STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

EnergyNorth Natural Gas, Inc. d/b/a National Grid NH
Docket DG 10-017

Direct Testimony
of
Paul M. Normand

February 26, 2010

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List of Attachments

I. INTRODUCTION

Q. Please state your name, position and business address.

A. My name is Paul M. Normand. I am a principal with the firm of Management Applications Consulting, Inc. ("MAC"). MAC's headquarters is located at 1103 Rocky Drive, Suite 201, Reading, Pennsylvania 19609.

Q. Please state your qualifications.

A. My qualifications are provided in Attachment PMN-1.

Q. Please summarize your testimony.

A. My testimony will discuss the accounting and marginal cost of service studies that were performed by MAC that are used as the basis for the rates proposed in the filing by EnergyNorth Natural Gas, Inc. d/b/a National Grid NH ("Company" or "National Grid NH") in this proceeding. The accounting cost of service study functionalizes the Company's revenue requirement into delivery, production, direct gas costs, and indirect gas cost functions. The marginal cost study provides the basis for determining the level of revenues to be recovered from each class of service as well as component costs that are used to design rates. I also sponsor and support the development of indirect gas costs that are included along with direct, or conventional, gas costs for recovery in the Cost of Gas clause ("COG"). The indirect gas costs, consisting of bad debt expense, local production costs, gas working capital and miscellaneous gas supply related costs which are recovered by means of the COG are not included for purposes of determining the Company's proposed base rates. I am also responsible for the development of class revenue requirements using the results of the marginal cost study. The marginal cost study identifies the changes in costs associated with changes in the number of customers, level of sales, and capacity requirements placed on National Grid NH's gas delivery system. Finally, I am responsible for determining the levels of revenue to be recovered from each rate class and the design of delivery rates for each customer class.

Q. Please outline the organization of your testimony and schedules.

A. My testimony consists of four sections beyond this one. Each section discusses the various cost and rate studies and analyses conducted as a part of this filing and is supported by attachments displaying a summary of the study results as well as key data employed in the calculations. These attachments are numbered PMN-2 though PMN-5. Attachment PMN-1 details my qualifications and experience.

Attachment PMN-2 is described in the second section of my testimony. This schedule contains the fully allocated accounting cost of service study detailing the costs to serve the functional activities of the utility for delivery, gas supply, direct gas costs, and indirect gas costs. I summarize the methods employed to create the cost study, the fundamental cost data included and the interpretation of the cost study's results. The indirect cost analysis provided in Attachment PMN-2-2 is employed to determine the level of indirect gas costs to include in the cost of gas adjustment clause.

The third section of my testimony summarizes the calculations incorporated into the Company's marginal cost of service study and presents its results as Attachment PMN-3. The marginal cost to serve each class provides the basic measure of each class's proportionate share of the total costs to serve. Furthermore, the marginal cost study provides a guide to the development of the facilities charges included in the proposed rates.

The fourth section of my testimony relates to rate design. In this section, I employ the marginal cost study's results, after making an equi-proportional adjustment to class marginal costs to reconcile with National Grid NH's delivery service revenue requirements. The detailed rate design calculations are also included in Attachment PMN-4 of my direct testimony.

Finally, in Attachment PMN-5 I present a detailed explanation some of the more technical aspects of the accounting and marginal cost studies.

II. <u>ACCOUNTING COST OF SERVICE STUDY</u>

Q. Would you briefly define an accounting cost of service study?

A. An accounting cost of service study may also be referred to as an "allocated" cost of service study, a "class" cost of service study or an "embedded" cost of service study. Regardless of the name, these studies all provide the same information – they divide, allocate or assign allowed revenue requirements as defined under conventional rate of return accounting to either cost functions or to individual customer classes. The costs to serve the customers of any utility company generally consist of operating expenses and return. For a historical test period, these costs have been recorded on the books and records of the utility and the overall cost to serve the collective customers of that company may be readily established. On the other hand, the costs to serve individual functions or classes of service are not directly recorded and, thus, must be derived by means of cost allocations. The purpose of an allocated cost of service study is to assign or allocate each relevant component of cost on an appropriate basis in order to determine the proper total cost to serve the respective functions or classes. The accounting cost of service study presented here, however, is not used to allocate costs to individual rate classes. That purpose is served by the marginal cost study described below. The accounting cost study presented here creates a cost matrix that enables the Commission to determine the detailed costs of the delivery function, the production/supply function, direct gas costs, and indirect gas costs.

Accounting Cost of Service Study - Summary of Costs by Function

Q. How does the Company's accounting cost of service study relate to the development of the unbundled cost to serve the gas supply, transportation, and distribution functions?

A. The Company's functional cost of service is presented in Attachment PMN-2-1. The accounting cost study's vertical column shows the details of the rate base and expense items that determine total cost to serve. The horizontal dimension refers to functional categories, showing how each cost is allocated to each function. For example, metering investment was determined to be related to the delivery service function alone, and not to the gas supply function. As a result, the meter allocator was defined as 100% distribution customer-related. While many of the allocators used in the cost study were assigned directly to one function or another, other allocators were developed internally in the cost study, and result in allocations to more than one functional cost category. For example, some cost items were allocated on the computed value of rate base. Net plant and rate base consists of investments in liquid propane ("LP") and liquefied natural gas ("LNG") facilities, which are primarily gas supply related, and other investments that are primarily delivery service related, such as mains, services and meters. As a result, items allocated based on plant or rate base, such as deferred taxes or property taxes, reflect both a gas supply and delivery service component to their cost to serve.

Q. Have you prepared any unbundled costs within the allocated cost of service study as part of your efforts to analyze the Company's overall costs?

A. Yes. Following standard cost allocation procedures, Attachment PMN-2-1 details unbundled cost of service results for two functions, delivery costs and production costs. Production costs are further segregated between direct gas costs and indirect gas costs. In addition, Attachment PMN-2-1 provides the detailed allocations on an account by account basis, using the same methods employed in the Company's unbundling proceeding, Docket No. DG 00-063, Cost of Gas Filing, Docket No. DG 06-121 and Docket No. DG 08-009.

Q. How do you determine the gas supply and delivery service-related costs from the unbundled cost of service study results you have presented?

A. The delivery service costs consist solely of the distribution capacity costs and the distribution customer costs. The remaining costs are gas supply related production capacity or commodity costs. The delivery service functional costs specifically exclude direct and indirect gas costs.

<u>Indirect Gas Costs</u>

Q. What are indirect gas costs?

A. Indirect gas costs are those costs associated with supplying the gas commodity that are not included in the category of "direct" gas costs. Indirect gas costs consist primarily of the revenue requirements associated with the investment and operating expense for local manufactured gas facilities such as LP-air and liquefied natural gas facilities, bad debt expense related to the supply function, working capital related to the supply function, and other miscellaneous operations and maintenance expenses including gas acquisition (i.e., the contracting function), dispatching and administrative and general expenses relating to the supply function but not included in "direct" gas costs.

Q. How are these functionalized costs used in the rate design process?

A. The primary purpose of the functional cost study is to segregate revenue requirements between delivery service and gas supply revenue requirements and to simultaneously identify direct and indirect gas costs. These results are shown by function on Attachment PMN-2-1. The details of indirect gas costs necessary to update the COG are summarized on Attachment PMN-2-3.

Q. How are indirect gas costs recovered?

A. Indirect gas costs are recovered through the Company's COG.

Q. Please describe in more detail the costs that are included in the indirect gas cost function.

A. I have prepared Attachment PMN-2-2 to segregate indirect gas costs into four categories:

1. LP and LNG Costs
2. Miscellaneous Production Costs
3. Bad Debt Costs and
4. Working Capital.

A major portion of LP-air and LNG-related costs are incurred to provide gas supplies on extremely cold days and are assigned to the gas supply function in the cost studies we performed. The remainder of the LP-air and LNG-related costs are incurred to provide support to the distribution system and are assigned to the distribution function in the cost studies.

Operations and maintenance expenses associated with the gas acquisition and dispatching costs, services that are provided within the Gas Supply department, were unbundled and segregated between gas supply and delivery service. Consequently, the Company's functional cost study implicitly removes the gas supply related costs from the delivery service revenue requirement.

In an unbundled cost of service study, the uncollectible accounts expense is segregated between delivery service and gas supply functions on the basis of revenue requirements. In other words, if gas supply costs make up 50% of the cost to serve, then 50% of the Company's net write-offs are also considered gas supply-related. In the past, the Company determined the fixed gas cost-related bad debt percentage by dividing the gas supply-related bad debt by the total gas costs and applied this percentage to the actual experienced gas costs to determine total gas cost-related bad debt to be recovered through the Company's COG mechanism. However, in this filing the Company is proposing a fully reconciling commodity-related bad debt mechanism and therefore commodity-related bad debt will not be determined using a fixed percentage of gas costs.

Finally, the proposed functionalized study assigns a portion of overhead costs, including general plant costs and administrative and general expenses, to the gas supply function through the selection of internally developed allocators. For example, the labor allocator includes the labor associated with peaking plant operations and maintenance expenses. Consequently, revenue requirements such as those stemming from general plant, that are allocated on the basis of labor will include an assignment of costs to the gas supply function.

III. MARGINAL COST STUDY

Overview of Marginal Cost Study

Q. Please summarize the objectives of a marginal cost study.

A. The marginal cost study is provided in Attachment PMN-3. A marginal cost study provides an estimate of the additional cost of providing an additional unit of service. These cost estimates are utilized as a benchmark or reference in setting rates to the extent allowed by considerations of rate continuity, intra-class equity, and customer impact. The use of marginal costs in ratemaking tends to result in a level and pattern of prices that promotes economically rational consumption decisions, and thereby promotes an efficient allocation of society's resources. Sending customers accurate price signals regarding the costs that will result from their consumption decisions furthers efficiency. Customers, in turn, will be able to make informed decisions on their use of utility service.

Q. How is a marginal cost study used in the rate design process?

A. Following the precedent established by the New Hampshire Public Utilities Commission in DG 00-063, the marginal cost study is used to establish revenue levels and prices for each rate class on the basis of marginal costs, adjusted using the Equi-Proportional Method ("EPM") to recover the allowed revenue requirements. The proposed total system delivery service revenue requirements are established at the adjusted test year levels. Delivery service marginal costs by class (which differ from the revenue requirement) are then adjusted to match the delivery system total revenue requirements on a pro-rata basis using the EPM. The resulting scaled marginal costs by class and cost component become the theoretical targets for the design of delivery service rates.

Q. Please summarize the different elements of a marginal cost study.

A. A typical marginal cost estimate contains several components. The marginal commodity cost component is intended to reflect the short run variable cost of varying the Company's level of gas sendout by one unit, assuming the Company's production capacity is held constant. The short run marginal cost is, therefore, the cost of gas (plus indirect costs). The marginal production capacity cost component is intended to reflect the long-run cost, on a unitized basis, of expanding the Company's production facilities to meet an increase in customers' requirements for gas service. The marginal transmission and distribution component is intended to reflect the unitized cost, based on historical data and recent trends, of expanding the local distribution network to accommodate growth in the number of customers and their requirements.

Q. Could you provide an overview of the methodology you employed?

A. Yes. My methods are essentially unchanged from the marginal cost study filed in Docket No. DG 08-009. I have computed the marginal costs to serve each of National Grid NH's rate classes based on test year costs. I employed the Company's supply plan alternatives to estimate production capacity costs. I have used regression and engineering techniques to estimate the hypothetical distribution costs of serving an increment of customer load, including the unit costs of adding distribution plant facilities as well as the additional costs for O&M. These distribution capacity costs were measured in terms of dollars per design day decatherm. I have used engineering estimates to identify the investment in services and meters and added O&M expenses necessary to serve a new customer. From these factors, I have developed the annual revenue requirements to serve each of National Grid NH's rate classes. These costs are stated in terms of customer, commodity and facilities charges. A discussion of methods I employed in the marginal cost study is described in Attachment PMN-5.

Q. What were the results of the marginal cost study?

A. Attachment PMN-3, Table 12, tabulates the long-run marginal costs to serve each customer class. In addition, the table on this page calculates the revenues that would be generated if the Company were to introduce full marginal cost-based pricing and if customers were to continue to consume as they have in the past. Attachment PMN-3, Table 13, provides marginal costs on a unit cost basis. Finally, Attachment PMN-3, Table 14, presents the EPM adjustment to restate marginal costs at a level that match the delivery service revenue requirements.

IV. <u>RATE DESIGN</u>

<u>Rate Design Information</u>

Q. Please describe your cost summary.

A. Attachment PMN-3, Table 14, combines information from the accounting and marginal cost studies and current revenue. The schedule derives the theoretical revenue target for each class and compares it with the proposed revenue requirements. Each component of each class's rates is scaled upward or downward so that the total revenues derived from all classes at the resulting rates will produce the overall system revenue requirement proposed by National Grid NH. These costs are then employed as the basis for designing rates subject to certain limitations of customer bill impact for the upper level of prices.

<u>Class Revenue Targets</u>

Q Please describe how you established class revenue targets.

A. My revenue target calculations are shown on Attachment PMN-4. This attachment, consisting of five sub-schedules was used both to establish class revenue targets and to design rates. Bill impact considerations for customers limited the maximum base rate increases so that no rate class received in excess of 125% of the system average increase. In other words, since the Company is seeking an overall delivery system increase of 23% (see Attachment PMN-4-3, page 2 of 5, line 38), the maximum amount any class's rates could be increased is 28.75% (i.e., 125% x 23%). The differences between the assigned revenue requirements and the maximum level of revenues allowed under the restriction described above were summed and then allocated on a pro-rata revenue basis to the classes whose rate increases were not affected by the limitation on the level of increase. If that redistribution of revenue resulted in any class exceeding its maximum allowed increase, the unrecovered revenue requirement for such classes were again allocated to the remaining classes unaffected by the rate caps. This process continued until the revenues produced from all classes summed to the proposed level of revenues. At that point, any classes with an indicated rate decrease were adjusted to have no change in revenues. The subsidy produced by raising these revenue targets was also allocated to the uncapped rate classes on a pro rata basis. These calculations are shown on Attachment PMN-4-2.

Q. Why did you select a revenue cap of 125%?

A. I have selected this rate cap based on several considerations. First and foremost, I considered bill impacts. Since this rate cap is being applied to the design of delivery rates and since delivery rates are normally much less than half the customer's total energy bill, the use of the 125% rate cap would not be likely to result in undue hardship to any rate class. Second, I examined the relative difference between costs to serve and current revenue levels. At the present time the residential rate classes provide slightly over half of the Company's delivery revenues but account for approximately two-thirds of its cost to serve. My experience in the industry suggests that the 125% cap is not unusual and has been found to be reasonable by other regulatory authorities. Finally, a continued gradual movement towards costs is essential to reduce existing interclass subsidies and improve efficient pricing for all customer classes.

Individual Rate Designs

Q. How did you approach the design of individual rates?

A. Once the revenue targets were established for each rate class, detailed rate design was conducted, as shown on Attachment PMN-4-2. The rate design process was guided by three general principles – moving rates toward the marginal costs to serve, providing some level of rate stability for customers by controlling bill impacts, and better aligning the rate structure with the Commission's and the Company's energy efficiency goals by moving more of the revenue recovery from the volumetric portion of the rates to the customer charge.

Marginal costs to serve include two types of cost – costs that vary with the number of customers and costs that vary with the design day demands of customers. In essence, the utility must construct a distribution system capable of handling the anticipated loads of customers under extreme weather conditions. These costs are incurred regardless of the actual weather occurring in the test period, and are also independent of the volumes consumed by customers throughout the test year. Therefore, it is more appropriate to recover these costs through a fixed charge, rather than a volumetric therm charge. The very bottom of Table 14 of the marginal cost study, Attachment PMN-3, shows the total marginal costs for each class expressed in terms of dollars per month per customer.

Q. How did you determine your proposed customer charges?

A. Using this general approach, the rate design process simply became a matter of raising customer charges to the limits imposed by rate stability and bill impact considerations. Most of the proposed customer charges were simply increased from their existing levels at the overall average system increase of 23%. Once the revenue targets were established for each rate class, detailed rate design was conducted, as shown on Attachment PMN-4-2.

Q. How did you design the therm rates for each rate class?

A. Having already established the marginal revenue targets for each class, I subtracted the revenues derived from the proposed customer charges to compute the remaining revenues to be recovered through the therm charges. Then I made a simple pro rata adjustment to the existing therm charges to achieve the desired revenues from each class. Note that the billing units used in the design of rates are stated in terms of dry therms.

Q. Have you provided a summary of the rates you designed?

A. Yes, a table summarizing the rates is provided on page 3 of Attachment PMN-4-3.

Q. Did you verify that the proposed rates match the delivery revenue requirements?

A. Yes, the proposed rates were multiplied by the appropriate weather normalized billing determinants to provide a revenue proof as shown on Attachment PMN-4-4.

Q. Have you analyzed the impact of the proposed rates on the customers within each rate class?

A. Yes, I have prepared typical bill impact analyses for each rate class, showing the impact on the customer as a function of monthly use. I've prepared these comparisons separately for the summer and winter seasons as shown on Attachment PMN-4-5. Each rate class is represented by two pages, the odd numbered pages show the bill impacts for the winter season and the even pages show the summer impacts. The monthly therm usage level is displayed vertically on these pages along the left side and the bill calculations are shown in columns both for the delivery service rate alone and in combination with gas supply charges and additional distribution charges stemming from the COG and LDAC, respectively. In addition to displaying the range of potential monthly usage, I have evaluated the distribution of monthly bills each season and shown the impact on customers located at the 25th, 50th and 75th percentile in terms of seasonal usage.

Q. For purposes of calculating the bill impacts resulting from the new rates proposed by the Company as shown on Attachment PMN-4-3, page 5 and Attachment PMN-4-5, what assumptions did you make regarding the gas cost portion of customers' bills?

A. For comparative purposes, the Company used the direct gas cost portion of the COG rates in effect for 2009 for the off peak period and the direct gas cost portion of the COG filing for 2009-10 using the settled NYMEX through February 2010 for the peak period. These direct gas costs were assumed to be the same for both the period covered by current rates and the period covered by the proposed rates. For the indirect gas cost portion of the proposed COG rates, the Company used the proposed indirect gas costs contained in Attachment PMN-2-3 for the period covered by the new rates. For the current COG rates, in order to be conservative, the Company used the last approved indirect gas costs.

Q. In your opinion, are the costs and rates employed in your analyses just and reasonable?

A. Yes, the costs and the proposed rates are just and reasonable. Further, the rates are not unduly discriminatory. Finally, the rates represent a careful balancing of the costs of providing gas delivery service with customer impact concerns.

Q. Does this conclude your testimony?

A. Yes, it does.

QUALIFICATIONS OF PAUL M. NORMAND

Q. Mr. Normand, what is your present position?

A. I am a principal in the consulting firm of Management Applications Consulting, Inc. (MAC), 1103 Rocky Drive, Suite 201, Reading, PA 19609. This company provides consulting services to the utility industry in such field as loss studies, econometric studies, cost analyses, rate design, expert testimony, and regulatory assistance.

Q. What is your educational background?

A. I graduated from Northeastern University in 1975, with a Bachelor of Science Degree and a Master of Science Degree in Electrical Engineering-Power System Analysis. I have attended various conferences and meeting concerning engineering and cost analysis.

Q. What is your professional background?

A. I was employed by the Massachusetts Electric Company in the Distribution Engineering Department while attending Northeastern University. My principal areas of assignment included new service, voltage conversions, and system planning. Upon graduation from Northeastern University, I joined Westinghouse Electric Corporation Nuclear Division in Pittsburgh, Pennsylvania. In that position, I assisted in the procurement and economic analysis of electrical/electronic control equipment for the nuclear reactor system.

In 1976, I joined Gilbert Associates as an Engineer providing consulting services in the rate and regulatory area to utility companies. I was promoted to Senior Engineer in 1977, Manager of the Austin office 1980, and Director of Rate Regulatory Service in 1981.

In June, 1983, I left Gilbert to form a separate consulting firm and I am now a principal and President of Management Applications Consulting, Inc. My principal areas of concentration have been in loss studies, economic analyses, and pricing.

Q. Have you testified in support of any cost studies that you participated in or performed?

A. Yes, I have testified about such studies before the following regulatory agencies: the Maine Public Utility Commission, the Public Utility Commission of Texas, Illinois Commerce Commission, New Hampshire Public Utilities Commission, New Jersey Board of Public Utilities, New York Public Service Commission, Pennsylvania Public Utility Commission, the Massachusetts Department of Public Utilities, the Kentucky Public Service Commission, the Arkansas Public Service Commission, the Public Service Commission of Louisiana, the Public Utilities Commission of Ohio, the Public Service Commission of Missouri, the Delaware Public Service Commission, the Maryland Public Service Commission, the Indiana Utility Regulatory Commission, the North Carolina Utilities Commission, the Kansas Corporation Commission, and the Federal Energy Regulatory Commission.

