, which will  
14          be reimbursed to Central Hudson by the ESCO. Electric customers  
15          having measured demands in excess of 50 kW in two consecutive months  
16          are eligible to contract with a third party for all metering services and  
17          receive the associated credits.

18   Q.   Are any current retail access customers avoiding the full range of  
19          unbundled components?

20   A.   No, not at this time. Currently, we have no retail access customers who  
21          have chosen to have a single bill issued by the ESCO or eligible electric  
22          customers who have contracted with a third party for metering services.

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1 Q. Please briefly describe the information presented in Exhibit \_\_ (COSP-1)  
2 for the electric department and Exhibit \_\_ (COSP-2) for the gas  
3 department.

4 A. Both exhibits contain three schedules, with Schedule A (the historical year  
5 electric study) and Schedule B (the pro forma study) summarizing the  
6 rates of return for each department and showing the allocation of Rate  
7 Base, Revenues, Operating Expenses and resultant ROR by each  
8 customer rate classification.

9 The Index of Return, shown on Schedule B, indicates the relative  
10 degree of difference between the system total ROR and the ROR of each  
11 service class (100 signifies a ROR equal to the System ROR).

12 Schedule C shows the revenue required to produce the system  
13 average ROR of 6.99%, as proposed by the Finance Panel, from each  
14 service class (i.e., “levelized” revenue requirements), together with a  
15 potential rate structure for delivery service, including unbundled MFCs for  
16 MFC Admin (also referred to in the Company’s tariff as MFCA) and Supply  
17 (also referred to in the Company’s tariff as MFCB) for each rate class, as  
18 well as potential credits for each of the unbundled components.

19 Q. Are there any differences between the 2015 historical COS studies and  
20 the Rate Year studies shown on Schedule A and Schedule B,  
21 respectively?

22 A. Yes. In addition to delivery service rate base, revenues and expenses,  
23 the historical studies include rate base, revenues and expenses

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1 associated with commodity purchases of electricity and gas and  
2 surcharges related to the System Benefits Charge, the Renewable  
3 Portfolio Standards Charge (electric only), the Energy Efficiency Portfolio  
4 Standards Charge and the temporary surcharge implemented under  
5 Public Service Law §18-a(6). In contrast, the Rate Year studies contain  
6 neither fuel-related or procurement-related expenses nor the  
7 aforementioned surcharges.

8 Q. Has the Company attempted to address these differences?

9 A. Yes. The Company has prepared two hypothetical historic embedded  
10 COS studies, which are summarized in Exhibit \_\_ (COSP-3), in an attempt  
11 to exclude the impacts of the aforementioned commodity-related  
12 expenses and surcharges. However, preparation of these studies  
13 required that a number of judgments be made regarding the identification  
14 and separation of revenues, certain expense items including federal and  
15 state income tax, and adjustments to rate base. As a result, system totals  
16 for these studies cannot be verified to the Company's Annual Report to  
17 the PSC for the year ended December 31, 2015.

18 Q. Was any portion of these studies utilized in any way in the development of  
19 the pro forma COS studies?

20 A. Yes. Rate Year expense allocations are generally developed by applying  
21 the historical ratios developed in the historical COS to Rate Year expense  
22 data. In order to more accurately reflect the absence of fuel-related or  
23 procurement-related expenses and the aforementioned surcharges from

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1 the Rate Year revenue requirement, the expense allocation ratios  
2 developed in the hypothetical COS studies were utilized in the Rate Year  
3 pro forma COS studies. Additionally, the Forecasting and Rates Panel  
4 utilizes the service class specific rate of return results from each of the  
5 three studies during the revenue allocation process

6 Q. Please summarize the results of the COS studies.

7 A. The results of the 2015 electric COS study reveal indexes below the  
8 system average ROR of 6.42% for the SC 1 Non-Heat, SC 2 Non-  
9 Demand, SC 5 Area Lighting and both SC 13 classes. The results of the  
10 pro forma study indicate indexes below the system average ROR of  
11 3.03% for the SC 1 Heat, SC 6 TOU, SC 2 Secondary, SC 2 and SC 3  
12 Primary, and the SC 9 Traffic Signal classes. The results for each class  
13 within each study are summarized in Table 1 below.

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Table 1: Electric Indexed Rate of Return

Electric Indexed Rate of Return			
		Delivery	
	2015	Only	Pro Forma
SC1 Non-Heat	100	75	104
SC1 Heat	176	186	17
SC6 TOU	218	243	17
SC 2 Non Demand	4	(13)	173
SC 2 Secondary	108	143	115
SC 2 Primary	270	477	(107)
SC3 Primary	235	378	(89)
SC 13 Substation	(36)	45	166
SC 13 Transmission	(138)	170	118
SC 5 Area Lighting	5	(17)	128
SC 8 Street Lighting	198	42	167
SC 9 Traffic Signals	197	168	(12)

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The results of the 2015 gas COS study reveal indexes below the system average ROR of 6.20% for all classes except the SC 11 Transmission class. The results of the pro forma study indicate indexes below the system average of 3.44% for the SC 1 & 12 Heat, SC 2, 6 & 13 Non-Heat and SC 11 Transmission subclasses. The results for each class within each study are summarized in Table 2 below.