Q. Could you please briefly discuss your technical experience?

A. I have performed numerous accounting and marginal cost of service studies, time differentiated bundled and fully unbundled cost studies for both electric and gas utilities since 1980. I have also used such studies in the design and presentation of detailed rate proposals before regulatory agencies. My additional experience has been in the area of unaccounted for loss evaluations for electric and gas utilities for over twenty-four years. These studies include a detailed review of each system and the calculation of appropriate recovery factors.

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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	SUMMARY OF RESULTS PRESENT RATES						
	RATE BASE						
1	GAS PLANT IN SERVICE		318,438,523	302,064,466	16,374,057	0	16,374,057
2	LESS: DEPREC & AMORT RES		112,947,068	101,930,080	11,016,988	0	11,016,988
3	PLUS: CWIP		0	0	0	0	0
4	NET UTILITY PLANT IN SERVICE		205,491,455	200,134,386	5,357,069	0	5,357,069
	ADD:						
5	WORKING CAPITAL REQUIREMENTS		1,056,929	978,047	78,882	0	78,882
6	PREPAYMENTS		3,019	2,864	155	0	155
	DEDUCT:						
7	DEFERRED FUEL COSTS		0	0	0	0	0
8	DEFERRED DEMAND SIDE MGMNT COSTS		389,286	389,286	0	0	0
9	DEFERRED ENVIORMENTAL COSTS		45,316	45,316	0	0	0
10	UNAMORTIZED DEFERRED ASSETS - OTH		(2,757,128)	(2,615,357)	(141,771)	0	(141,771)
11	ACCUM DEFERRED INCOME TAX		39,867,830	37,817,833	2,049,997	0	2,049,997
12	RATE BASE		169,006,099	165,478,219	3,527,880	0	3,527,880
	DEVELOPMENT OF RETURN						
13	TOTAL SALES REVENUE		162,174,867	45,249,809	116,925,058	112,156,610	4,768,448
14	OTHER OPERATING REVENUE		2,184,705	1,356,684	828,021	0	828,021
15	TOTAL GAS OPERATING REV		164,359,572	46,606,493	117,753,079	112,156,610	5,596,469
	LESS:						
16	PURCHASE GAS COSTS		112,156,611	0	112,156,611	112,156,611	0
17	OTHER OPER & MAINT EXPENSE EXCL UNCOLL		23,434,413	21,685,425	1,748,987	0	1,748,987
18	UNCOLLECTIBLE ACCTS EXPENSE		5,518,477	1,767,826	3,750,651	0	3,750,651
19	DEPRECIATION EXPENSE		8,042,552	7,585,521	457,031	0	457,031
20	OTHER TAXES		4,789,918	4,544,410	245,508	0	245,508
21	INCOME TAXES		1,821,514	2,116,971	(295,457)	(0)	(295,457)
22	INTEREST ON CUSTOMER DEPOSITS		19,557	19,557	0	0	0
23	TOTAL OPERATING EXPENSES		155,783,041	37,719,711	118,063,330	112,156,610	5,906,720
24	OPERATING INCOME		8,576,531	8,886,782	(310,251)	(0)	(310,251)
25	RATE OF RETURN		5.07%	5.37%	-8.79%	0.00%	-8.79%
26	INDEX RATE OF RETURN		1.000	1.058	-1.733	0.000	-1.733
27	NET REVENUES		50,018,256	45,249,809	4,768,447	(1)	4,768,448

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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	TOTAL COMPANY Col (2+3) (1)-1	DELIVERY COSTS (2)	PRODUCTION COSTS (3)	DIRECT GAS COSTS (4)	INDIRECT GAS COSTS (5)
	SUMMARY OF RESULTS CLAIMED RATES-2						
	RATE BASE						
1	GAS PLANT IN SERVICE		318,438,523	302,064,466	16,374,057	0	16,374,057
2	LESS: DEPREC & AMORT RES		112,947,068	101,930,080	11,016,988	0	11,016,988
3	PLUS: CWIP		0	0	0	0	0
4	NET UTILITY PLANT IN SERVICE		205,491,455	200,134,386	5,357,069	0	5,357,069
	ADD:						
5	WORKING CAPITAL REQUIREMENTS		1,056,929	978,047	78,882	0	78,882
6	PREPAYMENTS		3,019	2,864	155	0	155
	DEDUCT:						
7	DEFERRED FUEL COSTS		0	0	0	0	0
8	DEFERRED DEMAND SIDE MGMNT COSTS		389,286	389,286	0	0	0
9	DEFERRED ENVIORMENTAL COSTS		45,316	45,316	0	0	0
10	UNAMORTIZED DEFERRED ASSETS - OTH		(2,757,128)	(2,615,357)	(141,771)	0	(141,771)
11	ACCUM DEFERRED INCOME TAX		39,867,830	37,817,833	2,049,997	0	2,049,997
12	RATE BASE		169,006,099	165,478,219	3,527,880	0	3,527,880
	DEVELOPMENT OF RETURN						
13	TOTAL SALES REVENUE		173,597,586	55,611,421	117,986,164	112,156,611	5,829,554
14	OTHER OPERATING REVENUE		2,184,705	1,356,684	828,021	0	828,021
15	TOTAL GAS OPERATING REV		175,782,291	56,968,105	118,814,185	112,156,611	6,657,575
	LESS:						
16	PURCHASE GAS COSTS		112,156,611	0	112,156,611	112,156,611	0
17	OTHER OPER & MAINT EXPENSE EXCL UNCOLL		23,434,413	21,685,425	1,748,987	0	1,748,987
18	UNCOLLECTIBLE ACCTS EXPENSE		5,518,477	1,767,826	3,750,651	0	3,750,651
19	DEPRECIATION EXPENSE		8,042,552	7,585,521	457,031	0	457,031
20	OTHER TAXES		4,789,918	4,544,410	245,508	0	245,508
21	INCOME TAXES		6,450,571	6,316,015	134,556	0	134,556
22	INTEREST ON CUSTOMER DEPOSITS		19,557	19,557	0	0	0
23	TOTAL OPERATING EXPENSES		160,412,098	41,918,754	118,493,344	112,156,611	6,336,733
24	OPERATING INCOME		15,370,193	15,049,351	320,842	0	320,842
25	RATE OF RETURN		9.09%	9.09%	9.09%	0.00%	9.09%
26	INDEX RATE OF RETURN		1.000	1.000	1.000	0.000	1.000
27	NET REVENUES		61,440,975	55,611,421	5,829,554	0	5,829,554

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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	REVENUE REQUIREMENTS-3						
	PRESENT RATES						
1	RATE BASE		169,006,099	165,478,219	3,527,880	0	3,527,880
2	NET OPER INC (PRESENT RATES)		8,576,531	8,886,782	(310,251)	(0)	(310,251)
3	RATE OF RETURN (PRES RATES)		5.07%	5.37%	-8.79%	0.00%	-8.79%
4	RELATIVE RATE OF RETURN		1.000	1.058	-1.733	0.000	-1.733
5	SALES REVENUE (PRE RATES)		162,174,867	45,249,809	116,925,058	112,156,610	4,768,448
6	ANNUAL BOOKED THERM SALES		148,771,890	148,771,890	148,771,890	148,771,890	148,771,890
7	SALES PRESENT REV ($/THERM)		$1.0901	$0.3042	$0.7859	$0.7539	$0.0321
8	NET REVENUES (PRE RATES)		50,018,256	45,249,809	4,768,447	(1)	4,768,448
9	NET PRESENT REV ($/THERM)		$0.3362	$0.3042	$0.0321	$0.0000	$0.0321
	CLAIMED RATE OF RETURN						
10	CLAIMED RATE OF RETURN		9.09%	9.09%	9.09%	9.09%	9.09%
11	RETURN REQ FOR CLAIMED ROR		15,370,193	15,049,351	320,842	0	320,842
12	SALES REVENUE REQ CLAIMED ROR		173,597,586	55,611,421	117,986,164	112,156,611	5,829,554
13	REVENUE DEFICIENCY SALES REV		11,422,719	10,361,612	1,061,106	1	1,061,106
14	PERCENT INCREASE REQUIRED		7.04%	22.90%	0.91%	0.00%	22.25%
15	ANNUAL BOOKED THERM SALES		148,771,890	148,771,890	148,771,890	148,771,890	148,771,890
16	SALES REV REQUIRED ($/THERM)		$1.1669	$0.3738	$0.7931	$0.7539	$0.0392
17	REVENUE DEFICIENCY ($/THERM)		$0.0768	$0.0696	$0.0071	$0.0000	$0.0071
18	NET REVENUES CLAIMED ROR		61,440,975	55,611,421	5,829,554	0	5,829,554
19	NET REV REQUIRED ($/THERM)		$0.4130	$0.3738	$0.0392	$0.0000	$0.0392

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		ALLOC	TOTAL COMPANY Col (2+3) (1)-1	DELIVERY COSTS (2)	PRODUCTION COSTS (3)	DIRECT GAS COSTS (4)	INDIRECT GAS COSTS (5)
	DEVELOPMENT OF RATE BASE-4						
	GAS PLANT IN SERVICE						
	INTANGIBLE PLANT						
1	901.1-ORGANIZATION COSTS	PLANT	0	0	0	0	0
2	901.3-MISC INTANGIBLE PLANT	PLANT	0	0	0	0	0
3	TOTAL INTANGIBLE PLANT		0	0	0	0	0
	PRODUCTION PLANT						
4	902.1-LAND & LAND RIGHTS	DPROD	394,087	46,896	347,191	0	347,191
5	903.1-STRUCTURES & IMPROV	DPROD	2,135,937	254,176	1,881,760	0	1,881,760
6	904.1-PROD EQ PUMPING & REGUL	DPROD	4,126,519	491,056	3,635,463	0	3,635,463
7	904.2-PROD EQ-PEAK SHAVING	DPROD	10,783,475	1,283,234	9,500,241	0	9,500,241
8	904.3-PROD EQUIP-OTHER	DPROD	258,085	30,712	227,373	0	227,373
9	904.4-PROD EQ-VEHICLE REFUEL	DPROD	0	0	0	0	0
10	TOTAL PRODUCTION PLANT		17,698,103	2,106,074	15,592,028	0	15,592,028
	DISTRIBUTION PLANT						
11	902.2-LAND & LAND RIGHTS	DISTR	197,764	197,764	0	0	0
12	903.2-STRUCTURES & IMPROV	DISTR	624,182	624,182	0	0	0
13	905-MAINS	DISTR	162,978,981	162,978,981	0	0	0
14	907-SERVICES	CUST907	97,040,214	97,040,214	0	0	0
15	908-METERS	CUST908	23,955,162	23,955,162	0	0	0
16	TOTAL DISTRIBUTION PLANT		284,796,303	284,796,303	0	0	0
	GENERAL PLANT						
17	902.3-LAND & LAND RIGHTS	LABOR	16,550	15,738	812	0	812
18	903.3-STRUCTURES & IMPROV	LABOR	5,232,493	4,975,849	256,644	0	256,644
19	951-COMPUTER EQUIPMENT	LABOR	8,227,827	7,824,267	403,559	0	403,559
20	952-COMMUNICATION EQUIP	LABOR	429,125	408,077	21,048	0	21,048
21	953-LABORATORY EQUIPMENT	LABOR	150,946	143,542	7,404	0	7,404
22	954-OFFICE FURNITURE & EQUIP	LABOR	167,505	159,289	8,216	0	8,216
23	955-TRANSPORTATION EQUIPMENT	LABOR	504,468	479,725	24,743	0	24,743
24	956.1-GENERAL TOOLS & IMPLEM	LABOR	981,965	933,801	48,164	0	48,164
25	956.2-STORES EQUIPMENT	LABOR	28,211	26,827	1,384	0	1,384
26	956.3-MISCELLANEOUS EQUIP	LABOR	205,028	194,972	10,056	0	10,056
27	960-LEASEHOLD IMPROVEMENTS	LABOR	0	0	0	0	0
28	TOTAL GENERAL PLANT		15,944,117	15,162,088	782,029	0	782,029
29	TOTAL GAS PLANT IN SERVICE		318,438,523	302,064,466	16,374,057	0	16,374,057

		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	DEVELOPMENT OF RATE BASE CONT-5						
	DEPRECIATION & AMORTIZATION RESERVE						
	INTANGIBLE PLANT RESERVE						
1	901.1-ORGANIZATION COSTS	PLT901.1	0	0	0	0	0
2	901.3-MISC INTANGIBLE PLANT	PLT901.3	0	0	0	0	0
3	TOTAL INTANGIBLE PLT RESERVE		0	0	0	0	0
	PRODUCTION PLANT RESERVE						
1	903.1-STRUCTURES & IMPROV	PLT903.1	1,596,522	189,986	1,406,536	0	1,406,536
2	904.1-PROD EQ PUMPING & REGUL	PLT904.1	912,533	108,591	803,941	0	803,941
3	904.2-PROD EQ-PEAK SHAVING	PLT904.2	9,336,129	1,110,999	8,225,130	0	8,225,130
4	904.3-PROD EQUIP-OTHER	PLT904.3	174,272	20,738	153,534	0	153,534
5	904.4-PROD EQ-VEHICLE REFUEL	PLT904.4	0	0	0	0	0
6	TOTAL PRODUCTION RESERVE		12,019,456	1,430,315	10,589,140	0	10,589,140
	DISTRIBUTION PLANT RESERVE						
7	903.2-STRUCTURES & IMPROV	PLT903.2	380,736	380,736	0	0	0
8	905-MAINS	PLT905	47,933,300	47,933,300	0	0	0
9	907-SERVICES	PLT907	30,639,442	30,639,442	0	0	0
10	908-METERS	PLT908	13,251,115	13,251,115	0	0	0
11	TOTAL DISTRIBUTION PLANT		92,204,594	92,204,594	0	0	0
	GENERAL PLANT						
12	903.3-STRUCTURES & IMPROV	PLT903.3	1,576,544	1,499,218	77,327	0	77,327
13	951-COMPUTER EQUIPMENT	PLT951	5,285,864	5,026,602	259,262	0	259,262
14	952-COMMUNICATION EQUIP	PLT952	173,526	165,015	8,511	0	8,511
15	953-LABORATORY EQUIPMENT	PLT953	266,667	253,588	13,080	0	13,080
16	954-OFFICE FURNITURE & EQUIP	PLT954	64,605	61,436	3,169	0	3,169
17	955-TRANSPORTATION EQUIPMENT	PLT955	866,901	824,381	42,520	0	42,520
18	956.1-GENERAL TOOLS & IMPLEM	PLT956	334,697	318,281	16,416	0	16,416
19	956.2-STORES EQUIPMENT	PLT956.2	29,233	27,799	1,434	0	1,434
20	956.3-MISCELLANEOUS EQUIP	PLT956.3	124,982	118,852	6,130	0	6,130
21	960-LEASEHOLD IMPROVEMENTS	PLT960	0	0	0	0	0
22	TOTAL GENERAL RESERVE		8,723,019	8,295,171	427,848	0	427,848
23	TOTAL DEPRECIATION RESERVE		112,947,068	101,930,080	11,016,988	0	11,016,988
24	CWIP	DISTPLT	0	0	0	0	0
25	NET UTILITY PLANT IN SERVICE		205,491,455	200,134,386	5,357,069	0	5,357,069

DEVELOPMENT OF RATE BASE CONT-6

		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	ADDITIONS TO NET PLANT						
	WORKING CAPITAL REQUIREMENTS						
	CASH WORKING CAPITAL						
1	OTHER O&M	OMEXPX	1,056,929	978,047	78,882	0	78,882
2	GAS COSTS		0	0	0	0	0
3	TOTAL CASH WORKING CAPITAL		1,056,929	978,047	78,882	0	78,882
	MATERIALS & SUPPLIES						
4	FUEL		0	0	0	0	0
5	OTHER	PLANT	0	0	0	0	0
6	TOTAL MATERIALS & SUPPLIES		0	0	0	0	0
7	TOTAL WORKING CAPITAL		1,056,929	978,047	78,882	0	78,882
	PREPAYMENTS						
8	FUEL		0	0	0	0	0
9	OTHER	PLANT	3,019	2,864	155	0	155
10	TOTAL PREPAYMENTS		3,019	2,864	155	0	155
11	TOTAL ADDITIONS TO NET PLANT		1,059,948	980,910	79,037	0	79,037

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		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	DEVELOPMENT OF RATE BASE CONT-7						
	DEDUCTIONS FROM NET PLANT						
1	DEFERRED FUEL COSTS		0	0	0	0	0
2	CUSTOMER DEPOSITS	CUSTDEP	389,286	389,286	0	0	0
3	INTEREST ON CUSTOMER DEPOSITS	CUSTDEP	45,316	45,316	0	0	0
4	UNAMORTIZED DEFERRED ASSETS - OTHER	PLANT	(2,757,128)	(2,615,357)	(141,771)	0	(141,771)
5	ACCUM DEFERRED INCOME TAX	PLANT	39,867,830	37,817,833	2,049,997	0	2,049,997
6	TOTAL DEDUCTIONS TO NET PLANT		37,545,304	35,637,077	1,908,226	0	1,908,226
7	TOTAL RATE BASE		169,006,099	165,478,219	3,527,880	0	3,527,880

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		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	OPERATING REVENUES-8						
	GAS OPERATING REVENUES						
1	TOTAL SALES REVENUES		162,174,867	45,249,809	116,925,058	112,156,610	4,768,448
	OTHER OPERATING REVENUES						
2	609-LATE PAYMENT CHARGES	REVCLAIM	1,192,394	381,980	810,414	0	810,414
3	610-BAD CHECK CHARGES	REVCLAIM	25,905	8,299	17,606	0	17,606
4	NON CORE SALES MARGINS	DISTR	720,586	720,586	0	0	0
5	RECONNECT FEES	CUSTCONN	245,820	245,820	0	0	0
6	TOTAL OTHER OPERATING REVENUE		2,184,705	1,356,684	828,021	0	828,021
7	TOTAL OPERATING REVENUES		164,359,572	46,606,493	117,753,079	112,156,610	5,596,469
	OPERATION & MAINTENANCE EXP						
	GAS PRODUCTION EXPENSES						
	LIQUEFIED PROPANE GAS PRODUCTION						
	OPERATION EXPENSE						
8	701-SUPERVISION GAS SUPPLY	GASSUP	63,335	0	63,335	0	63,335
9	707-OTHER PRODUCTION LABOR	DPROD	171,929	20,460	151,469	0	151,469
10	718.1-LIQUID PETROLEOUM GAS	ELPG	230,925	0	230,925	0	230,925
11	718.2-LIQUID NATURAL GAS	ELNG	729,664	0	729,664	729,664	0
	722-OTH PROD SUPPLIES & EXP						
	GAS SUPPLY	GASSUP	184,240	0	184,240	0	184,240
	DELIVERY SERVICE	DISTR	22,144	22,144	0	0	0
12	TOTAL ACCOUNT 722		206,384	22,144	184,240	0	184,240
13	735-OTH PROD RENT	DPROD	7,483	891	6,593	0	6,593
14	TOTAL OPERATION EXPENSE		1,409,720	43,494	1,366,226	729,664	636,562
	MAINTENANCE						
15	726-MAINT OF GENERATION EQ	DPROD	0	0	0	0	0
16	727-MAINT OF MISCELLANEOUS EQ	DPROD	260,452	30,994	229,458	0	229,458
17	TOTAL MAINTENANCE EXPENSE		260,452	30,994	229,458	0	229,458
18	TOTAL PRODUCTION EXPENSE		1,670,172	74,487	1,595,684	729,664	866,021
	PURCHASED GAS SUPPLY EXPENSES						
19	738.1-PURCHASED GAS PRO FORMA	GASCOSTS	111,426,947	0	111,426,947	111,426,947	0
20	738.2-COST OF GAS ADJ	GASCOSTS	0	0	0	0	0
21	TOTAL PURCHASED GAS COST		111,426,947	0	111,426,947	111,426,947	0
22	TOTAL PRODUCTION EXPENSE		113,097,119	74,487	113,022,631	112,156,611	866,021

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		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	OPERATION & MAINT EXP CONT-9						
	DISTRIBUTION EXPENSES						
	OPERATION EXPENSE						
1	756-SUPERVISION	TLABDO	415,379	415,379	0	0	0
2	761-OPER OF DISTR LINES	PLT905	922,338	922,338	0	0	0
3	762.1-METER OPER LABOR & EXP	PLT908	1,881,531	1,881,531	0	0	0
4	762.2-OTHER EXP ON CUST PREM	DISTR	181,255	181,255	0	0	0
5	TOTAL OPERATION EXPENSE		3,400,503	3,400,503	0	0	0
	MAINTENANCE						
6	765-MAINT OF STRUCTURES	PLT903.2	65,234	65,234	0	0	0
7	768-MAINTENANCE OF DISTR LINES	PLT905	3,886,196	3,886,196	0	0	0
8	771-MAINTENANCE OF SERVICES	PLT907	1,326,282	1,326,282	0	0	0
9	772-MAINT OF CUSTOMER METERS	PLT908	170,742	170,742	0	0	0
10	TOTAL MAINTENANCE EXPENSE		5,448,453	5,448,453	0	0	0
11	TOTAL DISTRIBUTION EXPENSE		8,848,956	8,848,956	0	0	0
	CUSTOMER ACCOUNTING EXPENSES						
12	780-CUST ORD, MET RDG & COLL	CUST780	148,517	148,517	0	0	0
13	781-CUSTOMER BILLING & ACCTG	CUST781	2,908,876	2,908,876	0	0	0
14	783-UNCOLLECTIBLE ACCTS PRO FORMA	REVCLAIM	5,518,477	1,767,826	3,750,651	0	3,750,651
15	TOTAL CUSTOMER ACCOUNTS		8,575,870	4,825,220	3,750,651	0	3,750,651
	SALES EXPENSE						
16	787-OTHER EXPENSES	GENPLT	950,372	903,758	46,614	0	46,614
17	TOTAL SALES EXPENSE		950,372	903,758	46,614	0	46,614

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		ALLOC	TOTAL COMPANY Col (2+3) (1)-1	DELIVERY COSTS (2)	PRODUCTION COSTS (3)	DIRECT GAS COSTS (4)	INDIRECT GAS COSTS (5)
	OPERATION & MAINT EXP CONT-10						
	ADMINISTRATIVE & GENERAL						
	OPERATION						
1	791-GENERAL OFFICE SALARIES	LABOR	3,014,257	2,866,413	147,844	0	147,844
2	793-OFFICE SUPPLIES & EXP	LABOR	2,048,317	1,947,851	100,466	0	100,466
3	794-SUPERV FEES & SPEC SERV	LABOR	794,749	755,768	38,981	0	38,981
4	797-REGULATORY COMM EXP	REVCLAIM	742,373	237,817	504,556	0	504,556
5	798-INSURANCE	LABOR	80,033	76,107	3,925	0	3,925
6	799-INJURIES & DAMAGES	LABOR	52,816	50,226	2,591	0	2,591
7	800-EMPLOYEE WELFARE & RELIEF	LABOR	2,699,042	2,566,659	132,383	0	132,383
8	801-MISC GENERAL EXPENSE	LABOR	77,695	73,884	3,811	0	3,811
9	803-GENERAL RENTS	LABOR	84,054	79,931	4,123	0	4,123
10	610-ACCOUNT SERVICE CHARGES	LABOR	0	0	0	0	0
11	TOTAL OPERATION EXPENSE		9,593,335	8,654,656	938,679	0	938,679
	MAINTENANCE						
12	802.1-BLDG MAINT & EXP	GENPLT	0	0	0	0	0
13	806-A&G TRANSFER	AGX806	388	350	38	0	38
14	TOTAL ADMINISTRATIVE & GEN		9,593,724	8,655,006	938,717	0	938,717
15	TOT OPER & MAINT EXP BEFORE ADJ BELOW		141,066,040	23,307,427	117,758,613	112,156,611	5,602,003
	PRO FORMA ADJUSTMENTS						
	GAS PRODUCTION						
	NATURAL GAS PRODUCTION & GATHERING						
15	OPERATION	PRODOPX	(42,399)	(2,990)	(39,409)	0	(39,409)
16	MAINTENANCE	PRODMNX	(22,848)	(2,719)	(20,129)	0	(20,129)
17	TOTAL NAT GAS PROD & GATHERING		(65,247)	(5,709)	(59,538)	0	(59,538)
18	OTHER GAS SUPPLY EXPENSE	GASSUP	(69)	0	(69)	0	(69)
19	NATURAL GAS STORAGE	GASSUP	0	0	0	0	0
	DISTRIBUTION EXPENSES						
20	DISTRIBUTION OPERATIONS	EXP7612	(47,192)	(47,192)	0	0	0
21	DISTRIBUTION MAINTENANCE	EXP7652	(66,965)	(66,965)	0	0	0
22	TOTAL DISTRIBUTION EXPENSES		(114,157)	(114,157)	0	0	0
23	CUSTOMER ACCOUNTING EXPENSES	CUSTACCX	681,468	681,468	0	0	0
24	SALES EXPENSES	EXPSALES	(43,211)	(41,092)	(2,119)	0	(2,119)
25	ADMINISTRATIVE & GENERAL EXPENSES	AGEXP	(415,324)	(374,686)	(40,638)	0	(40,638)
26	SYNERGY SAVINGS	OMEXPX	0	0	0	0	0
27	TOTAL ADJ EXCL GAS COST & UNCOLL ADJ		43,460	145,825	(102,365)	0	(102,365)
28	TOTAL PRO FORMA OPERATION & MAINT EXP		141,109,500	23,453,252	117,656,249	112,156,611	5,499,638

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		ALLOC	TOTAL COMPANY Col (2+3) (1)-1	DELIVERY COSTS (2)	PRODUCTION COSTS (3)	DIRECT GAS COSTS (4)	INDIRECT GAS COSTS (5)
	DEPRECIATION & AMORT EXPENSE-11						
	DEPRECIATION & AMORTIZATION EXPENSE						
	AMORTIZATION EXPENSE OTHER						
1	901.1-ORGANIZATION COSTS	PLT901.1	0	0	0	0	0
2	901.3-MISC INTANGIBLE PLANT	PLT901.3	0	0	0	0	0
3	TOTAL INTANGIBLE PLT RESERVE		0	0	0	0	0
	DEPRECIATION EXPENSE						
	PRODUCTION PLANT EXPENSE						
4	903.1-STRUCTURES & IMPROV	PLT903.1	71,157	8,468	62,690	0	62,690
5	904.1-PROD EQ PUMPING & REGUL	PLT904.1	95,803	11,401	84,403	0	84,403
6	904.2-PROD EQ-PEAK SHAVING	PLT904.2	431,033	51,293	379,740	0	379,740
7	904.3-PROD EQUIP-OTHER	PLT904.3	0	0	0	0	0
8	ACCRUAL RATE & RESERVE AMORT ADJ	DPROD	(101,773)	(12,111)	(89,662)	0	(89,662)
9	TOTAL PRODUCTION PLANT		496,220	59,050	437,170	0	437,170
	DISTRIBUTION PLANT EXPENSE						
10	903.2-STRUCTURES & IMPROV	PLT903.2	21,035	21,035	0	0	0
11	905-MAINS	PLT905	4,122,725	4,122,725	0	0	0
12	907-SERVICES	PLT907	2,882,681	2,882,681	0	0	0
13	908-METERS	PLT908	982,496	982,496	0	0	0
14	ACCRUAL RATE & RESERVE AMORT ADJ	DISTPLT	(724,976)	(724,976)	0	0	0
15	TOTAL DISTRIBUTION PLANT		7,283,960	7,283,960	0	0	0
	GENERAL PLANT						
16	903.3-STRUCTURES & IMPROV	PLT903.3	168,453	160,191	8,262	0	8,262
17	951-COMPUTER EQUIPMENT	PLT951	718,544	683,301	35,243	0	35,243
18	952-COMMUNICATION EQUIP	PLT952	31,738	30,181	1,557	0	1,557
19	953-LABORATORY EQUIPMENT	PLT953	19,039	18,105	934	0	934
20	954-OFFICE FURNITURE & EQUIP	PLT954	9,253	8,799	454	0	454
21	955-TRANSPORTATION EQUIPMENT	PLT955	99,193	94,327	4,865	0	4,865
22	956.1-GENERAL TOOLS & IMPLEM	PLT956	21,174	20,135	1,039	0	1,039
23	956.2-STORES EQUIPMENT	PLT956.2	2,691	2,559	132	0	132
24	956.3-MISCELLANEOUS EQUIP	PLT956.3	16,247	15,450	797	0	797
25	ACCRUAL RATE & RESERVE AMORT ADJ	GENPLT	(222,622)	(211,703)	(10,919)	0	(10,919)
26	TOTAL GENERAL PLANT		863,710	821,347	42,363	0	42,363
27	DEPREC AMORT OF RESERVE SURPLUS	PLANT	(933,591)	(885,586)	(48,005)	0	(48,005)
28	LEVELIZED COST TO ACHIEVE AMRT COSTS	AGEXP	181,327	163,585	17,742	0	17,742
28	ADDITIONAL EXP ON NON GROWTH CAPITAL	PLANT	150,925	143,164	7,761	0	7,761
29	TOTAL DEPRECIATION EXPENSE		8,042,552	7,585,521	457,031	0	457,031

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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	OTHER TAXES & OTHER EXP-12						
	TAXES OTHER THAN INCOME						
1	PROPERTY TAXES	PLANT	4,457,169	4,227,982	229,187	0	229,187
2	PAYROLL TAXES	LABOR	332,748	316,428	16,321	0	16,321
3	OTHER TAXES	PLANT	0	0	0	0	0
4	TOTAL TAXES OTHER THAN INCOME		4,789,918	4,544,410	245,508	0	245,508
5	TOTAL INCOME TAX EXPENSE		1,821,514	2,116,971	(295,457)	(0)	(295,457)
6	INTEREST ON CUSTOMER DEPOSITS	CUSTDEP	19,557	19,557	0	0	0
7	TOTAL OPERATING EXPENSES		155,783,041	37,719,711	118,063,330	112,156,610	5,906,720
8	NET OPERATING INCOME		8,576,531	8,886,782	(310,251)	(0)	(310,251)

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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	TOTAL COMPANY Col (2+3) (1)-1	DELIVERY COSTS (2)	PRODUCTION COSTS (3)	DIRECT GAS COSTS (4)	INDIRECT GAS COSTS (5)
	DEVELOPMENT OF INCOME TAXES-13						
	FEDERAL & STATE TAX CALCULATION						
1	OPERATING REVENUES		164,359,572	46,606,493	117,753,079	112,156,610	5,596,469
	OPERATING EXPENSES						
2	OPERATION & MAINTENANCE EXP		141,109,500	23,453,252	117,656,249	112,156,611	5,499,638
3	DEPRECIATION		8,042,552	7,585,521	457,031	0	457,031
4	TAXES OTHER THAN INCOME		4,789,918	4,544,410	245,508	0	245,508
5	INTEREST ON CUSTOMER DEPOSITS		19,557	19,557	0	0	0
6	OPERATING INC BEFORE FED TAXES		10,398,045	11,003,753	(605,709)	(1)	(605,708)
	LESS:						
7	INTEREST EXPENSE		5,898,313	5,775,190	123,123	0	123,123
8	NET OPERATING INC BEFORE TXS		4,499,732	5,228,563	(728,832)	(1)	(728,831)
	PERMANENT / FLOW THROUGH DIFF						
	DEDUCTIONS:						
9	DISALLOWED TRAVEL & ENT	LABOR	7,077	6,730	347	0	347
10	PENALTIES & FINES	LABOR	0	0	0	0	0
11	LOBBYING EXPENSE	LABOR	0	0	0	0	0
12	TOTAL ADDITIONS		7,077	6,730	347	0	347
	ADDITIONS:						
13	MEDICARE INCOME	LABOR	2,136	2,031	105	0	105
14	TOTAL DEDUCTIONS		2,136	2,031	105	0	105
15	TAXABLE BASIS FOR STATE TAXES		4,494,791	5,223,865	(729,074)	(1)	(729,073)
16	NH STATE TAX EXPENSE @ 8.50%		382,057	444,029	(61,971)	(0)	(61,971)
17	TOTAL STATE TAXES		382,057	444,029	(61,971)	(0)	(61,971)
18	FEDERAL TAXABLE BASIS		4,112,734	4,779,836	(667,103)	(0)	(667,102)
19	FEDERAL TAXES @ 35%		1,439,457	1,672,943	(233,486)	(0)	(233,486)
20	TOTAL INCOME TAX EXPENSE		1,821,514	2,116,971	(295,457)	(0)	(295,457)
21	NET INCOME AFTER TAX		8,576,531	8,886,782	(310,251)	(0)	(310,251)

RETURN LONG TERM DEBT	3.49%
EFFECTIVE STATE TAX RATE	8.50%
FEDERAL TAX RATE - CURRENT	35.00%
1 - INCREMENTAL TAX RATE	0.59475
INCREMENTAL TAX RATE	0.40525
EFFECTIVE INCREMENTAL FEDERAL RATE	0.32025
FACTOR FOR TAXABLE BASIS	1.68138

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NATIONAL GRID NH
COST OF SERVICE STUDY
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		ALLOC	TOTAL COMPANY Col (2+3) (1)-1	DELIVERY COSTS (2)	PRODUCTION COSTS (3)	DIRECT GAS COSTS (4)	INDIRECT GAS COSTS (5)
	DEVELOPMENT OF LABOR ALLOCATOR-14						
	GAS PRODUCTION LABOR						
	NATURAL GAS PRODUCTION & GATHERING						
1	OPERATION	PRODOPX	246,186	17,362	228,824	0	228,824
2	MAINTENANCE	PRODMNX	117,122	13,937	103,184	0	103,184
3	TOTAL NAT GAS PROD & GATHERING		363,308	31,299	332,008	0	332,008
4	OTHER GAS SUPPLY LABOR	GASSUP	0	0	0	0	0
5	NATURAL GAS STORAGE LABOR	GASSUP	0	0	0	0	0
	DISTRIBUTION LABOR						
6	DISTRIBUTION OPERATIONS	EXP7612	2,302,359	2,302,359	0	0	0
7	DISTRIBUTION MAINTENANCE	EXP7652	2,676,429	2,676,429	0	0	0
8	TOTAL DISTRIBUTION LABOR		4,978,788	4,978,788	0	0	0
	CUSTOMER ACCOUNTING LABOR						
9	CUSTOMER ACCOUNTING	EXP7801	1,426,934	1,426,934	0	0	0
10	TOT CUST ACCOUNTING LABOR		1,426,934	1,426,934	0	0	0
11	SALES LABOR	EXPSALES	537,502	511,139	26,363	0	26,363
	ADMINISTRATIVE & GENERAL LABOR						
12	GENERAL & ADMINISTRATIVE	LABOR	2,674,837	2,543,642	131,196	0	131,196
13	TOTAL ADMIN & GENERAL EXP		2,674,837	2,543,642	131,196	0	131,196
14	SUM OF ALLOCATED LABOR EXP		9,981,369	9,491,802	489,567	0	489,567

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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	ALLOCATION FACTOR TABLE-15						
	CAPACITY RELATED						

	PRODUCTION ALLOCATORS						
1	PRODUCTION DEMAND ALLOC		1	0	1	0	1
2	LPG & LNG PROD ALLOC-PROD		100.0000%	0.0000%	100.0000%	0.0000%	100.0000%
3	LPG & LNG PROD ALLOC-DISTR		100.0000%	100.0000%	0.0000%	0.0000%	0.0000%
4							
5							
6							
7							
8	DISTRIBUTION ALLOCATORS						
9	---						
10	DISTRIBUTION ALLOCATOR	DISTR	100.0000%	100.0000%	0.0000%	0.0000%	0.0000%
11							
12							
13							
14							
15							

ALLOCATION FACTOR TABLE CONT-16

COMMODITY RELATED

		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
1	PROPANE COMMODITY	ELPG	1	0	1	0	1
2	LNG COMMODITY	ELNG	1	0	1	1	0
3	ALLOCATED GAS COSTS	GASCOSTS	1	0	1	1	0
4	GAS SUPPLY COSTS	GASSUP	1	0	1	0	1
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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	ALLOCATION FACTOR TABLE CONT-17						
	CUSTOMER RELATED						
1	ACCT 907-SERVICES	CUST907	1	1	0	0	0
2	ACCT 908-METERS	CUST908	1	1	0	0	0
3	ACCT 909-CUSTOMER PREMISES EQ	CUST909	1	1	0	0	0
4	CUSTOMER DEPOSITS	CUSTDEP	1	1	0	0	0
5	ACCT 780-CUS ORD, MET RD & COLL	CUST780	1	1	0	0	0
6	ACCT 781-CUST BILLING & ACCTG	CUST781	1	1	0	0	0
7	RECONNECT FEES	CUSTCONN	1	1	0	0	0
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NATIONAL GRID NH
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12 MONTHS ENDED JUNE 30, 2009

	INTERNALLY DEVELOPED-18	ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
1	TOTAL GAS PLANT IN SERVICE	PLANT	318,438,523	302,064,466	16,374,057	0	16,374,057
2	SUM OF ALLOCATED LABOR EXP	LABOR	9,981,369	9,491,802	489,567	0	489,567
3	ACCT 903.1-STRUCTURES & IMPROV	PLT903.1	2,135,937	254,176	1,881,760	0	1,881,760
4	ACCT 904.1-PROD EQ PUMP & REG	PLT904.1	4,126,519	491,056	3,635,463	0	3,635,463
5	ACCT 904.2-PROD EQ-PK SHAVING	PLT904.2	10,783,475	1,283,234	9,500,241	0	9,500,241
6	ACCT 904.3-PROD EQUIP-OTHER	PLT904.3	258,085	30,712	227,373	0	227,373
7	ACCT 904.4-PR EQ-VEHICLE REFUEL	PLT904.4	0	0	0	0	0
8	ACCT 903.2-STRUCTURES & IMPROV	PLT903.2	624,182	624,182	0	0	0
9	ACCT 905-MAINS	PLT905	162,978,981	162,978,981	0	0	0
10	ACCT 907-SERVICES	PLT907	97,040,214	97,040,214	0	0	0
11	ACCT 908-METERS	PLT908	23,955,162	23,955,162	0	0	0
12	ACCT 903.3-STRUCTURES & IMPROV	PLT903.3	5,232,493	4,975,849	256,644	0	256,644
13	ACCT 951-COMPUTER EQUIPMENT	PLT951	8,227,827	7,824,267	403,559	0	403,559
14	ACCT 952-COMMUNICATION EQUIP	PLT952	429,125	408,077	21,048	0	21,048
15	ACCT 953-LABORATORY EQUIPMENT	PLT953	150,946	143,542	7,404	0	7,404
16	ACCT 954-OFFICE FURNITURE & EQ	PLT954	167,505	159,289	8,216	0	8,216
17	ACCT 955-TRANSPORTATION EQUIP	PLT955	504,468	479,725	24,743	0	24,743
18	ACCT 956.1-GEN TOOLS & IMPLEM	PLT956	981,965	933,801	48,164	0	48,164
19	ACCT 956.2-STORES EQUIPMENT	PLT956.2	28,211	26,827	1,384	0	1,384
20	ACCT 956.3-MISCELLANEOUS EQUIP	PLT956.3	205,028	194,972	10,056	0	10,056
21	ACCT 960-LEASEHOLD IMPROV	PLT960	0	0	0	0	0
22	TOTAL DISTRIBUTION PLANT	DISTPLT	284,796,303	284,796,303	0	0	0
23	DISTR OPER EXP ACCTS 761 TO 762.2	EXP7612	2,985,124	2,985,124	0	0	0
24	TOTAL SALES EXPENSES	EXPSALES	950,372	903,758	46,614	0	46,614
25	DISTR MAINT EXP ACCTS 765-772	EXP7652	5,448,453	5,448,453	0	0	0
26	DISTRIBUTION OPERATING LABOR	TLABDO	2,302,359	2,302,359	0	0	0
27	ACCT 780 & 781-CUST BILLING & ACCTG	EXP7801	3,057,393	3,057,393	0	0	0
28	TOTAL GENERAL PLANT	GENPLT	15,944,117	15,162,088	782,029	0	782,029
29	REVENUES AT CLAIMED RATE OF RETURN	REVCLAIM	173,597,586	55,611,421	117,986,164	0	117,986,164
30	ACCT 901.1-ORGANIZATION COSTS	PLT901.1	0	0	0	0	0
31	ACCT 901.3-MISC INTANGIBLE PLANT	PLT901.3	0	0	0	0	0
32	ADMIN & GENERAL EXP EXCL ACCT 806	AGX806	9,593,335	8,654,656	938,679	0	938,679
33	PRODUCTION OPERATING EXP EXCL GAS	PRODOPX	616,721	43,494	573,227	0	573,227
34	PRODUCTION MAINTENANCE EXP	PRODMNX	260,452	30,994	229,458	0	229,458
35	CUST ACCTS LABOR EXCL UNCOLL ACCTS	CUSTACCX	3,057,393	3,057,393	0	0	0
36	TOT PRO FORM O&M X EXCL GAS & UNCOLL	OMEXPX	23,434,413	21,685,425	1,748,987	0	1,748,987
37	TOTAL ADMINISTRATIVE & GENERAL EXP	AGEXP	9,593,724	8,655,006	938,717	0	938,717
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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	FIRM GAS SALES REVENUES-19						
1	FIRM SALES REVENUES		162,174,867	45,249,809	116,925,058	112,156,610	4,768,448
2	GAS COST REVENUES		112,156,610	0	112,156,610	112,156,610	0
3	PRODUCTION & STORAGE MARGIN		1,774,768	0	1,774,768	0	1,774,768
4	BAD DEBT MARGIN		2,993,680	0	2,993,680	0	2,993,680
5	MISCELLANEOUS GAS SUPPLY MARGIN		0	0	0	0	0
6	DISTRIBUTION MARGIN SALES		45,249,809	45,249,809	0	0	0
	REVENUE REQUIREMENT INPUTS						
1	CLAIMED RATE OF RETURN		9.09%	9.09%	9.09%	9.09%	9.09%
2	PROPOSED SALES REVENUES		173,597,586	55,611,421	117,986,164	112,156,611	5,829,554
3	ANNUAL BOOKED THERM SALES		148,771,890	148,771,890	148,771,890	148,771,890	148,771,890
4							
5							