Table 2: Gas Indexed Rate of Return

Gas Indexed Rate of Return			
		Delivery	
	2015	Only	Pro Forma
SC 1 & 12 Heat	76	101	84
SC 1 & 12 Non-Heat	(17)	(57)	136
SC 2, 6 & 13 Heat	72	75	121
SC 2, 6 & 13 Non-Heat	69	70	54
SC 11 DLM	61	(14)	134
SC11 Transmission	604	324	82
SC11 Distribution	89	(16)	143

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**IV. MARGINAL COS STUDIES**

Q. What is the primary purpose of the marginal COS studies?

A. The marginal COS studies submitted herein have been utilized by the Forecasting and Rates Panel to revise the Excelsior Jobs Program (“EJP”) rates pursuant to the Commission’s ongoing implementation of the EJP in Case 11-M-0542 and to revise the contract demand charge included in SC 10, the Company’s buyback service classification. Additionally, the gas marginal COS study has been utilized to address the Company’s Comments and Responses to January 19, 2017 Staff Initial Findings Report and Additional Questions submitted May 3, 2017 in Case 17-G-0011 (“May 3 Response”), as discussed more fully below.

Q. What is the definition of marginal cost?

A. Since Central Hudson no longer owns significant electric generation or any gas production facilities, marginal cost for the Company is defined as the cost incurred to transmit and distribute an additional unit of electricity or gas.

Q. Please discuss the preparation of marginal cost of service studies.

A. Generally, we identified marginal transmission, distribution and customer costs. Transmission and demand-related distribution costs so identified were compiled into a marginal volumetric unit rate while the customer-related distribution and customer costs identified were compiled into a marginal rate per customer.

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1 Estimation of the marginal volumetric rate included identification of  
2 the projected capital costs resulting from increased throughput due to  
3 increased sales, including increased sales from existing customers as well  
4 as increased sales from the connection of new customers. We then  
5 developed an economic carrying charge rate to be applied to the identified  
6 capital costs to calculate the annual carrying cost on the plant investment.  
7 Next, we estimated the marginal annual O&M expense associated with the  
8 additional plant investment. In the final step, we recognized the marginal  
9 effect on working capital.

10 Estimation of the marginal customer cost included the calculation of  
11 the economic carrying charge cost, marginal annual O&M expense and  
12 marginal effect on working capital of the customer portion of the projected  
13 marginal capital costs identified during development of the marginal  
14 volumetric rate. The estimated marginal customer rate also includes other  
15 customer related expenses not directly attributable to plant investment.

16 Q. Please explain how the projected capital costs resulting from increased  
17 throughput due to increased sales were identified.

18 A. We analyzed the five year capital program forecast for calendar years  
19 2018 through 2022 sponsored by Company Witness Haering to identify  
20 the projected capital investment associated with increased throughput due  
21 to increased sales. As Mr. Haering notes in his testimony, a significant  
22 portion of the electric capital program forecast is related to infrastructure  
23 replacements rather than growth due to the sustained economic downturn

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1 and lower load and customer growth forecasts. In contrast, the gas capital  
2 program forecast continues to include forecast expenditures attributable to  
3 traditional new business activities as well as the targeted customer  
4 addition program which is more fully discussed in the testimony of the  
5 Business Development Panel. As a result, we utilized the aforementioned  
6 gas capital forecast in the development of the gas marginal costs, but  
7 utilized a combination of the Company's Transmission Service Charge  
8 ("TSC") and historic distribution investment in the estimation of the electric  
9 marginal costs.

10 Q. Why did the Panel utilize the TSC and historic data in the estimation of the  
11 electric marginal costs?

12 A. The dearth of anticipated electric customer and load growth as indicated  
13 on Exhibit \_\_ (FRP-2) sponsored by the Forecasting and Rates Panel, and  
14 associated capital expenditures as previously noted, required a different  
15 approach. Under that approach, inflation-adjusted actual cumulative  
16 distribution plant expenditures were correlated to either normalized peak  
17 load or number of customers, depending on whether the plant was  
18 identified as demand or customer related, with the resulting coefficient in  
19 the equation utilized as the marginal estimate. With respect to the TSC,  
20 since Central Hudson is subject to the rules of the New York Independent  
21 System Operator, the Company's transmission revenue requirement is the  
22 basis for the Company's TSC. Entities, including Central Hudson, utilizing  
23 the Company's transmission system must pay the TSC, although no

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1 explicit payment is made by the Company. As a result, the TSC is the  
2 Company's marginal transmission cost. Since a forecast of the TSC is not  
3 available, the Company based the marginal transmission cost on a 12  
4 month average of the TSC adjusted by energy loss factors.