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NATIONAL GRID NH
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		ALLOC	TOTAL COMPANY Col (2+3) (1)-1	DELIVERY COSTS (2)	PRODUCTION COSTS (3)	DIRECT GAS COSTS (4)	INDIRECT GAS COSTS (5)
	RATIO TABLE-20						
	CAPACITY RELATED						
	--						
	PRODUCTION ALLOCATORS						
1	PRODUCTION DEMAND ALLOC		1.00000	0.00000	1.00000	0.00000	1.00000
2	LPG & LNG PROD ALLOC-PROD		1.00000	0.00000	1.00000	0.00000	1.00000
3	LPG & LNG PROD ALLOC-DISTR		1.00000	1.00000	0.00000	0.00000	0.00000
4	LPG & LNG PROD ALLOCATOR	DPROD	1.00000	0.11900	0.88100	0.00000	0.88100
5							
6							
7							
8	DISTRIBUTION ALLOCATORS						
9	--						
10	DISTRIBUTION ALLOCATOR	DISTR	1.00000	1.00000	0.00000	0.00000	0.00000
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NATIONAL GRID NH
COST OF SERVICE STUDY
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RATIO TABLE CONT-21

		ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	COMMODITY RELATED						
1	PROPANE COMMODITY	ELPG	1.00000	0.00000	1.00000	0.00000	1.00000
2	LNG COMMODITY	ELNG	1.00000	0.00000	1.00000	1.00000	0.00000
3	ALLOCATED GAS COSTS	GASCOSTS	1.00000	0.00000	1.00000	1.00000	0.00000
4	GAS SUPPLY COSTS	GASSUP	1.00000	0.00000	1.00000	0.00000	1.00000
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	RATIO TABLE CONT-22	ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
	CUSTOMER RELATED						
1	ACCT 907-SERVICES	CUST907	1.00000	1.00000	0.00000	0.00000	0.00000
2	ACCT 908-METERS	CUST908	1.00000	1.00000	0.00000	0.00000	0.00000
3	ACCT 909-CUSTOMER PREMISES EQ	CUST909	1.00000	1.00000	0.00000	0.00000	0.00000
4	CUSTOMER DEPOSITS	CUSTDEP	1.00000	1.00000	0.00000	0.00000	0.00000
5	ACCT 780-CUS ORD, MET RD & COLL	CUST780	1.00000	1.00000	0.00000	0.00000	0.00000
6	ACCT 781-CUST BILLING & ACCTG	CUST781	1.00000	1.00000	0.00000	0.00000	0.00000
7	RECONNECT FEES	CUSTCONN	1.00000	1.00000	0.00000	0.00000	0.00000
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	INTERNALLY DEVELOPED-23	ALLOC	TOTAL COMPANY Col (2+3) (1)-1	DELIVERY COSTS (2)	PRODUCTION COSTS (3)	DIRECT GAS COSTS (4)	INDIRECT GAS COSTS (5)
1	TOTAL GAS PLANT IN SERVICE	PLANT	1.00000	0.94858	0.05142	0.00000	0.05142
2	SUM OF ALLOCATED LABOR EXP	LABOR	1.00000	0.95095	0.04905	0.00000	0.04905
3	ACCT 903.1-STRUCTURES & IMPROV	PLT903.1	1.00000	0.11900	0.88100	0.00000	0.88100
4	ACCT 904.1-PROD EQ PUMP & REG	PLT904.1	1.00000	0.11900	0.88100	0.00000	0.88100
5	ACCT 904.2-PROD EQ-PK SHAVING	PLT904.2	1.00000	0.11900	0.88100	0.00000	0.88100
6	ACCT 904.3-PROD EQUIP-OTHER	PLT904.3	1.00000	0.11900	0.88100	0.00000	0.88100
7	ACCT 904.4-PR EQ-VEHICLE REFUEL	PLT904.4	0.00000	0.00000	0.00000	0.00000	0.00000
8	ACCT 903.2-STRUCTURES & IMPROV	PLT903.2	1.00000	1.00000	0.00000	0.00000	0.00000
9	ACCT 905-MAINS	PLT905	1.00000	1.00000	0.00000	0.00000	0.00000
10	ACCT 907-SERVICES	PLT907	1.00000	1.00000	0.00000	0.00000	0.00000
11	ACCT 908-METERS	PLT908	1.00000	1.00000	0.00000	0.00000	0.00000
12	ACCT 903.3-STRUCTURES & IMPROV	PLT903.3	1.00000	0.95095	0.04905	0.00000	0.04905
13	ACCT 951-COMPUTER EQUIPMENT	PLT951	1.00000	0.95095	0.04905	0.00000	0.04905
14	ACCT 952-COMMUNICATION EQUIP	PLT952	1.00000	0.95095	0.04905	0.00000	0.04905
15	ACCT 953-LABORATORY EQUIPMENT	PLT953	1.00000	0.95095	0.04905	0.00000	0.04905
16	ACCT 954-OFFICE FURNITURE & EQ	PLT954	1.00000	0.95095	0.04905	0.00000	0.04905
17	ACCT 955-TRANSPORTATION EQUIP	PLT955	1.00000	0.95095	0.04905	0.00000	0.04905
18	ACCT 956.1-GEN TOOLS & IMPLEM	PLT956	1.00000	0.95095	0.04905	0.00000	0.04905
19	ACCT 956.2-STORES EQUIPMENT	PLT956.2	1.00000	0.95095	0.04905	0.00000	0.04905
20	ACCT 956.3-MISCELLANEOUS EQUIP	PLT956.3	1.00000	0.95095	0.04905	0.00000	0.04905
21	ACCT 960-LEASEHOLD IMPROV	PLT960	0.00000	0.00000	0.00000	0.00000	0.00000
22	TOTAL DISTRIBUTION PLANT	DISTPLT	1.00000	1.00000	0.00000	0.00000	0.00000
23	DISTR OPER EXP ACCTS 761 & 762.1	EXP7612	1.00000	1.00000	0.00000	0.00000	0.00000
24	TOTAL SALES EXPENSES	EXPSALES	1.00000	0.95095	0.04905	0.00000	0.04905
25	DISTR MAINT EXP ACCTS 765-772	EXP7652	1.00000	1.00000	0.00000	0.00000	0.00000
26	DISTRIBUTION OPERATING LABOR	TLABDO	1.00000	1.00000	0.00000	0.00000	0.00000
27	ACCT 780 & 781-CUST BILLING & ACCTG	EXP7801	1.00000	1.00000	0.00000	0.00000	0.00000
28	TOTAL GENERAL PLANT	GENPLT	1.00000	0.95095	0.04905	0.00000	0.04905
29	REVENUES AT CLAIMED RATE OF RETURN	REVCLAIM	1.00000	0.32035	0.67965	0.00000	0.67965
30	ACCT 901.1-ORGANIZATION COSTS	PLT901.1	0.00000	0.00000	0.00000	0.00000	0.00000
31	ACCT 901.3-MISC INTANGIBLE PLANT	PLT901.3	0.00000	0.00000	0.00000	0.00000	0.00000
32	ADMIN & GENERAL EXP EXCL ACCT 806	AGX806	1.00000	0.90215	0.09785	0.00000	0.09785
33	PRODUCTION OPERATING EXP EXCL GAS	PRODOPX	1.00000	0.07052	0.92948	0.00000	0.92948
34	PRODUCTION MAINTENANCE EXP	PRODMNX	1.00000	0.11900	0.88100	0.00000	0.88100
35	CUST ACCTS LABOR EXCL UNCOLL ACCTS	CUSTACCX	1.00000	1.00000	0.00000	0.00000	0.00000
36	TOT PRO FORM O&M X EXCL GAS & UNCOLL	OMEXPX	1.00000	0.92537	0.07463	0.00000	0.07463
37	TOTAL ADMINISTRATIVE & GENERAL EXP	AGEXP	1.00000	0.90215	0.09785	0.00000	0.09785
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COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

	FIRM GAS SALES REVENUES-24	ALLOC	TOTAL COMPANY **Col (2+3)** (1)-1	DELIVERY COSTS (2)	**PRODUCTION COSTS** (3)	**DIRECT GAS COSTS** (4)	**INDIRECT GAS COSTS** (5)
1	FIRM SALES REVENUES		1.00000	0.27902	0.72098	0.69158	0.02940
2	GAS COST REVENUES		1.00000	0.00000	1.00000	1.00000	0.00000
3	PRODUCTION & STORAGE MARGIN		1.00000	0.00000	1.00000	0.00000	1.00000
4	BAD DEBT MARGIN		1.00000	0.00000	1.00000	0.00000	1.00000
5	MISCELLANEOUS GAS SUPPLY MARGIN		0.00000	0.00000	0.00000	0.00000	0.00000
6	DISTRIBUTION MARGIN SALES		1.00000	1.00000	0.00000	0.00000	0.00000

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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	LPG & LNG COSTS (1)	MISC PROD COSTS (2)	BAD DEBTS EXCL LPG& LNG (3)	WORKING CAPITAL (4)	TOTAL INDIRECT GAS COSTS (5)
	SUMMARY OF RESULTS PRESENT RATES						
	RATE BASE						
1	GAS PLANT IN SERVICE		16,200,824	173,234	0	0	16,374,057
2	LESS: DEPREC & AMORT RES		10,922,212	94,776	0	0	11,016,988
3	PLUS: CWIP		0	0	0	0	0
4	NET UTILITY PLANT IN SERVICE		5,278,612	78,458	0	0	5,357,069
	ADD:						
5	WORKING CAPITAL REQUIREMENTS		42,314	36,568	0	0	78,882
6	PREPAYMENTS		154	2	0	0	155
	DEDUCT:						
7	DEFERRED FUEL COSTS		0	0	0	0	0
8	DEFERRED DEMAND SIDE MGMNT COSTS		0	0	0	0	0
9	DEFERRED ENVIORMENTAL COSTS		0	0	0	0	0
10	UNAMORTIZED DEFERRED ASSETS - OTH		(140,271)	(1,500)	0	0	(141,771)
11	ACCUM DEFERRED INCOME TAX		2,028,309	21,688	0	0	2,049,997
12	RATE BASE		3,433,041	94,839	0	0	3,527,880
	DEVELOPMENT OF RETURN						
13	TOTAL SALES REVENUE		1,077,415	7,457	3,683,576	0	4,768,448
14	OTHER OPERATING REVENUE		14,808	813,213	0	0	828,021
15	TOTAL GAS OPERATING REV		1,092,223	820,670	3,683,576	0	5,596,469
	LESS:						
16	PURCHASE GAS COSTS		0	0	0	0	0
17	OTHER OPER & MAINT EXPENSE EXCL UNCOLL		938,185	810,803	0	0	1,748,987
18	UNCOLLECTIBLE ACCTS EXPENSE		67,074	0	3,683,576	0	3,750,651
19	DEPRECIATION EXPENSE		436,889	20,142	0	0	457,031
20	OTHER TAXES		239,468	6,040	0	0	245,508
21	INCOME TAXES		(287,482)	(7,975)	(0)	0	(295,457)
22	INTEREST ON CUSTOMER DEPOSITS		0	0	0	0	0
23	TOTAL OPERATING EXPENSES		1,394,133	829,010	3,683,576	0	5,906,720
24	OPERATING INCOME		(301,911)	(8,340)	0	0	(310,251)
25	RATE OF RETURN		-8.79%	-8.79%	0.00%	0.00%	-8.79%
26	INDEX RATE OF RETURN		-1.733	-1.733	0.000	0.000	-1.733
27	NET REVENUES		1,077,415	7,457	3,683,576	0	4,768,448

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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	LPG & LNG COSTS (1)	MISC PROD COSTS (2)	BAD DEBTS EXCL LPG& LNG (3)	WORKING CAPITAL (4)	TOTAL INDIRECT GAS COSTS (5)
	SUMMARY OF RESULTS CLAIMED RATES-2						
	RATE BASE						
1	GAS PLANT IN SERVICE		16,200,824	173,234	0	0	16,374,057
2	LESS: DEPREC & AMORT RES		10,922,212	94,776	0	0	11,016,988
3	PLUS: CWIP		0	0	0	0	0
4	NET UTILITY PLANT IN SERVICE		5,278,612	78,458	0	0	5,357,069
	ADD:						
5	WORKING CAPITAL REQUIREMENTS		42,314	36,568	0	0	78,882
6	PREPAYMENTS		154	2	0	0	155
	DEDUCT:						
7	DEFERRED FUEL COSTS		0	0	0	0	0
8	DEFERRED DEMAND SIDE MGMNT COSTS		0	0	0	0	0
9	DEFERRED ENVIORMENTAL COSTS		0	0	0	0	0
10	UNAMORTIZED DEFERRED ASSETS - OTH		(140,271)	(1,500)	0	0	(141,771)
11	ACCUM DEFERRED INCOME TAX		2,028,309	21,688	0	0	2,049,997
12	RATE BASE		3,433,041	94,839	0	0	3,527,880
	DEVELOPMENT OF RETURN						
13	TOTAL SALES REVENUE		2,109,995	35,982	3,683,576	0	5,829,554
14	OTHER OPERATING REVENUE		14,808	813,213	0	0	828,021
15	TOTAL GAS OPERATING REV		2,124,803	849,195	3,683,576	0	6,657,575
	LESS:						
16	PURCHASE GAS COSTS		0	0	0	0	0
17	OTHER OPER & MAINT EXPENSE EXCL UNCOLL		938,185	810,803	0	0	1,748,987
18	UNCOLLECTIBLE ACCTS EXPENSE		67,074	0	3,683,576	0	3,750,651
19	DEPRECIATION EXPENSE		436,889	20,142	0	0	457,031
20	OTHER TAXES		239,468	6,040	0	0	245,508
21	INCOME TAXES		130,971	3,585	(0)	0	134,556
22	INTEREST ON CUSTOMER DEPOSITS		0	0	0	0	0
23	TOTAL OPERATING EXPENSES		1,812,586	840,570	3,683,576	0	6,336,733
24	OPERATING INCOME		312,217	8,625	0	0	320,842
25	RATE OF RETURN		9.09%	9.09%	0.00%	0.00%	9.09%
26	INDEX RATE OF RETURN		1.000	1.000	0.000	0.000	1.000
27	NET REVENUES		2,109,995	35,982	3,683,576	0	5,829,554

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NATIONAL GRID NH
COST OF SERVICE STUDY
12 MONTHS ENDED JUNE 30, 2009

		ALLOC	LPG & LNG COSTS (1)	MISC PROD COSTS (2)	BAD DEBTS EXCL LPG& LNG (3)	WORKING CAPITAL (4)	TOTAL INDIRECT GAS COSTS (5)
	REVENUE REQUIREMENTS-3						
	PRESENT RATES						
1	RATE BASE		3,433,041	94,839	0	0	3,527,880
2	NET OPER INC (PRESENT RATES)		(301,911)	(8,340)	0	0	(310,251)
3	RATE OF RETURN (PRES RATES)		-8.79%	-8.79%	0.00%	0.00%	-8.79%
4	RELATIVE RATE OF RETURN		-1.733	-1.733	0.000	0.000	-1.733
5	SALES REVENUE (PRE RATES)		1,077,415	7,457	3,683,576	0	4,768,448
6	ANNUAL BOOKED THERM SALES		148,771,890	148,771,890	148,771,890	148,771,890	148,771,890
7	SALES PRESENT REV ($/THERM)		$0.0072	$0.0001	$0.0248	$0.0000	$0.0321
8	NET REVENUES (PRE RATES)		1,077,415	7,457	3,683,576	0	4,768,448
9	NET PRESENT REV ($/THERM)		$0.0072	$0.0001	$0.0248	$0.0000	$0.0321
	CLAIMED RATE OF RETURN						
10	CLAIMED RATE OF RETURN		9.09%	0.00%	9.09%	9.09%	0.00%
11	RETURN REQ FOR CLAIMED ROR		312,217	8,625	0	0	320,842
12	SALES REVENUE REQ CLAIMED ROR		2,109,995	35,982	3,683,576	0	5,829,554
13	REVENUE DEFICIENCY SALES REV		1,032,580	28,525	0	0	1,061,106
14	PERCENT INCREASE REQUIRED		95.84%	382.54%	0.00%	0.00%	22.25%
15	ANNUAL BOOKED THERM SALES		148,771,890	148,771,890	148,771,890	148,771,890	148,771,890
16	SALES REV REQUIRED ($/THERM)		$0.0142	$0.0002	$0.0248	$0.0000	$0.0392
17	REVENUE DEFICIENCY ($/THERM)		$0.0069	$0.0002	$0.0000	$0.0000	$0.0071
18	NET REVENUES CLAIMED ROR		2,109,995	35,982	3,683,576	0	5,829,554
19	NET REV REQUIRED ($/THERM)		$0.0142	$0.0002	$0.0248	$0.0000	$0.0392

EnergyNorth Natural Gas, Inc.
Derivation of Gas Supply Charges - Annual

	Sales	Gas Supply Revenue Reqm't (ACS)				Allocated Costs of Net Revenue Items				
Line No.	Therms	Local Production	Purchased Gas & Misc	Total Gas Supply	Direct Gas Costs	LP & LNG	Bad Debts Excl Lp&Lng	Gas Working Capital	Other A&G and Misc.	Total Net Rev Items
1	2	3 COSS Input	4 =(5)-(3)	5 COSS Input	6 COSS Input	7 COSS Input	8 COSS Input	9 COSS Input	10 =(11)-(7)-(8)-(9)	11 =(5)-(4)
1	148,771,890	2,109,995	115,876,169	117,986,164	112,156,611	2,109,995	3,683,576	0	35,982	5,829,554

Bad Debt Expense	3,683,576
divided by Direct Gas Costs	112,156,611
Equal Bad Debt Percentage	**3.284%**

Table - 1
National Grid - New Hampshire
Marginal Cost Study

Production Investment Summary-Modified Peaker

Line No.	Description		Company Total
	(1)		(2)
	COST FOR REINFORCEMENT		
1			
2	Current Cost of Capacity Expansion	{1}	$1,596.52
3			
4			
5			
6	First Year of Capacity Shortfall	{2}	2009
7			
8			
9	Base year of study		2008
10			
11			
12	Years Before Additions	(6)-(9)	1
13			
14	After Tax Cost of Capital	{3}	7.90%
15	Inflation Rate	{6}	2.00%
16			5.90%
17			
18			
19	Present Worth of Capacity Cost		
20	(2)*[1+(15)]^(12)/[1+(14)]^(12)	{4}	$1,509.23
21			
22	Percentage Related to Transportation	{5}	11.9%
23			
24	**Transportation Related Investment**	(20)*(22)	**$179.56**
25			
26	**Gas Supply Related Plant Investment**	(20)*[1-(22)]	**$1,329.67**

NOTES:
1 Source: Table - 1, page 2.
2 Source: Prior Study
3 Source: Table - 8, page 1.
4 Cost in today's dollars sufficient to purchase the designated unit in the first year of capacity shortfall allowing for interest and price escalation.
5 Source: Table - 1, page 3.
6 Inflation Net of Technical Progress

Table - 1
National Grid - New Hampshire
Marginal Cost Study

Development of Marginal Production Plant Investment

Line No.	Description				Costs
	(1)				(2)
1	CONSTRUCTION OF PROPANE PROJECT ALTERNATIVE FACILITY				
2					
3	Addition of a New Facility:		{1}		
4	Storage Tanks				$8,340,000
5	Refrigeration Systems				1,970,000
6	Delivery Systems				4,010,000
7	Air Deliver Systems				2,560,000
8	Air Metering & Regulating (M&R) Station				1,370,000
9	Pipeline Connection to Project				1,000,000
10	Pipeline Connection from Project				2,500,000
11	Land Costs				3,520,000
12	Indirect Costs				5,950,000
13	Total Direct Costs				$31,220,000
14	KeySpan Overhead				6,650,000
15	Total Capital Costs				$37,870,000
16	O&M Costs				800,000
17	Total Project Costs				$38,670,000
18	Price escalation	{2}	2.0%	2 years	4.0%
19					
20	Cost of Facility		(17)*[1+(18)]		$40,232,268
21					
22	Total Project Capacity		{1}		25,200
23					
24	Unit Cost of Expansion		(20)/(22)		$1,596.52
25					
26	Estimated Reserves for Supplemental Capacity		{3}		0%
27					
28	**Adj Cost of Production Capacity, $/Dt**		(24)*[1+(26)]		**$1,596.52**
29					
30	Percent Transportation-related		{4}		11.9%
31					
32	Distribution related		(28)*(30)		$189.95
33	Production related		(28)-(32)		$1,406.57

NOTES:
1 Source: Prior Study
2 Escalation from 2006 to 2008
3 No allowance employed for planning purposes. Company plans for rating of the plant.

Table - 1
National Grid - New Hampshire
Marginal Cost Study

Development of Distribution-related Production Plant Investment

Line No.	Plant Name	Location	Type	Rating, mscfg	Heat Rate	Hours per Day	Design Day Dt
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Capacity of Down Stream Assets			{1}			
2							
3	38 Bridge St	Nashua	LP-Air	367	1,250	24	11,000
5	130 Elm St	Manchester	LP-Air	720	1,250	24	21,600
6	130 Elm St	Manchester	LNG	333	1,050	24	8,400
7	Broken Bridge	Concord	LNG	190	1,050	24	4,800
8	Tilton Plant	Tilton	LP-Air	67	1,250	24	2,000
9	Tilton Plant	Tilton	LNG	381	1,050	24	9,600
10	Total			2,058	1,162		57,400
11							
12	Production Requirements in lieu of Distribution investments						
13	Output Required for Pressure Support						
14							
15				{2}			
16	Tilton Plant	Tilton	LNG	271	1,050	24	6,829
17		Total		271			6,829
18							
19							
20	Production Allocated to Pressure Support Function				(17)/(10)	11.9%	
21							
22	Production Allocated to Supply Function				100%-(20)	88.1%	

NOTES:
1 Source: Company Distribution Engineering personnel.
2 Source: EN 2009 Data Source.xls

Table - 2
National Grid - New Hampshire
Marginal Cost Study

Summary of Estimates for Distribution Capacity Cost

Line No.	Description				Quantity
	(1)				(2)
1					
2	**PROSPECTIVE ADDITIONS**				
3	REINFORCEMENT (From Stoner Analysis)	{1}			
4	Estimate of upgrades				
5	to existing facilities.			$2,940,150	
6	Estimated Additional Load, Dt/Design Day			11,686	
7	Average Cost for Upgrades	(5)/(6)		$251.60	
8	Trended Cost for Upgrades	{1}			$226.85
9					
10	NEW MAIN EXTENSIONS				
11	Unit Cost for New Main Extensions	{2}			$1,390.05
12					
13	UNIT COSTS				
14	Unit Costs per Design Day Dt for Prospective Additions			(8) + (11)	$1,616.90
15					
16	**ALTERNATE ANALYSES**				
17	A - HISTORICAL INVESTMENTS	{3}			
18	CAPACITY INCREMENT - 1988 to 2008				
19	2008 Design Day Sendout			111,709	
20	1988 Design Day Sendout			83,031	
21	Increase in Design Day Sendout	(22)-(21)			28,678
22					
23	PLANT INVESTMENTS				
24	Investments to Increase Capacity, Current $'s				
25	Total Investment	1989	2008		59,702,446
26					
27	UNIT COST				
28	Avg Unit Cost for Historical Investments	(27)/(23)			$2,081.82
29					
30					
31	B - TRENDED COST APPROXIMATION	{4}			
32	Trended Cost Approximation (Slope of				
33	Regression Line)				$1,392.70
34					
35	For purposes of further study, assume long run marginal				
36	costs will be estimated by prospective additions, line (14).			**$1,616.90**	/Design Day Dt

NOTES:

1 Source: Table - 2, Page 3.
2 Source: Table - 2, Page 4.
3 Source: Cost data from Table - 2, Page 2.
4 Source: Table - 2, Page 5.

Table - 2
National Grid - New Hampshire
Marginal Cost Study

Historical Plant Investment Data - Capacity-Related

Line No.	Description	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
	DISTRIBUTION INVESTMENT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	PLANT BALANCES											
1	1307.6 Distribution Systme Land	$0	$60,354	$74,886	$131,097	$133,214	$143,214	$143,214	$196,092	$196,092	$197,914	$197,764
2	1308.6 Distribution Plant Structures	0	406,367	416,028	396,277	396,800	398,968	401,688	392,439	410,189	432,886	440,702
3	1356 Mains	0	38,217,745	41,637,189	46,738,847	49,495,895	51,743,320	54,299,184	56,239,217	58,619,137	62,326,668	67,701,530
4	1358 Pumping & Regulating Equip.	0	1,343,721	1,431,999	1,756,702	1,903,720	2,049,926	2,120,307	2,247,842	2,320,533	2,442,355	2,532,985
5												
6												
7	Net Capacity-related											
8	Distribution Plant											
9	Balances Sum (1) thru (4)	0	40,028,187	43,560,102	49,022,923	51,929,629	54,335,428	56,964,393	59,075,590	61,545,951	65,399,823	70,872,981
10												
11	Net Plant Additions (2)			3,531,915	5,462,821	2,906,706	2,405,799	2,628,965	2,111,197	2,470,361	3,853,872	5,473,158
12												
13												
14	Handy-Whitman - Jan 1 (3)	247	261	277	283	294	296	307	313	319	325	333
15	Index - Mains - Jul 1 (3)	247	261	280	289	299	302	310	315	322	330	337
16	Wtd. Avg. Annual Index	250.50	265.00	280.00	288.75	297.00	301.75	310.00	315.50	322.00	329.50	337.00
17	(14i)/4+(15i)/2+(14j)/4											
18												
19	Current Cost of Additions											
20	(11)*(16)/Current Index	$0	$0	$6,199,772	$9,298,620	$4,810,256	$3,918,642	$4,168,182	$3,288,917	$3,770,753	$5,748,644	$7,982,365
21												
22	Cumulative Net Additions	0	0	6,199,772	15,498,392	20,308,648	24,227,290	28,395,472	31,684,389	35,455,142	41,203,785	49,186,151
23												
24	Correction Factor for Replm'ts (2)	48.9%										
25												
26	**Cum Growth Related Invest**	0	0	3,028,667	7,571,161	9,921,032	11,835,338	13,871,547	15,478,225	17,320,285	20,128,571	24,028,057

Line No.	Description	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	DISTRIBUTION INVESTMENT	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
	PLANT BALANCES											
1	1307.6 Distribution Systme Land	$197,764	$197,764	$197,764	$197,764	$197,764	$197,764	$197,764	$197,764	$197,764	$197,764	$197,764
2	1308.6 Distribution Plant Structures	442,669	442,669	442,669	499,290	521,380	521,380	544,331	544,331	544,322	624,182	624,182
3	1356 Mains	72,847,284	76,920,478	81,138,985	93,264,062	99,340,539	116,503,764	122,919,791	125,879,287	136,231,864	144,768,223	154,426,368
4	1358 Pumping & Regulating Equip.	2,557,081	787,819	1,036,877	1,229,615	1,450,682	2,253,938	2,431,810	2,436,538	2,473,039	2,844,779	2,812,639
5												
6												
7	Net Capacity-related											
8	Distribution Plant											
9	Balances Sum (1) thru (4)	76,044,798	78,348,730	82,816,295	95,190,731	101,510,365	119,476,846	126,093,696	129,057,920	139,446,989	148,434,948	158,060,953
10												
11	Net Plant Additions (2)	5,171,817	2,303,932	4,467,565	12,374,436	6,319,634	17,966,481	6,616,850	2,964,224	10,389,069	8,987,960	9,626,005
12												
13												
14	Handy-Whitman - Jan 1 (3)	341	346	354	364	369	376	389	411	433	460	480
15	Index - Mains - Jul 1 (3)	344	351	357	367	376	379	394	421	440	465	486
16	Wtd. Avg. Annual Index	343.75	350.50	358.00	366.75	374.25	380.75	397.00	421.50	443.25	467.50	491.50
17	(14i)/4+(15i)/2+(14j)/4											
18												
19	Current Cost of Additions											
20	(11)*(16)/Current Index	$7,394,758	$3,230,763	$6,133,542	$16,583,600	$8,299,533	$23,192,450	$8,191,894	$3,456,503	$11,519,971	$9,449,374	$9,626,005
21												
22	Cumulative Net Additions	56,580,909	59,811,672	65,945,215	82,528,815	90,828,347	114,020,797	122,212,691	125,669,194	137,189,165	146,638,539	156,264,544
23												
24	Correction Factor for Replm'ts (2)											
25												
26	**Cum Growth Related Invest**	27,640,490	29,218,759	32,215,072	40,316,370	44,370,797	55,700,603	59,702,446	61,390,992	67,018,643	71,634,782	76,337,207

NOTES:
1 Source: Annual Reports
2 Source: Table 2 page 5
3 Hand-Whitman for Plastic Mains

Marginal Cost Study

Table - 2
National Grid - New Hampshire
Marginal Cost Study

Development of Capacity Related Investment - Distribution Reinforcement

Line No.	Year		Peak Vol, Dt	Reinf Cost Current $	Reinf Cost Constant $	Cumulative Total
	(1)		(2)		(3)	(4)
1	INVESTMENT FOR REINFORCEMENT	{1}{3}				
2	2010		156,640		515,000	515,000
3	2011		156,370		415,000	930,000
4	2012		157,602		27,000	957,000
5	2013		159,172		150,000	1,107,000
6	2014		160,484		223,150	1,330,150
7	2015		161,789		325,000	1,655,150
8	Year 6-10		168,326		1,800,000	3,455,150
9						
10						
11						
12						
13						
14	Total Reinforcement Cost		11,686	$0	$2,940,150	
15						
16						
17	**REGRESSION RESULTS**			Cum Invest Col. (4) vs Peak Vol Col. (2)		
18	Slope				227	
19	Y Intercept				(34,886,850)	
20	Coefficent of Determination (RSQR)				95.64%	
21	t-value				10.5	
22						
23	Regression Estimate	(18)			$226.85	
24						
25	Incremental Average Cost	(14), col. (3) / col. (2)			$251.60	
26						
27	UNIT COSTS FOR REINFORCEMENT					
28	$'s per Design Day Dt	{3}			$226.85	

NOTES:

1 Baseline forecast used to develop marginal distribution investment taken from engineer's estimates.

2 Results of Stoner model which identifies pressure problems on design hours. Areas with identified pressure deficiencies are reinforced, based on engineer's assessment of needed improvements. All such cost estimates based on test year costs.

3 Regression results are sufficiently robust to support the estimate of marginal costs.

Marginal Cost Study

Table - 2
National Grid - New Hampshire
Marginal Cost Study

Development of Distribution Main Extension Investment

Line No.	Year	Installed Footage	Cumulative Footage	Cost	Cost per Foot	Cost Index	Costs in 2008 $'s	Costs Per Foot	Cum Investm't	Design Day Demand
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					(3)/(1)		(3)*(5)	(6)/(1)		
		{1}		{2}		{3}				
1	1988	162,102								
2	1989	107,669	107,669	2,102,827	$19.53	1.755	3,691,212	$34.28	3,691,212	92,038
3	1990	76,265	183,934	1,724,250	$22.61	1.702	2,934,957	$38.48	6,626,170	93,194
4	1991	54,246	238,180	1,341,529	$24.73	1.655	2,220,072	$40.93	8,846,242	95,502
5	1992	77,355	315,535	1,489,922	$19.26	1.629	2,426,832	$31.37	11,273,074	98,553
6	1993	62,907	378,442	1,018,848	$16.20	1.585	1,615,367	$25.68	12,888,441	99,413
7	1994	56,777	435,219	975,268	$17.18	1.558	1,519,316	$26.76	14,407,757	101,984
8	1995	58,431	493,650	667,884	$11.43	1.526	1,019,456	$17.45	15,427,214	104,548
9	1996	83,333	576,983	1,138,184	$13.66	1.492	1,697,777	$20.37	17,124,991	109,582
10	1997	181,201	758,184	4,396,282	$24.26	1.458	6,411,788	$35.38	23,536,779	115,584
11	1998	88,330	846,514	1,792,794	$20.30	1.430	2,563,369	$29.02	26,100,148	116,731
12	1999	183,473	1,029,987	2,415,815	$13.17	1.402	3,387,655	$18.46	29,487,803	124,871
13	2000	153,120	1,183,107	3,440,754	$22.47	1.373	4,723,828	$30.85	34,211,631	120,288
14	2001	306,240	1,489,347	8,588,507	$28.05	1.340	11,509,887	$37.58	45,721,518	117,482
15	2002	(179,520)	1,309,827	5,787,927	($32.24)	1.313	7,601,246	($42.34)	53,322,764	114,304
16	2003	359,040	1,668,867	6,335,289	$17.65	1.291	8,178,055	$22.78	61,500,819	126,036
17	2004	187,889	1,856,756	2,804,933	$14.93	1.238	3,472,606	$18.48	64,973,425	131,800
18	2005	80,426	1,937,182	1,761,281	$21.90	1.166	2,053,783	$25.54	67,027,208	135,185
19	2006	61,870	1,999,052	1,531,679	$24.76	1.109	1,698,409	$27.45	68,725,617	138,600
20	2007	90,631	2,089,683	2,092,072	$23.08	1.051	2,199,473	$24.27	70,925,090	142,700
21	2008	54,727	2,144,410	1,779,635	$32.52	1.000	1,779,635	$32.52	72,704,725	145,130
22										0
23	Totals	2,306,512		53,185,679	$23.06		72,704,725	$31.52		
24										
25	REGRESSION RESULTS									
26							Cumulative Additions col. (8) vs Design Day col. (9)			
27	Slope						$1,390.05			
28	Y Intercept						($126,065,188)			
29	Coefficent of Determination (RSQR)						87.61%			
30	t Statistic						11.3			
31										
32							$'s / DDMMBtu			
33	Trended Cost Per Design Day Dt						$1,390.05			
34										
35	MARGINAL COST ESTIMATES									
36										
37	Trended Cost Per Design Day Dt		(27)*(28)		$1,390.05					
38										
39	Average Cost Per Design Day Dt									
40	1988-2008				$1,299.88					
41	1999-2008				$2,133.19					
42	1991-1998				$812.75					
43	**Marginal Cost for Main Additions**			{4}	**$1,390.05**					

NOTES:
1 Source: Total annual new footage installed less footage retired from accounting records. Note that negative amount in 2002 reflect adjustment for prior years.
2 Source: Plant accounting records.
3 Source: Handy Whitman Index of Plastic Mains
4 Regression results are sufficiently robust to support the estimate of marginal costs.

Marginal Cost Study

Table - 2
National Grid - New Hampshire
Marginal Cost Study

Regression Analysis of Distribution Capacity Costs

Line No.	Year	Total Mains Investment (2008 $)	Mains Investment for Growth (2008 $)	Ratio	Total Capacity Related Net Distribution Investment	Growth Related Distribution Investment	Cumulative Investment	Design Day Sendout
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
		{1}	{2}	(2)/(1)	{3} {4}	(3)*(4)		
1	1989	6,002,345	3,691,212	61%	6,199,772	3,812,622	3,812,622	92,038
2	1990	8,683,861	2,934,957	34%	9,298,620	3,142,732	6,955,355	93,194
3	1991	4,562,590	2,220,072	49%	4,810,256	2,340,582	9,295,937	95,502
4	1992	3,660,677	2,426,832	66%	3,918,642	2,597,849	11,893,786	98,553
5	1993	4,229,654	1,615,367	38%	4,168,182	1,591,890	13,485,676	99,413
6	1994	3,022,270	1,519,316	50%	3,288,917	1,653,361	15,139,037	101,984
7	1995	3,632,704	1,019,456	28%	3,770,753	1,058,198	16,197,235	104,548
8	1996	5,530,354	1,697,777	31%	5,748,644	1,764,790	17,962,025	109,582
9	1997	7,839,005	6,411,788	82%	7,982,365	6,529,048	24,491,073	115,584
10	1998	7,357,493	2,563,369	35%	7,394,758	2,576,353	27,067,425	116,731
11	1999	5,711,768	3,387,655	59%	3,230,763	1,916,169	28,983,594	124,871
12	2000	5,791,609	4,723,828	82%	6,133,542	5,002,720	33,986,314	120,288
13	2001	16,249,422	11,509,887	71%	16,583,600	11,746,594	45,732,908	117,482
14	2002	8,143,390	7,601,246	93%	8,299,533	7,746,993	53,479,901	114,304
15	2003	22,155,548	8,178,055	37%	23,192,450	8,560,796	62,040,697	126,036
16	2004	7,943,268	3,472,606	44%	8,191,894	3,581,299	65,621,996	131,800
17	2005	3,450,990	2,053,783	60%	3,456,503	2,057,064	67,679,060	135,185
18	2006	11,479,507	1,698,409	15%	11,519,971	1,704,396	69,383,457	138,600
19	2007	8,974,590	2,199,473	25%	9,449,374	2,315,832	71,699,288	142,700
20	2008	9,658,145	1,779,635	18%	9,626,005	1,773,713	73,473,001	145,130

21	Correction Factor for Replacements {4}	48.9%	
22			
23			
24			
25			
26			
27	REGRESSION RESULTS		Investment col. (6) vs Design Day col. (7)
28	Slope =		$1,392.70
29	Y Intercept =		($125,879,535)
30	Coefficent of Determination (RSQR)		87.65%
31	t Probability		11.3
32			
33	MARGINAL COST ESTIMATES		
34	Trended Cost Per Design Day Dt		$1,392.70
35			
36	Average Cost Per Design Day Dt		
37	1989-2008		$1,312.06
38	2000-2008		$1,589.50
39	2003-2008		$598.73
40			
41			
42	**Marginal cost estimate (29)*(35) {5}**	**$1,392.70**	

NOTES:
1 Source: Successive Differences in Table 2, page 2, line 3 adjusted by Handy Whitman Index
2 Source: Table 2, Page 4
3 Source: Table - 2, Page 2.
4 Based on the average of the ratios (mains extension investments over mains total investment)
5 This estimate is provided for comparison purposes only. Refer to pages 3 & 4 of this table for the development of a more accurate estimate, eliminating the error associated with estimating replacements.