5 Q. Please explain how the economic carrying charge rate was developed.

6 A. A projection of the annual revenue requirements associated with the plant  
7 investment was made for the life of the investment, including depreciation,  
8 return (using the incremental cost of capital), income taxes, property taxes  
9 and property insurance. The present-worth of the stream of annual  
10 revenue requirements was then adjusted to produce a levelized cost in  
11 inflation-adjusted terms.

12 Q. Did you consider individual marginal O&M cost components?

13 A. Yes. We utilized an embedded methodology for O&M elements, which,  
14 according to the National Association of Regulatory Utility Commissioners,  
15 is a common and reasonable approach for these components, rather than  
16 a strict marginal method. We functionalized historic O&M costs by  
17 function for 2012 through 2016 using the results from the pro forma COS  
18 studies, and grouped into demand-related distribution and several  
19 customer-related categories.

20 Q. How was A&G expense addressed?

21 A. A&G expense was addressed through the development and application of  
22 loaders, or adders, representing a historic average of inflation adjusted  
23 A&G expense to plant and/or O&M.

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1 Q. Were marginal cost estimates developed for all O&M and A&G expense  
2 components?

3 A. No. O&M and A&G recovered through the separate Merchant Function  
4 Charge Administrative and Supply charges were excluded. We also  
5 excluded energy efficiency costs (including System Benefits Charge,  
6 Clean Energy Fund, Energy Efficiency Portfolio Standard and Renewable  
7 Portfolio costs) and the temporary Public Service Law Section 18-a  
8 assessment which are recovered through surcharges. The Panel also  
9 excluded low-income program costs and economic development costs  
10 which we felt did not meet the definition of marginal for study purposes.

11 Q. Please explain the Panel's inclusion of a working capital component in the  
12 marginal COS.

13 A. The working capital component reflects the revenue requirement for  
14 materials and supplies inventory, certain prepayments and indirect costs  
15 associated with a working capital cash allowance for O&M and A&G  
16 expenses, all of which would be reflected in the Company's rate base.  
17 This is further discussed in the testimony of the Revenue Requirements  
18 Panel.

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1 Q. Has the Panel compared the results of the marginal COS studies to the  
2 delivery rates developed in the embedded COS studies submitted in these  
3 proceedings and to the delivery rates proposed by the Forecast and Rates  
4 Panel?

5 A. We have compared the results of the marginal COS studies to the  
6 embedded COS studies but not to the delivery rates proposed by the  
7 Forecast and Rates Panel. The Company followed this approach as these  
8 proposed delivery rates reflect reallocation of the revenue requirement  
9 among service classifications based on the revenue allocation process  
10 applied by the Forecast and Rates Panel. The aforementioned  
11 comparison is presented on Exhibit \_\_ (COSP-6) and indicates that the  
12 marginal cost is lower for electric SC 2 – Secondary Demand and both SC  
13 13 subclasses, while electric SC 2 and 3 primary classes, and both SC 13  
14 subclasses show lower marginal customer rates. The marginal costs for  
15 gas, both customer and volumetric, are higher than the corresponding  
16 embedded cost for both residential and non-residential service classes.

17 Q. Why are the marginal rates generally higher than the embedded rates?

18 A. Generally, this is the function of higher per unit cost of new investment as  
19 compared to lower embedded cost of existing investment. For instance,  
20 the majority of the marginal gas investment is attributable to distribution  
21 mains, PSC account 376, and distribution services, PSC account 380.  
22 The average lives of the existing plant balances, as reflected in the  
23 embedded COS study based on rates effective in Case 14-G-0319, are

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1 approximately 95 years and 80 years, respectively. As a result, the  
2 average embedded cost tends to be significantly lower.

3 Q. Please discuss the aforementioned utilization of the marginal COS studies  
4 with respect to Case 17-G-0011.

5 A. In its May 3 Response, the Company proposed to update its analysis of  
6 marginal costs to serve electric generators utilizing a methodology more  
7 closely related to the methodology originally utilized in Case 98-G-0122  
8 wherein the currently effective SC 14 rates were originally determined. As  
9 the Company indicated in its May 3 Response, the marginal COS studies  
10 employ an engineering approach wherein the marginal transmission,  
11 distribution and customer costs are identified, with the transmission and  
12 demand-related distribution costs compiled into a marginal volumetric unit  
13 rate. While this methodology provides an estimated system marginal cost,  
14 based on the growth assumptions contained in the sales forecast and  
15 capital projections, this estimate is more closely linked with the marginal  
16 cost to serve firm retail customers rather than electric generation.

17 Q. How did the Panel modify the current COS methodology to address  
18 electric generation?

19 A. Based on the transmission level at which these generators are served and  
20 the lack of projected transmission growth, the Panel developed an  
21 embedded analysis wherein the historic relationship of total transmission  
22 investments to load growth, including concomitant costs, was developed  
23 over a period of time. The resulting annual system demand-related

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1 marginal cost per Maximum Daily Quantity (“MDQ”) was multiplied by the  
2 projected system MDQ to yield an annual system demand related revenue  
3 requirement, which was divided by projected annual sales to yield an  
4 annual system related marginal cost on a volumetric basis. This  
5 volumetric rate, which is based on a system load factor of approximately  
6 33.3%, was adjusted to reflect a higher load factor of approximately 70%  
7 as originally deemed representative of electric generators in Case 98-G-  
8 0122. This adjustment yielded a marginal rate of \$0.0507 per Ccf as  
9 compared to the SC 14 Marginal System Costs Component of \$0.017 per  
10 Ccf that was originally effective August 31, 1999.

11 **V. ELECTRIC LOSS FACTOR**

12 Q. How are electric losses determined?

13 A. Electric losses are determined as the difference between the total  
14 electricity received into the system and the total metered electricity  
15 delivered to customers divided by the total electricity received. The  
16 electric loss factor is utilized to determine the factor of adjustment (“FOA”)  
17 which is calculated as one divided by one minus the loss factor  
18 percentage.

19 Q. What method is being used currently to determine the electric FOA for  
20 Central Hudson?

21 A. Pursuant to the methodology established by the Commission in its June  
22 18, 2010 Order Establishing Rate Plan in Case 09-E-0588, and continued

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1 by the Commission's June 17, 2015 Order Approving Rate Plan in Case  
2 14-E-0318, the system FOA is determined as the most recent 36 month  
3 average based on the data available at the time of compliance, allocated  
4 to service and/or sub-class based on the methodology initially approved in  
5 the June 22, 2009 Order Adopting Recommended Decision with  
6 Modifications in Case 08-E-0887.

7 Q. Is the Company proposing to revise the electric FOA?

8 A. Yes. Currently, the system factor of adjustment is 1.0236 based on the 36  
9 month average ending May 31, 2015. The Company proposes to utilize a  
10 system factor of adjustment of 1.0255 based on the 36 months ended  
11 June 30, 2017 resulting in the service class/sub-class factors of  
12 adjustment provided in Table 3 below.

13 Table 3: Electric Factor of Adjustment

<b>Electric Factor of Adjustment</b>		
<b><u>Service Class</u></b>	<b><u>Current</u></b>	<b><u>Proposed</u></b>
<b>1</b>	1.0285	1.0303
<b>2ND</b>	1.0285	1.0303
<b>2SD</b>	1.0285	1.0303
<b>2PD</b>	1.0173	1.0184
<b>3</b>	1.0173	1.0184
<b>6</b>	1.0285	1.0303
<b>13S</b>	1.0101	1.0108
<b>13T</b>	1.0065	1.0069
<b>9</b>	1.0285	1.0303
<b>5</b>	1.0285	1.0303
<b>8</b>	1.0285	1.0303

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**VI. GAS LOST AND UNACCOUNTED FOR**

- Q. What is gas Lost and Unaccounted For (“LAUF”)?
- A. Gas LAUF is measured as the difference between the total gas received into the system and the total metered gas delivered to customers divided by the total gas received. The LAUF is utilized to determine the FOA which is calculated as one divided by one minus the LAUF percentage.
- Q. What method is being used currently to determine the FOA for Central Hudson?
- A. Pursuant to the Commission’s June 17, 2015 Order Approving Rate Plan in Case 14-G-0319, the FOA is calculated as a five-year average for the 12 months ending August 31st of each year and updated annually to be applicable to the period November 1 to October 31. Annual negative values are set to zero when calculating the five-year average. The currently effective FOA is 1.0070.
- Q. How is performance against the FOA determined?
- A. Actual performance against the FOA is determined utilizing a dead band of two standard deviations, limited to  $\pm 0.5\%$ , with the minimum for the bottom of the dead band set at 1.0000.
- Q. Is the Company proposing to revise the FOA or the FOA methodology?
- A. The Company proposes to maintain the currently approved methodology which revises the FOA annually, but proposes to revise the effective date from November 1 to the first billing batch of November.

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1 Q. Does this conclude your direct testimony at this time?

2 A. Yes.