Marginal Cost Study

Table - 3
National Grid - New Hampshire
Marginal Cost Study

Services and Meters Investment

Line No.	Description		--------- Residential ---------		---------- Small C&I ----------		-------- Medium C&I --------		------------------------------ Large C&I ------------------------------			
			ResNonHt R-1	ResHt R-3&R-4	SmHiW G-41	SmLoW G-51	MdHiW G-42	MdLoW G-52	LgHiW G-43	LgLF<90 G-53	LgLF<110 G-54	LgLF>110 G-63
			(1)	(2)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	**SERVICE COSTS**											
2												
3												
4	Representative Cost	{1}	$2,414	$2,414	$2,982	$2,982	$7,080	$7,080	$8,064	$8,064	$15,606	$15,606
5												
6												
7												
8	Services per Customer	{2}	0.76	0.76	0.76	0.76	1.00	1.00	1.00	1.00	1.00	1.00
9												
10												
11												
12	**Average Service Cost per Cust.**		**$1,838**	**$1,838**	**$2,270**	**$2,270**	**$7,080**	**$7,080**	**$8,064**	**$8,064**	**$15,606**	**$15,606**
13	(4)*(8)											
14												
15												
16	**METER COSTS**											
17												
18												
19	Current Unit Cost for Metering	{3}	$199	$199	$298	$298	$1,143	$1,143	$2,405	$2,405	$10,840	$10,840
20												
21												
22												
23	Customer Count	{4}										
24												
25												
26	Meters per Customer		1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
27												
28												
29												
30	**Avg Metering Cost per Cust.**		**$205**	**$205**	**$306**	**$306**	**$1,175**	**$1,175**	**$2,472**	**$2,472**	**$11,142**	**$11,142**
31	(19)*(26)											

NOTES:
1 Source: Typical service costs as estimated by the Engineering Department as 2008 costs including overhead loading.
2 Source: Services per Meter computed by assigning one service to each medium and large C&I customer and computing the ratio of remaining services to the total of residential and small C&I customers.
3 Source: Replacement Cost New Analysis including an allowance for spare meters.

Table - 4
National Grid - New Hampshire
Marginal Cost Study

Summary of Marginal Commodity Costs

Line No.	Description	--------- Residential ---------		---------- Small C&I ----------		-------- Medium C&I --------		------------------------------ Large C&I ----------------------------				Total Company
		ResNonHt R-1	ResHt R-3&R-4	SmHiW G-41	SmLoW G-51	MdHiW G-42	MdLoW G-52	LgHiW G-43	LgLF<90 G-53	LgLF<110 G-54	LgLF>110 G-63	
	LOAD WEIGHTED MARGINAL COMMODITY	(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1												
2												
3												
4	**MARGINAL COMMODITY COSTS NOT COMPUTED FOR DISTRIBUTION MARGINAL COST STUDY**											
5												
6												
7												
8												
9												
10												

Marginal Cost Study

Table - 4
National Grid - New Hampshire
Marginal Cost Study

Development of Capacity Related Production Expense

Line No.	Year	Total Capacity Related Expenses	Cost Index	Expense 2008 Dollars	Design Day Sendout, Dt	Average Cost per Design Day Dt
	(1)	(2)	(3)	(4)	(5)	(6)
		{1}				
1	1989	1,013,183	1.5605	$1,581,072	92,038	$17.18
2	1990	1,203,578	1.5025	1,808,401	94,799	19.08
3	1991	1,075,515	1.4511	1,560,651	95,896	16.27
4	1992	1,013,237	1.4175	1,436,238	98,274	14.61
5	1993	1,075,775	1.3868	1,491,892	101,510	14.70
6	1994	1,227,075	1.3582	1,666,619	102,395	16.28
7	1995	1,224,047	1.3305	1,628,563	105,007	15.51
8	1996	1,266,733	1.3056	1,653,876	107,684	15.36
9	1997	1,335,709	1.2830	1,713,669	112,869	15.18
10	1998	1,338,075	1.2686	1,697,536	119,052	14.26
11	1999	1,152,648	1.2502	1,441,095	120,233	11.99
12	2000	671,418	1.2238	821,654	128,617	6.39
13	2001	568,616	1.1967	680,475	124,000	5.49
14	2002	461,974	1.1777	544,047	122,483	4.44
15	2003	178,126	1.1528	205,351	116,027	1.77
16	2004	226,052	1.1210	253,409	128,044	1.98
17	2005	218,661	1.0848	237,209	136,000	1.74
18	2006	380,970	1.0506	400,247	138,746	2.88
19	2007	360,175	1.0214	367,870	142,000	2.59
20	2008	360,175	1.0000	360,175	146,900	2.45
21						
22						
23						
24	**REGRESSION RESULTS**				Expense (4)	Avg Cost (6)
25					vs Demand (5)	vs Year (1)
26	Slope =				-30.0494	-1.0182
27	Y Intercept =				4582123	2045
28	Coefficent of Determination (R**2)				65.24%	87.15%
29	t Value				(5.8)	(11.0)
30						
31	**MARGINAL COST ESTIMATES**					
32	Trended Cost Per Design Day Dt				($30.05)	
33	Time Series Predicted Avg Cost (2008*slope)+intercept					($2.72)
34						
35	Average Cost Per Design Day Dt					
36	1989-2008					$9.24
37	2000-2008					$3.27
38	2002-2008					$2.55
39	Current Average Cost per Design Day Dt					$2.45
40						
41	Assumed Marginal Cost			(35) {2}		$2.55
42						
43						
44	Percentage Related to Transportation				{3}	11.9%
45	Transportation Related Investment				(39)*(42)	$0.30
46	Gas Supply Related Investment				(39)*[1-(42)]	$2.24

NOTES:

1 Source: Booked maintenance and other expenses for Manufactured Gas, Accounts 1701, 1707, 1722, 1724 & 1725.

2 Post merger 2002-2008 average used for marginal cost.

Marginal Cost Study

Table - 5
National Grid - New Hampshire
Marginal Cost Study

Development of Capacity Related Expense - T & D

Line No.	Year	Capacity Related Expenses	Cost Index	Expense 2008 Dollars	Design Day Sendout	Avg Cost Per Des'n Day Dt
	(1)	(2)	(3)	(4)	(5)	(6)
		{1}	{2}			
1	1989	$1,945,026	1.5605	$3,035,212	92,038	$32.98
2	1990	1,893,462	1.5025	2,844,965	93,194	30.53
3	1991	1,918,550	1.4511	2,783,957	95,502	29.15
4	1992	2,040,158	1.4175	2,891,872	98,553	29.34
5	1993	2,151,230	1.3868	2,983,339	99,413	30.01
6	1994	2,529,506	1.3582	3,435,587	101,984	33.69
7	1995	2,598,141	1.3305	3,456,759	104,548	33.06
8	1996	2,558,264	1.3056	3,340,128	109,582	30.48
9	1997	2,645,969	1.2830	3,394,688	115,584	29.37
10	1998	2,768,391	1.2686	3,512,094	116,731	30.09
11	1999	2,626,392	1.2502	3,283,640	124,871	26.30
12	2000	2,787,674	1.2238	3,411,441	120,288	28.36
13	2001	2,502,816	1.1967	2,995,174	117,482	25.49
14	2002	2,228,671	1.1777	2,624,610	114,304	22.96
15	2003	3,448,665	1.1528	3,975,766	126,036	31.54
16	2004	3,342,856	1.1210	3,747,417	131,800	28.43
17	2005	3,654,583	1.0848	3,964,581	135,185	29.33
18	2006	4,078,867	1.0506	4,285,262	138,600	30.92
19	2007	4,142,649	1.0214	4,231,158	142,700	29.65
20	2008	4,410,831	1.0000	4,410,831	145,130	30.39
21						
22						
23						

24	**REGRESSION RESULTS**		Expense (4)	Avg Cost (6)
25			vs Demand (5)	vs Year (1)
26	Slope =		26.6057	-0.1330
27	Y Intercept =		339470	295
28	Coefficent of Determination (RSQR)		71.5%	9.5%
29	t Statistic		6.72	-1.38
30				
31	**MARGINAL COST ESTIMATES**			
32	Trended Cost Per Design Day Dt		$26.61	
33	Time Series Predicted Avg Cost = 2008 * Slope + Intercept			$27.94
34				
35	Average Cost Per Design Day Dt			
36	1989-2008			$29.53
37	1999-2008			$28.49
38	2002-2008			$29.17
39	Current Average Cost per Design Day Dt			$30.39
40				
41	**Assumed Marginal Cost**	{3}	(34)	**$29.17**

NOTES:
1 Source: Table - 5, Page 2.
2 Source: GNP Implicit Price Deflator.
3 Average costs per DD Dt appear to be relatively stable over time with long term.
Used post merger costs for consistency with capacity related production expense.

Marginal Cost Study

Table - 5
National Grid - New Hampshire
Marginal Cost Study

Operations Expense Data - T&D

Line No.	Acct No. Description	1987		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	(1)	(2)	#	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	TRANS & DIST EXPENSE	(1)												
1	**DISTRIBUTION EXPENSE**													
2	OPERATIONS EXPENSE													
3	1756 -SUPERINTENDENCE	(2)		876,635	911,187	971,398	1,008,416	1,044,727	1,097,962	1,140,215	1,192,103	1,249,414	1,302,560	1,321,293
4	1761 -OPER OF DIST LINES			499,455	506,645	465,317	427,244	425,732	477,794	418,145	419,195	410,571	372,897	335,345
5	1762.1-METER OPERATING LABOR AND EXPENSE			560,876	526,850	531,909	516,860	472,644	455,773	367,338	312,919	350,967	377,846	520,572
6	1762.2-OTHER EXPENSE ON CUST PREM	(3)		1,521,593	1,575,073	1,593,768	1,646,356	1,660,222	1,867,950	1,836,058	1,625,448	1,559,297	1,608,343	1,486,528
7														
8														
9														
10														
11														
12														
13														
14	Marginal Oper Exp	(3)+(4)+(5)	#	1,936,966	1,944,682	1,968,624	1,952,520	1,943,103	2,031,529	1,925,698	1,924,217	2,010,952	2,053,303	2,177,210
15														
16	**MAINTENANCE**													
17	1765- MAINTENANCE OF STRUCTURES			87,025	99,537	52,538	39,076	25,516	77,843	51,158	37,502	47,161	36,752	
18	1768- MAINTENANCE OF DISTRIBUTION LINES			1,210,020	1,134,825	1,219,471	1,361,653	1,465,370	1,714,317	1,824,935	1,752,954	1,800,709	1,929,672	1,853,705
19	1771- MAINT OF SERVICES			299,570	282,422	308,611	337,191	343,124	319,008	531,891	487,791	491,614	523,597	483,637
20	1772- MAINTENANCE OF CUSTOMER'S METERS			154,861	154,842	166,660	205,783	235,959	239,352	164,524	121,875	141,279	124,235	107,248
21														
22														
23														
24														
25	Marginal Maint Exp	(17)+(18)+(19)+(20)	#	1,751,476	1,671,626	1,747,280	1,943,703	2,069,969	2,350,520	2,572,508	2,400,122	2,480,763	2,614,256	2,444,590
26														
27	MARGINAL T & D Exp & Superintendenc	(14)+(25)	#	3,688,442	3,616,308	3,715,904	3,896,223	4,013,072	4,382,049	4,498,206	4,324,339	4,491,715	4,667,559	4,621,800
28														
29	Allocation of Dist Lines to Customer Component													
30	Services Investment		#	23,205,608	25,730,066	28,432,370	30,670,769	33,199,016	35,476,909	37,744,390	40,038,869	42,706,896	46,615,422	49,171,645
31	Mains Investment		#	41,637,189	46,738,847	49,495,895	51,743,320	54,299,184	56,239,217	58,619,137	62,326,668	67,701,530	72,847,284	76,920,478
32	Services/(Services+Mains)	(30)/[(30)+(31)]	#	35.79%	35.50%	36.49%	37.22%	37.94%	38.68%	39.17%	39.11%	38.68%	39.02%	39.00%
33	Customer-related Dist Lines Expense	(32)*(4)	#	178,742	179,884	169,772	159,001	161,533	184,817	163,782	163,962	158,812	145,508	130,773
34														
35	Customer Related Allocation of Superintendence Expense													
36	Cust %	[(5)+(19)+(20)+(33)]/[(27)+(6)-(3)]	#	27.6%	26.7%	27.1%	26.9%	26.2%	23.3%	23.6%	22.8%	23.8%	23.5%	25.9%
37	Customer Superintendence	(3)*(31)	#	241,553	243,539	263,535	271,074	273,848	255,511	269,473	272,249	297,332	306,743	342,874
38														
39	**Customer - Related**		#	1,435,602	1,387,538	1,440,488	1,489,908	1,487,109	1,454,460	1,497,008	1,358,797	1,440,005	1,477,929	1,585,104
40		(5)+(19)+(20)+(33)+(37)												
41														
42	**Capacity Expenses**		#	1,945,026	1,893,462	1,918,550	2,040,158	2,151,230	2,529,506	2,598,141	2,558,264	2,645,969	2,768,391	2,626,392
43	(Other excluding Equip on Cust Premises)													
44	(27)-(39)-(3)*(6)/[(27)+(6)-(3)]													

Line No.	Acct No. Description	2000	2001	2002	2003	2004	2005	2006	2007	2008
	(1)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
	TRANS & DIST EXPENSE									
1	**DISTRIBUTION EXPENSE**									
2	OPERATIONS EXPENSE									
3	1756 -SUPERINTENDENCE	1,133,718	351,836	57,284	320,464	312,197	194,191	562,811	579,859	589,212
4	1761 -OPER OF DIST LINES	459,144	2,201,098	1,347,852	1,142,383	1,309,514	994,006	744,596	777,989	1,056,016
5	1762.1-METER OPERATING LABOR AND EXPENSE	564,951	794,765	617,813	578,786	762,729	1,054,884	1,009,092	1,180,415	1,314,235
6	1762.2-OTHER EXPENSE ON CUST PREM	1,241,404	730,015	509,277	326,395	137,913	28,052	108,592	98,155	81,652
7										
8										
9										
10										
11										
12										
13										
14	Marginal Oper Exp	2,157,813	3,347,699	2,022,949	2,041,633	2,384,440	2,243,081	2,316,499	2,530,263	2,959,463
15										
16	**MAINTENANCE**									
17	1765- MAINTENANCE OF STRUCTURES		9,504	1,277	18,871	22,753	25,340	21,010	19,842	24,632
18	1768- MAINTENANCE OF DISTRIBUTION LINES	1,959,501	998,586	1,377,884	2,543,029	2,338,751	2,910,168	3,268,164	3,316,526	3,412,046
19	1771- MAINT OF SERVICES	315,671	601,828	658,851	672,980	599,662	942,821	978,716	1,117,239	1,223,678
20	1772- MAINTENANCE OF CUSTOMER'S METERS	91,997	106,371	110,542	217,685	234,867	147,822	150,171	152,318	175,277
21										
22										
23										
24										
25	Marginal Maint Exp	2,367,169	1,716,289	2,148,554	3,452,565	3,196,033	4,026,151	4,418,061	4,605,925	4,835,633
26										
27	MARGINAL T & D Exp & Superintendenc	4,524,982	5,063,988	4,171,503	5,494,198	5,580,473	6,269,232	6,734,560	7,144,188	7,795,096
28										
29	Allocation of Dist Lines to Customer Component									
30	Services Investment	54,085,437	57,948,787	61,018,971	66,715,050	72,252,215	73,756,127	80,850,399	87,209,710	91,485,682
31	Mains Investment	81,138,985	93,264,062	99,340,539	116,503,764	122,919,791	125,879,287	136,231,864	#########	#########
32	Services/(Services+Mains)	39.00%	39.00%	39.00%	39.00%	39.00%	39.00%	39.00%	39.00%	39.00%
33	Customer-related Dist Lines Expense	179,051	858,353	525,616	445,491	510,666	387,629	290,367	303,389	411,810
34										
35	Customer Related Allocation of Superintendence Expense									
36	Cust %	24.9%	43.4%	41.4%	34.8%	39.0%	41.5%	38.7%	41.3%	42.9%
37	Customer Superintendence	281,839	152,659	23,699	111,574	121,729	80,601	217,616	239,635	252,663
38										
39	**Customer - Related**	1,433,509	2,513,977	1,936,522	2,026,515	2,229,653	2,613,757	2,645,962	2,992,996	3,377,663
40										
41										
42	**Capacity Expenses**	2,787,674	2,502,816	2,228,671	3,448,665	3,342,856	3,654,583	4,078,867	4,142,649	4,410,831
43	(Other excluding Equip on Cust Premises)									
44										

NOTES:

1 Source: Annual Reports

2 Costs in this account are joint between customer and capacity components. Individual component costs are computed by allocating on remaining expenses.

3 Costs in this account are not marginal.

Marginal Cost Study

Table - 6
National Grid - New Hampshire
Marginal Cost Study

Development of Customer-Related Plant Expense

Line No.	Year	Services and Meters Expenses	Mains Customer Related Expenses	Total Customer Related Expenses	Cost Index	Expense 2008 Dollars	Annual Customers	Average Cost per Customer
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		{1}		(2)+(3)	{2}	(4)*(5)		(6)/(7)
1	1989	1,435,602	0	1,435,602	1.5605	2,240,257	58,809	$38.09
2	1990	1,387,538	0	1,387,538	1.5025	2,084,804	60,216	$34.62
3	1991	1,440,488	0	1,440,488	1.4511	2,090,253	60,958	$34.29
4	1992	1,489,908	0	1,489,908	1.4175	2,111,907	61,725	$34.21
5	1993	1,487,109	0	1,487,109	1.3868	2,062,332	62,566	$32.96
6	1994	1,454,460	0	1,454,460	1.3582	1,975,455	64,044	$30.85
7	1995	1,497,008	0	1,497,008	1.3305	1,991,730	65,385	$30.46
8	1996	1,358,797	0	1,358,797	1.3056	1,774,076	66,464	$26.69
9	1997	1,440,005	0	1,440,005	1.2830	1,847,477	67,928	$27.20
10	1998	1,477,929	0	1,477,929	1.2686	1,874,961	69,588	$26.94
11	1999	1,585,104	0	1,585,104	1.2502	1,981,773	71,291	$27.80
12	2000	1,433,509	0	1,433,509	1.2238	1,754,270	73,106	$24.00
13	2001	2,513,977	0	2,513,977	1.1967	3,008,531	74,959	$40.14
14	2002	1,936,522	0	1,936,522	1.1777	2,280,558	77,003	$29.62
15	2003	2,026,515	0	2,026,515	1.1528	2,336,252	77,630	$30.09
16	2004	2,229,653	0	2,229,653	1.1210	2,499,491	77,630	$32.20
17	2005	2,613,757	0	2,613,757	1.0848	2,835,467	83,873	$33.81
18	2006	2,645,962	0	2,645,962	1.0506	2,779,850	84,066	$33.07
19	2007	2,992,996	0	2,992,996	1.0214	3,056,942	84,396	$36.22
20	2008	3,377,663	0	3,377,663	1.0000	3,377,663	87,440	$38.63
21								
22								
23				Expense (6)		Unit Cost (8)		
24	REGRESSION RESULTS			vs Customers (7)		vs Year (1)		
25	Slope =			39.2782		0.0384		
26	Y Intercept =			-508373		-45		
27	Coefficent of Determination (RSQR)			56.8%		0.3%		
28	t Value			4.86		0.22		
29								
30	MARGINAL COST ESTIMATES							
31	Trended Cost Per Customer			$39.28		32.46		
32								
33	Average Cost Per Customer:							
34	1989-2008					$32.16		
35	1999-2008					$32.74		
36	2002-2008					$33.51		
37	Current Average Cost per Customer					$38.63		
38	Time Series Test Year Prediction					$32.57		
39								
40	**Assumed Marginal Cost** {3}					**$32.16**		

NOTES:
1 Source: Table - 5, Page 2.
2 Source: GNP Implicit Price Deflator.
3 Regression results for time series are not sufficiently robust for marginal cost estimate. Mean, median, and average of means are within a close range, indicating similar estimates of marginal costs. Employed long term average marginal cost estimate as most representative.

Marginal Cost Study

Table - 6
National Grid - New Hampshire
Marginal Cost Study

Class Weighted Customer Plant Related Expense

Line No.	Customer Groups	Number of Customers	Service & Meter Cost Assigned	Total Cost	Relative Weight Per Cust	System Avg Marginal Cost per Cust	Marginal Costs Per Cust
	------ Customer Weightings ------				----------- Customer Weightings ------------		
	(1)	(2)	(3)	(4)=(3)*(2)	(5)=(3)/avg(3)	(6)	(7)=(5)*(6)
		{1}	{2}		{3}	{4}	
1	ResNonHt	4,482	$2,043	9,158,953	0.911	$32.16	**$29.29**
2	ResHt	69,455	2,043	141,916,980	0.911	$32.16	**$29.29**
3	SmLoS	7,530	2,576	19,399,121	1.148	$32.16	**$36.93**
4	SmHiS	1,308	2,576	3,369,701	1.148	$32.16	**$36.93**
5	MdLoS	1,484	8,256	12,249,546	3.679	$32.16	**$118.33**
6	MdHiS	309	8,256	2,552,880	3.679	$32.16	**$118.33**
7	LgLoS	40	10,535	421,969	4.695	$32.16	**$151.00**
8	LgLF<90	35	10,535	371,721	4.695	$32.16	**$151.00**
9	LgLF<110	5	26,748	143,103	11.920	$32.16	**$383.38**
10	LgLF>110	15	26,748	405,234	11.920	$32.16	**$383.38**
11							
12							
13							
14	Total	84,664	100,317	189,989,208	1.000	$32.16	**$32.16**
15							
16	Avg Cost per cust		$2,244.04				
17	(4) Total / (2) Total						

Marginal Cost Study

Table - 6
National Grid - New Hampshire
Marginal Cost Study

Development of Customer Accounting & Marketing Expense

Line No.	Year	Customer Accounting Expenses (Excl. Uncoll)	Marketing Services Expenses 1786-1788	Total Customer Related Expenses	Cost Index	Expense in 2008 Dollars	Annual Customers	Average Cost per Customer
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		{1}	{1}	(2)+(3)	{2}	(4)*(5)		(6)/(7)
1	1989	2,358,716	505,676	2,864,392	1.5605	4,469,884	58,809	76.01
2	1990	2,708,206	733,906	3,442,112	1.5025	5,171,844	60,216	85.89
3	1991	2,779,210	785,847	3,565,057	1.4511	5,173,159	60,958	84.86
4	1992	2,906,732	833,935	3,740,667	1.4175	5,302,300	61,725	85.90
5	1993	2,943,968	1,088,668	4,032,636	1.3868	5,592,485	62,566	89.39
6	1994	2,886,335	1,049,296	3,935,631	1.3582	5,345,393	64,044	83.46
7	1995	2,823,394	854,466	3,677,860	1.6194	5,956,040	65,385	91.09
8	1996	2,730,030	965,699	3,695,729	1.3056	4,825,229	66,464	72.60
9	1997	2,414,940	975,279	3,390,219	1.2830	4,349,536	67,928	64.03
10	1998	2,337,755	1,039,833	3,377,588	1.2686	4,284,946	69,588	61.58
11	1999	2,235,895	1,084,002	3,319,897	1.2502	4,150,693	71,291	58.22
12	2000	2,088,686	954,001	3,042,687	1.2238	3,723,516	73,106	50.93
13	2001	855,662	462,788	1,318,450	1.1967	1,577,818	74,959	21.05
14	2002	1,060,725	54,167	1,114,892	1.1777	1,312,960	77,003	17.05
15	2003	1,966,563	374,418	2,340,981	1.1528	2,698,781	77,630	34.76
16	2004	1,980,273	1,191,064	3,171,337	1.1210	3,555,140	77,630	45.80
17	2005	2,139,209	1,064,874	3,204,083	1.0848	3,475,868	83,873	41.44
18	2006	2,472,634	1,658,193	4,130,827	1.0506	4,339,851	84,066	51.62
19	2007	2,655,901	1,334,932	3,990,833	1.0214	4,076,098	84,396	48.30
20	2008	2,621,436	1,306,196	3,927,632	1.0000	3,927,632	87,440	44.92
21								
22								
23								
24	REGRESSION RESULTS					Expense (5)		Unit Cost (8)
25						vs Customers (6)		vs Year (1)
26	Slope =					-78.8144		-3.0397
27	Y Intercept =					9797048		6135
28	Coefficent of Determination (RSQR)					33.8%		62.48%
29	t Probability					-3.03		-5.47
30								
31	MARGINAL COST ESTIMATES							
32	Trended Cost Per Customer					($78.81)		
33	Time Series predicted Average Cost (2008)*slope+intercept							$31.57
34								
35	Average Cost Per Customer:							
36	1989-2008					$58.30		
37	1999-2008					$41.49		
38	2002-2008					$40.88		
39	Current Average Cost per Customer					$44.92		
40	Average Cost Per Customer 2004-2008:					$48.24		
41								
42	**Assumed Marginal Cost**		(3)			**$40.88**		

NOTES:
1 Source: Cost data from Annual Reports, ACCTS 1780, 1781, 1784 excluding Uncollectible Accounts Expense in Account 1783.
2 Source: GNP Implict Price Deflator.
3 Regression results for time series are insufficiently robust for marginal cost, but confirm a declining trend. Therefore, the current average cost over near term, post merger period will be used to estimate the Marginal Cost.

Marginal Cost Study

Table - 6
National Grid - New Hampshire
Marginal Cost Study

Class Weighted Customer Accounting & Marketing Expense

Line No.	Customer Groups	Number of Customers	Average Costs Assigned	Average Costs Per Cust	Relative Weight Per Cust	Company Avg Cost per Cust	Marginal Costs Per Cust
	(1)	(2)	(3) = Total' * (2)/SUM(2) {1}	(4)= (3)/(2)	(5)=(4)/avg(4) {3}	(6) {4}	(7)= (5)*(6)
1	ResNonHt	4,482	207,944	$46.39	1.000	$40.88	$40.88
2	ResHt	69,455	3,222,075	$46.39	1.000	$40.88	$40.88
3	SmLoS	7,530	349,311	$46.39	1.000	$40.88	$40.88
4	SmHiS	1,308	60,677	$46.39	1.000	$40.88	$40.88
5	MdLoS	1,484	68,833	$46.39	1.000	$40.88	$40.88
6	MdHiS	309	14,345	$46.39	1.000	$40.88	$40.88
7	LgLoS	40	1,858	$46.39	1.000	$40.88	$40.88
8	LgLF<90	35	1,637	$46.39	1.000	$40.88	$40.88
9	LgLF<110	5	248	$46.39	1.000	$40.88	$40.88
10	LgLF>110	15	703	$46.39	1.000	$40.88	$40.88
11							
12							
13							
14	Total	84,664	3,927,632	$46.39	1.135	$40.88	$40.88

NOTES:
1 Customer class weighting factors assume equal expenses for all customers.
2 Total taken from Table 6, Page 3, column 4.
3 Relative weights based on System average = 1.00.
4 Source: Table 6, Page 3.

Marginal Cost Study

Table - 6
National Grid - New Hampshire
Marginal Cost Study

Class Weighted Uncollectible Accounts Expense

Line No.	Customer Groups	Gross Write Offs	Percent of Total	Adjusted Uncoll. Accts. Exp.	Total Normalized Revenues	Write-off Percentage
	(1)	(2)	(3)	(4)	(5)	(6)
		{1}		{2}	{1}	(6)=(4)/(5)
				5,518,477		
1	ResNonHt	116,643	1.93%	$106,589	$1,858,566	5.73%
2	ResHt	5,287,468	87.55%	$4,831,692	$87,682,607	5.51%
3	SmLoS	355,009	5.88%	$324,408	$25,269,035	1.28%
4	SmHiS	186,869	3.09%	$170,761	$30,292,418	0.56%
5	MdLoS	5,539	0.09%	$5,062	$3,156,032	0.16%
6	MdHiS	87,510	1.45%	$79,967	$4,743,861	1.69%
7	LgLoS	0	0.00%	$0	$6,364,146	0.00%
8	LgLF<90	0	0.00%	$0	$1,592,452	0.00%
9	LgLF<110	0	0.00%	$0	$215,136	0.00%
10	LgLF>110	0	0.00%	$0	$323,852	0.00%
11						
12						
13						
14	Total	6,039,038	100.00%	5,518,477	$161,498,104	3.42%
15						

Adjusted Pro forma writeoff rate 3.42%

NOTES:
1 Uncollectible expense by class allocated to classes based upon percentage of class gross writeoffs proportions.
2 Source: Uncollectible Accounts Expense from Functional COSS.

Table - 7
National Grid - New Hampshire
Marginal Cost Study

Development of A & G Loading Factors

Line No.	Description	#	#	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
1	**Nonplant Related Expenses**																						
2	1790 Data Processing	0	0	1,221,330	1,268,573	1,213,411	1,148,132	1,108,635	1,152,448	1,180,023	1,216,082	1,251,689	1,211,703	1,297,657	939,758	0	0	0	0	0	0	0	0
3	1791 General Office Salaries	0	0	1,591,407	1,507,337	1,697,784	1,710,938	1,721,760	1,781,241	1,791,207	1,876,303	1,745,863	1,729,686	2,014,845	2,016,463	153,735	2,832,950	2,785,081	3,138,934	2,858,060	3,704,184	3,780,121	3,217,166
4	1793 Office Supplies	0	0	278,118	315,340	323,298	318,817	349,060	347,560	332,022	353,660	324,191	330,734	348,348	476,545	128,028	2,987,475	2,054,161	1,446,136	1,317,507	1,285,586	1,258,535	1,907,292
5	1794 Super. Fees & Spec Servs	0	0	683,729	629,173	702,387	769,761	718,935	839,542	670,272	625,714	558,649	567,459	580,687	523,092	259,214	169,183	499,375	930,684	653,279	560,762	680,692	1,113,799
6	1799 Injury & Damages	0	0	1,803	953	0	0	0	0	0	0	0	0	0	116,869	389,048	1,086	25,580	108,423	131,959	120,049	172,173	132,330
7	1800 Employee Welfare & Relief	0	0	203,570	188,696	253,807	136,711	145,458	87,700	131,950	126,335	123,090	131,238	124,465	668,196	1,665,715	1,792,716	1,734,487	2,722,240	2,414,329	2,324,499	1,874,415	2,757,364
8	1801 Misc Gen Exp	0	0	635,012	542,610	617,446	662,680	657,151	654,017	577,760	640,250	684,367	767,033	828,965	852,389	8,054,082	(38,334)	45,411	180,962	(160,685)	68,997	50,986	431,254
9	1807 Duplicate Misc Charges	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10																							
11																							
12	Taxes other than Income			1,295,017	1,464,186	1,454,198	1,560,416	1,610,506	1,600,652	942,578	870,003	855,403	882,557	992,232	N/A	438,190	249,220	313,602	225,922	115,583	210,517	241,783	320,994
13	Total Non-Plant	0	0	4,688,656	4,648,295	5,048,920	5,159,323	5,202,870	5,310,712	4,445,789	4,492,265	4,291,563	4,408,707	4,889,542	4,653,554	11,088,012	7,994,296	7,457,697	8,753,301	7,330,032	8,274,594	8,058,705	9,880,199
14																							
15	**Plant Related Expenses**																						
16																							
17																							
18	1797 Regulatory Exp	0	0	24,430	111,342	101,766	78,877	130,058	46,822	38,180	99,269	93,331	22,670	26,354	24,266	290,765	276,670	332,004	332,004	608,709	622,287	636,069	649,180
19	1798 Property Ins	0	0	923,310	927,329	919,552	944,964	910,245	936,439	807,797	899,988	896,372	875,967	878,375	1,017,636	709,988	850,716	75,865	69,442	77,906	74,278	69,827	80,621
20	1802 Gen Plt Maint	0	0	56,489	58,952	69,539	85,434	85,756	91,728	88,022	91,404	94,033	67,825	264,594	298,187	0	0	0	0	0	0	0	0
21	1803 Rents	0	0	360,011	331,631	336,945	326,547	319,938	267,824	266,573	315,189	338,457	344,628	454,772	868,951	0	0	5,893	0	0	0	0	4,722
22	Total Plant Related Expenses	#	#	$1,364,240	$1,429,254	$1,427,802	$1,435,822	$1,445,997	$1,342,813	$1,200,572	$1,405,850	$1,422,193	$1,311,090	$1,624,095	$2,209,040	$1,000,753	$1,127,386	$413,762	$401,446	$686,615	$696,565	$705,896	$734,523
23																							
24	Total Allocable O&M (Total O&M less non-labor production																						
25	costs and A&G expenses)	0	0	10,604,454	11,525,784	11,587,219	11,850,450	12,424,389	13,150,168	12,609,283	12,467,597	12,375,290	12,463,871	11,869,517	10,734,412	8,843,331	8,413,769	10,311,527	11,145,574	15,427,721	14,251,758	15,753,732	13,573,314
26																							
27	A & G Loading Factor Nonplant Rel Exp																						
28	Line (13)/(25)	#	#	44.21%	40.33%	43.57%	43.54%	41.88%	40.39%	35.26%	36.03%	34.68%	35.37%	41.19%	43.35%	125.38%	95.01%	72.32%	78.54%	47.51%	58.06%	51.15%	72.79%
29	Average 2003 - 2008 = 63.40%																						
30																							
31																							
32	Total Gross Plant $	0	#	90,119,098	99,467,339	106,202,255	112,423,806	118,656,821	124,120,097	129,472,654	135,806,318	145,866,429	156,424,246	166,682,099	174,018,261	189,363,169	202,252,941	227,692,187	239,474,276	242,115,491	263,405,595	280,967,870	298,931,548
33																							
34																							
35	A & G Loading Factor Plant Rel Exp																						
36	Line (22)/(32)		#	1.51%	1.44%	1.34%	1.28%	1.22%	1.08%	0.93%	1.04%	0.97%	0.84%	0.97%	1.27%	0.53%	0.56%	0.18%	0.17%	0.28%	0.26%	0.25%	0.25%
37	Average 2003 - 2008 = 0.23%																						

NOTES:
1 Source: Annual Reports

Table - 7
National Grid - New Hampshire
Marginal Cost Study

Development of Miscellaneous Loading Factors

Line No.	Description		#	#	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
1	**Materials and Supplies and Prepayments Loader**													
2	Materials and Supplies		0	0	5,171,473	5,759,164	6,009,797	9,804,208	10,148,000	9,443,673	9,397,268	10,278,497	10,579,101	10,839,994
3	Fuel Inventory (included above)		0	0	3,443,323	4,124,553	4,166,243	8,118,686	8,523,369	7,903,225	7,899,072	8,825,292	8,929,160	9,478,909
4	Prepayments		0	0	1,901,133	1,176,084	1,135,297	1,196,252	1,286,591	1,062,916	1,155,521	1,097,855	1,087,594	940,831
5	Fuel Related Prepayments		0	0	0	3,940	0	21,226	0	0	0	0	0	0
6	Total Utility Plant		0	##	90,119,098	99,467,339	106,202,255	112,423,806	118,656,821	124,120,097	129,472,654	135,806,318	145,866,429	156,424,246
7														
8	Non-Fuel Loader (2-3+4-5)/(6)	(1)	##	##	4.03%	2.82%	2.80%	2.54%	2.45%	2.10%	2.05%	1.88%	1.88%	1.50%
9	Average 2003 - 2008 = 0.13%													
10														
11														
12														
13	**General Plant Loading Factor**													
14	Total General Plant		0	##	5,933,582	6,503,724	6,849,445	7,659,250	7,970,207	8,384,740	8,221,795	8,870,155	9,203,222	9,478,301
15	Total Utility Plant		0	##	90,119,048	99,467,339	106,202,255	112,423,806	118,656,821	124,120,097	129,472,654	135,806,318	145,866,429	156,424,246
16														
17	Gen Plant Factor (14)/(15-14)	(1)	##	##	7.05%	7.00%	6.89%	7.31%	7.20%	7.24%	6.78%	6.99%	6.73%	6.45%
18	Average 2003 - 2008 = 6.25%													
19														
20														
21														
22	**Loss Factor**													
23	Total Sendout		##	##	96,483,220	85,553,690	89,662,710	101,241,230	103,026,460	108,622,770	105,688,400	113,169,580	117,213,840	112,364,220
24	Total Sales		##	##	94,360,589	83,671,509	87,690,130	99,013,923	100,759,878	106,233,069	103,125,170	113,132,820	113,898,420	111,015,990
25														
26	Loss Factor (24)/(23)		##	##	97.80%	97.80%	97.80%	97.80%	97.80%	97.80%	97.57%	99.97%	97.17%	98.80%
27	Average 1989 - 2008= 97.54%													

Line No.	Description	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
1	**Materials and Supplies and Prepayments Loader**										
2	Materials and Supplies	10,988,064	8,252,716	9,726,073	6,829,583	12,264,678	14,721,037	18,472,896	20,753,378	17,891,289	21,471,774
3	Fuel Inventory (included above)	9,482,607	7,193,792	8,926,722	6,141,037	12,252,987	14,714,963	18,472,896	20,753,378	17,891,289	21,471,774
4	Prepayments	967,468	635,892	623,862	(349)	800	83,866	464,721	570,708	556,729	338,049
5	Fuel Related Prepayments	0	0	0	0	0	0	0	0	0	0
6	Total Utility Plant	166,682,099	174,018,261	189,363,169	202,252,941	227,692,187	239,474,276	242,115,491	263,405,595	280,967,870	298,931,548
7											
8	Non-Fuel Loader (2-3+4-5)/(6)	1.48%	0.97%	0.75%	0.34%	0.01%	0.04%	0.19%	0.22%	0.20%	0.11%
9	Average 2003 - 2008 = 0.13%										
10											
11											
12											
13	**General Plant Loading Factor**										
14	Total General Plant	11,244,509	7,255,965	8,348,642	11,173,887	11,582,178	10,499,392	10,220,642	11,333,343	23,656,261	26,435,071
15	Total Utility Plant	166,682,099	174,018,261	189,363,169	202,252,941	227,692,187	239,474,276	242,115,491	263,405,595	280,967,870	298,931,548
16											
17	Gen Plant Factor (14)/(15-14)	7.23%	4.35%	4.61%	5.85%	5.36%	4.59%	4.41%	4.50%	8.94%	9.70%
18	Average 2003 - 2008 = 6.25%										
19											
20											
21											
22	**Loss Factor**										
23	Total Sendout	123,050,390	116,295,192	136,046,620	145,107,650	154,561,050	149,609,900	147,633,850	136,710,840	156,690,670	155,838,950
24	Total Sales	116,256,180	114,313,111	133,840,570	139,004,002	152,089,230	144,710,270	143,418,868	136,789,736	148,740,142	150,190,486
25											
26	Loss Factor (24)/(23)	94.48%	98.30%	98.38%	95.79%	98.40%	96.73%	97.14%	100.06%	94.93%	96.38%
27	Average 1989 - 2008= 97.54%										

NOTES:
1 Used post merger data for Materials & Supplies and General Plant loading factors to eliminate effect of changes in accounting and recording overheads.
2 Loss factor has remained stable for entire study period.

Table - 8
National Grid - New Hampshire
Marginal Cost Study

Summary of Levelized Fixed Charge Rates

Line No.	Description	Engineer's Fixed Charge Rate	Economist's Fixed Charge Rate
	(1)	(2)	(3)
1	FIXED CHARGE RATE RESULTS		
2			Over
3	Levelized Cost for: {1}		Book Life
4	Production Plant	13.83%	10.71%
5	Mains (Cap-related Dist)	13.28%	9.31%
6	Services Investment	13.00%	9.61%
7	Meters Investment	14.82%	11.19%
8			
9			
10	INCREMENTAL COST OF CAPITAL {2}		
11	Debt	7.02%	50.00%
12	Preferred	0.00%	0.00%
13	Common	11.50%	50.00%
14	Other	0.00%	0.00%
15	Weighted Cost of Incremental Capital		9.26%
16			
17			
18	After Tax Cost of New Capital {3}		7.90%
19	Incremental Tax Rate {4}		38.76%
20	Tax Effected Cost of Capital {5}		13.18%
21	Property Tax Rate {6}		2.95%
22	Gross Receipts Tax Rate {7}		0.00%
23	Inflation Rate {8}		2.57%
24	Property Tax Escalation Rate {8}		2.57%
25	Commodity Escalation Rate {9}		1.90%

NOTES:
1 Source: Table - 8, pages 3, 4, 5, & 6.
2 Weighted average current cost of raising capital in 2008.
3 Wtd Cost of Capital (15) less tax savings on debt interest.
4 Incremental tax rate assumed to be 35% Federal and 7% State tax which results in a combined effective rate of 40.52%.
5 Tax effected cost of capital, (15) plus tax component on return.
6 Current composite average tax rate.
7 The state's 1.01% franchise tax is excluded since it is surcharged.
8 Inflation rate estimated for the forward looking five year period.
9 Annual Commodity price escalation factor provided by EIA

Table - 8
National Grid - New Hampshire
Marginal Cost Study
LEVELIZED FIXED CHARGE ANALYSIS Rev. 4.0.0
INPUT DATA

LINE NO.	VARIABLE	Peaking Plant	Capacity - Related Distribution	Services	Meters
1	Plant Data	30	0	0	40
2					
3	CAPITALIZED COST	$1,000	$1,000	$1,000	$1,000
4	BOOK LIFE	30	59	40	35
5	SALVAGE VALUE	0%	-15%	-60%	0%
6	MACRS LIFE	20	20	20	20
7					
8					
9	Capital Structure				
10					
11	DEBT RATIO	50.00%	50.00%	50.00%	50.00%
12	PREFERRED RATIO	0.00%	0.00%	0.00%	0.00%
13	COMMON RATIO	50.00%	50.00%	50.00%	50.00%
14	OTHER __________	0.00%	0.00%	0.00%	0.00%
15					
16	Cost of Capital				
17					
18	DEBT COST	7.02%	7.02%	7.02%	7.02%
19	PREFERRED COST	0.00%	0.00%	0.00%	0.00%
20	COMMON COST	11.50%	11.50%	11.50%	11.50%
21	OTHER	0.00%	0.00%	0.00%	0.00%
22	WTD COST OF CAPITAL	9.26%	9.26%	9.26%	9.26%
23	AFTER TAX COST / CAP	7.84%	7.84%	7.84%	7.84%
24					
25	Tax Data				
26					
27	TAX RATE	40.52%	40.52%	40.52%	40.52%
28	ITC RATE	0.00%	0.00%	0.00%	0.00%
29	REVENUE TAX RATE	0.00%	0.00%	0.00%	0.00%
30	PROPERTY TAX RATE	2.95%	2.95%	2.95%	2.95%
31	PROPERTY INSURANCE	0.00%	0.00%	0.00%	0.00%
32	PROPERTY TAX BASIS	2	2	2	2
33	1 = Original Cost				
34	2 = Depreciated Bal				
35					
36	Misc. Data				
37					
38	INFLATION RATE	2.57%	2.57%	2.57%	2.57%
39	PROP TAX ESC RATE	2.57%	2.57%	2.57%	2.57%
40	RETURN BASIS	2	2	2	2
41	1 = Begin of Year				
42	2 = Avg Begin & End				
43	3 = End of Year				

Table - 8
National Grid - New Hampshire
Marginal Cost Study
LEVELIZED FIXED CHARGE ANALYSIS Rev. 4.0.0
Peaker Plant

		-- Current Dollars -- (Engineer's FCR)		-- Constant Dollars -- (Economist's FCR)	
LINE NO.	ITEM	CURRENT LEVELIZED DOLLARS	PERCENT OF CAPITAL INVESTMENT	CONSTANT LEVELIZED DOLLARS	PERCENT OF CAPITAL INVESTMENT
1	INTEREST ON DEBT	$21.50	2.15%	$16.65	1.67%
2	RETURN ON PREF	$0.00	0.00%	$0.00	0.00%
3	RETURN ON COMMON	$35.22	3.52%	$27.28	2.73%
4					
5	RETURN	$56.72	5.67%	$43.94	4.39%
6					
7	DEPRECIATION	$33.33	3.33%	$25.82	2.58%
8					
9	INCOME TAX	$19.35	1.93%	$14.99	1.50%
10	DEFERRED TAXES	$4.64	0.46%	$3.60	0.36%
11					
12	INCOME TAX	$23.99	2.40%	$18.59	1.86%
13					
14	REVENUE TAX	$0.00	0.00%	$0.00	0.00%
15	PROPERTY TAX	$24.25	2.43%	$18.79	1.88%
16	PROPERTY INSURANCE	$0.00	0.00%	$0.00	0.00%
17					
18	OTHER	$24.25	2.43%	$18.79	1.88%
19					
20					
21	TOTAL REVENUE REQ'D	**$138.30**	**13.83%**	**$107.13**	**10.71%**

Table - 8
National Grid - New Hampshire
Marginal Cost Study
LEVELIZED FIXED CHARGE ANALYSIS Rev. 4.0.0
Capacity Related Distribution

		-- Current Dollars -- (Engineer's FCR)			-- Constant Dollars -- (Economist's FCR)	
LINE NO.	ITEM	CURRENT LEVELIZED DOLLARS	PERCENT OF CAPITAL INVESTMENT		CONSTANT LEVELIZED DOLLARS	PERCENT OF CAPITAL INVESTMENT
1	INTEREST ON DEBT	$22.51	2.25%		$15.78	1.58%
2	RETURN ON PREF	$0.00	0.00%		$0.00	0.00%
3	RETURN ON COMMON	$36.88	3.69%		$25.84	2.58%
4						
5	RETURN	$59.39	5.94%		$41.62	4.16%
6						
7	DEPRECIATION	$19.44	1.94%		$13.62	1.36%
8						
9	INCOME TAX	$16.49	1.65%		$11.56	1.16%
10	DEFERRED TAXES	$8.63	0.86%		$6.05	0.60%
11						
12	INCOME TAX	$25.12	2.51%		$17.61	1.76%
13						
14	REVENUE TAX	$0.00	0.00%		$0.00	0.00%
15	PROPERTY TAX	$28.86	2.89%		$20.23	2.02%
16	PROPERTY INSURANCE	$0.00	0.00%		$0.00	0.00%
17						
18	OTHER	$28.86	2.89%		$20.23	2.02%
19						
20						
21	TOTAL REVENUE REQ'D	**$132.82**	**13.28%**		**$93.07**	**9.31%**

Table - 8
National Grid - New Hampshire
Marginal Cost Study
LEVELIZED FIXED CHARGE ANALYSIS Rev. 4.0.0
Services Investment

		-- Current Dollars -- (Engineer's FCR)			-- Constant Dollars -- (Economist's FCR)	
LINE NO.	ITEM	CURRENT LEVELIZED DOLLARS	PERCENT OF CAPITAL INVESTMENT		CONSTANT LEVELIZED DOLLARS	PERCENT OF CAPITAL INVESTMENT
1	INTEREST ON DEBT	$18.53	1.85%		$13.70	1.37%
2	RETURN ON PREF	$0.00	0.00%		$0.00	0.00%
3	RETURN ON COMMON	$30.36	3.04%		$22.43	2.24%
4						
5	RETURN	$48.90	4.89%		$36.13	3.61%
6						
7	DEPRECIATION	$40.00	4.00%		$29.56	2.96%
8						
9	INCOME TAX	$18.88	1.89%		$13.95	1.40%
10	DEFERRED TAXES	$1.80	0.18%		$1.33	0.13%
11						
12	INCOME TAX	$20.68	2.07%		$15.28	1.53%
13						
14	REVENUE TAX	$0.00	0.00%		$0.00	0.00%
15	PROPERTY TAX	$20.47	2.05%		$15.12	1.51%
16	PROPERTY INSURANCE	$0.00	0.00%		$0.00	0.00%
17						
18	OTHER	$20.47	2.05%		$15.12	1.51%
19						
20						
21	TOTAL REVENUE REQ'D	**$130.05**	**13.00%**		**$96.09**	**9.61%**

Table - 8
National Grid - New Hampshire
Marginal Cost Study
LEVELIZED FIXED CHARGE ANALYSIS Rev. 4.0.0
Metering Equipment

		-- Current Dollars -- (Engineer's FCR)		-- Constant Dollars -- (Economist's FCR)	
LINE NO.	ITEM	CURRENT LEVELIZED DOLLARS	PERCENT OF CAPITAL INVESTMENT	CONSTANT LEVELIZED DOLLARS	PERCENT OF CAPITAL INVESTMENT
1	INTEREST ON DEBT	$21.74	2.17%	$16.41	1.64%
2	RETURN ON PREF	$0.00	0.00%	$0.00	0.00%
3	RETURN ON COMMON	$35.61	3.56%	$26.88	2.69%
4					
5	RETURN	$57.34	5.73%	$43.29	4.33%
6					
7	DEPRECIATION	$28.57	2.86%	$21.57	2.16%
8					
9	INCOME TAX	$18.32	1.83%	$13.83	1.38%
10	DEFERRED TAXES	$5.93	0.59%	$4.48	0.45%
11					
12	INCOME TAX	$24.26	2.43%	$18.31	1.83%
13					
14	REVENUE TAX	$0.00	0.00%	$0.00	0.00%
15	PROPERTY TAX	$38.00	3.80%	$28.69	2.87%
16	PROPERTY INSURANCE	$0.00	0.00%	$0.00	0.00%
17					
18	OTHER	$38.00	3.80%	$28.69	2.87%
19					
20					
21	TOTAL REVENUE REQ'D	**$148.17**	**14.82%**	**$111.87**	**11.19%**

Table - 8
National Grid - New Hampshire
Development of Revenue Requirements Stream

Peaker Plant

Year No.	Rate Base	Interest On Debt	Return On Preferred	Return On Common	Tax Deprec'N	Book Deprec'N	Deferred Tax	Taxable Income	Inc Tax Payable	Revenue Tax	Property Tax	Property Insurance	ANNUAL Reveue Reqm'Ts	% of Original Investm'T	Present Worth Of Rev Req'Mt
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	1,000.00														
1	982.49	34.49	0.00	56.49	37.50	33.33	1.69	90.81	36.80	0.00	29.48	0.00	192.28	19.23%	178.30
2	940.44	33.01	0.00	54.08	72.19	33.33	15.74	52.06	21.09	0.00	29.23	0.00	186.49	18.65%	160.36
3	892.46	31.33	0.00	51.32	66.77	33.33	13.55	52.83	21.41	0.00	28.95	0.00	179.88	17.99%	143.44
4	846.59	29.72	0.00	48.68	61.77	33.33	11.52	53.41	21.64	0.00	28.63	0.00	173.52	17.35%	128.31
5	802.68	28.17	0.00	46.15	57.13	33.33	9.64	53.80	21.80	0.00	28.28	0.00	167.38	16.74%	114.78
6	760.57	26.70	0.00	43.73	52.85	33.33	7.91	54.01	21.88	0.00	27.89	0.00	161.44	16.14%	102.66
7	720.13	25.28	0.00	41.41	48.88	33.33	6.30	54.06	21.91	0.00	27.46	0.00	155.69	15.57%	91.80
8	681.24	23.91	0.00	39.17	45.22	33.33	4.82	53.97	21.87	0.00	26.99	0.00	150.10	15.01%	82.07
9	643.21	22.58	0.00	36.98	44.62	33.33	4.57	50.90	20.62	0.00	26.48	0.00	144.57	14.46%	73.31
10	605.31	21.25	0.00	34.81	44.62	33.33	4.57	47.23	19.14	0.00	25.93	0.00	139.03	13.90%	65.37
11	567.40	19.92	0.00	32.63	44.62	33.33	4.57	43.57	17.65	0.00	25.33	0.00	133.43	13.34%	58.18
12	529.50	18.59	0.00	30.45	44.62	33.33	4.57	39.91	16.17	0.00	24.68	0.00	127.79	12.78%	51.67
13	491.59	17.25	0.00	28.27	44.62	33.33	4.57	36.24	14.68	0.00	23.98	0.00	122.09	12.21%	45.78
14	453.69	15.92	0.00	26.09	44.62	33.33	4.57	32.58	13.20	0.00	23.23	0.00	116.35	11.63%	40.46
15	415.78	14.59	0.00	23.91	44.62	33.33	4.57	28.91	11.72	0.00	22.43	0.00	110.55	11.06%	35.64
16	377.88	13.26	0.00	21.73	44.62	33.33	4.57	25.25	10.23	0.00	21.57	0.00	104.69	10.47%	31.30
17	339.97	11.93	0.00	19.55	44.62	33.33	4.57	21.58	8.75	0.00	20.65	0.00	98.78	9.88%	27.39
18	302.07	10.60	0.00	17.37	44.62	33.33	4.57	17.92	7.26	0.00	19.67	0.00	92.80	9.28%	23.86
19	264.16	9.27	0.00	15.19	44.62	33.33	4.57	14.26	5.78	0.00	18.62	0.00	86.76	8.68%	20.69
20	226.26	7.94	0.00	13.01	44.62	33.33	4.57	10.59	4.29	0.00	17.51	0.00	80.65	8.07%	17.83
21	192.87	6.77	0.00	11.09	22.31	33.33	(4.47)	29.67	12.02	0.00	16.32	0.00	75.07	7.51%	15.39
22	168.53	5.92	0.00	9.69	0.00	33.33	(13.51)	49.63	20.11	0.00	15.07	0.00	70.61	7.06%	13.42
23	148.70	5.22	0.00	8.55	0.00	33.33	(13.51)	47.71	19.33	0.00	13.74	0.00	66.67	6.67%	11.75
24	128.87	4.52	0.00	7.41	0.00	33.33	(13.51)	45.79	18.55	0.00	12.33	0.00	62.65	6.26%	10.24
25	109.05	3.83	0.00	6.27	0.00	33.33	(13.51)	43.88	17.78	0.00	10.84	0.00	58.54	5.85%	8.88
26	89.22	3.13	0.00	5.13	0.00	33.33	(13.51)	41.96	17.00	0.00	9.27	0.00	54.36	5.44%	7.64
27	69.39	2.44	0.00	3.99	0.00	33.33	(13.51)	40.04	16.22	0.00	7.60	0.00	50.08	5.01%	6.53
28	49.57	1.74	0.00	2.85	0.00	33.33	(13.51)	38.13	15.45	0.00	5.85	0.00	45.71	4.57%	5.53
29	29.74	1.04	0.00	1.71	0.00	33.33	(13.51)	36.21	14.67	0.00	4.00	0.00	41.25	4.13%	4.62
30	9.91	0.35	0.00	0.57	0.00	33.33	(13.51)	34.29	13.89	0.00	2.05	0.00	36.69	3.67%	3.81
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
TOTAL		$450.66	$0.00	$738.26	$1,000.00	$1,000.00	($0.00)	$1,241.19	$502.93	$0.00	$594.06	$0.00	$3,285.91		1,581
PRESENT WORTH		$245.78	$0.00	$402.63	$512.08	$381.08	$53.08	$545.92	$221.21	$0.00	$277.25	$0.00	$1,581.04	158.10%	
LEVELIZED PAYMENT		$21.50	$0.00	$35.22	$44.79	$33.33	$4.64	$47.75	$19.35	$0.00	$24.25	$0.00	$138.30	13.83%	

Table - B
National Grid - New Hampshire
Development of Revenue Requirements Stream

Capacity Related Distribution

Year No.	Rate Base	Interest On Debt	Return On Preferred	Return On Common	Tax Deprec'N	Book Deprec'N	Deferred Tax	Taxable Income	Inc Tax Payable	Revenue Tax	Property Tax	Property Insurance	ANNUAL Reveue Reqm'Ts	% of Original Investm'T	Present Worth Of Rev Req'Mt
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	1,000.00														
1	986.62	34.63	0.00	56.73	37.50	19.44	7.32	77.31	31.33	0.00	29.48	0.00	178.92	17.89%	165.92
2	952.84	33.44	0.00	54.79	72.19	19.44	21.37	39.36	15.95	0.00	29.65	0.00	174.64	17.46%	150.18
3	913.12	32.05	0.00	52.50	66.77	19.44	19.18	40.94	16.59	0.00	29.81	0.00	169.57	16.96%	135.22
4	875.52	30.73	0.00	50.34	61.77	19.44	17.15	42.31	17.14	0.00	29.96	0.00	164.76	16.48%	121.84
5	839.87	29.48	0.00	48.29	57.13	19.44	15.27	43.49	17.62	0.00	30.09	0.00	160.20	16.02%	109.85
6	806.03	28.29	0.00	46.35	52.85	19.44	13.54	44.51	18.03	0.00	30.22	0.00	155.86	15.59%	99.11
7	773.86	27.16	0.00	44.50	48.88	19.44	11.93	45.36	18.38	0.00	30.32	0.00	151.73	15.17%	89.47
8	743.23	26.09	0.00	42.74	45.22	19.44	10.45	46.07	18.67	0.00	30.42	0.00	147.79	14.78%	80.81
9	713.47	25.04	0.00	41.02	44.62	19.44	10.20	43.79	17.74	0.00	30.50	0.00	143.95	14.40%	72.99
10	683.83	24.00	0.00	39.32	44.62	19.44	10.20	40.93	16.58	0.00	30.56	0.00	140.11	14.01%	65.88
11	654.19	22.96	0.00	37.62	44.62	19.44	10.20	38.06	15.42	0.00	30.61	0.00	136.25	13.63%	59.41
12	624.56	21.92	0.00	35.91	44.62	19.44	10.20	35.20	14.26	0.00	30.64	0.00	132.37	13.24%	53.52
13	594.92	20.88	0.00	34.21	44.62	19.44	10.20	32.33	13.10	0.00	30.65	0.00	128.48	12.85%	48.17
14	565.28	19.84	0.00	32.50	44.62	19.44	10.20	29.47	11.94	0.00	30.64	0.00	124.56	12.46%	43.31
15	535.64	18.80	0.00	30.80	44.62	19.44	10.20	26.60	10.78	0.00	30.61	0.00	120.63	12.06%	38.89
16	506.00	17.76	0.00	29.10	44.62	19.44	10.20	23.74	9.62	0.00	30.56	0.00	116.67	11.67%	34.88
17	476.36	16.72	0.00	27.39	44.62	19.44	10.20	20.87	8.46	0.00	30.48	0.00	112.69	11.27%	31.25
18	446.72	15.68	0.00	25.69	44.62	19.44	10.20	18.01	7.30	0.00	30.39	0.00	108.69	10.87%	27.95
19	417.08	14.64	0.00	23.98	44.62	19.44	10.20	15.14	6.14	0.00	30.26	0.00	104.66	10.47%	24.95
20	387.45	13.60	0.00	22.28	44.62	19.44	10.20	12.28	4.97	0.00	30.11	0.00	100.60	10.06%	22.24
21	362.33	12.72	0.00	20.83	22.31	19.44	1.16	32.16	13.03	0.00	29.93	0.00	97.11	9.71%	19.91
22	346.25	12.15	0.00	19.91	0.00	19.44	(7.88)	52.91	21.44	0.00	29.73	0.00	94.79	9.48%	18.02
23	334.69	11.75	0.00	19.24	0.00	19.44	(7.88)	51.79	20.99	0.00	29.49	0.00	93.03	9.30%	16.40
24	323.13	11.34	0.00	18.58	0.00	19.44	(7.88)	50.67	20.53	0.00	29.22	0.00	91.24	9.12%	14.92
25	311.56	10.94	0.00	17.91	0.00	19.44	(7.88)	49.56	20.08	0.00	28.92	0.00	89.41	8.94%	13.56
26	300.00	10.53	0.00	17.25	0.00	19.44	(7.88)	48.44	19.63	0.00	28.58	0.00	87.55	8.75%	12.31
27	288.44	10.12	0.00	16.59	0.00	19.44	(7.88)	47.32	19.17	0.00	28.21	0.00	85.65	8.57%	11.17
28	276.88	9.72	0.00	15.92	0.00	19.44	(7.88)	46.20	18.72	0.00	27.80	0.00	83.72	8.37%	10.12
29	265.32	9.31	0.00	15.26	0.00	19.44	(7.88)	45.09	18.27	0.00	27.34	0.00	81.74	8.17%	9.16
30	253.76	8.91	0.00	14.59	0.00	19.44	(7.88)	43.97	17.82	0.00	26.85	0.00	79.73	7.97%	8.29
31	242.20	8.50	0.00	13.93	0.00	19.44	(7.88)	42.85	17.36	0.00	26.31	0.00	77.67	7.77%	7.49
32	230.64	8.10	0.00	13.26	0.00	19.44	(7.88)	41.73	16.91	0.00	25.73	0.00	75.56	7.56%	6.75
33	219.08	7.69	0.00	12.60	0.00	19.44	(7.88)	40.61	16.46	0.00	25.10	0.00	73.41	7.34%	6.09
34	207.52	7.28	0.00	11.93	0.00	19.44	(7.88)	39.50	16.00	0.00	24.42	0.00	71.21	7.12%	5.47
35	195.96	6.88	0.00	11.27	0.00	19.44	(7.88)	38.38	15.55	0.00	23.69	0.00	68.95	6.90%	4.92
36	184.40	6.47	0.00	10.60	0.00	19.44	(7.88)	37.26	15.10	0.00	22.91	0.00	66.64	6.66%	4.41
37	172.84	6.07	0.00	9.94	0.00	19.44	(7.88)	36.14	14.65	0.00	22.07	0.00	64.28	6.43%	3.94
38	161.28	5.66	0.00	9.27	0.00	19.44	(7.88)	35.03	14.19	0.00	21.17	0.00	61.86	6.19%	3.52
39	149.72	5.26	0.00	8.61	0.00	19.44	(7.88)	33.91	13.74	0.00	20.21	0.00	59.38	5.94%	3.13
40	138.15	4.85	0.00	7.94	0.00	19.44	(7.88)	32.79	13.29	0.00	19.19	0.00	56.83	5.68%	2.78
41	126.59	4.44	0.00	7.28	0.00	19.44	(7.88)	31.67	12.83	0.00	18.10	0.00	54.22	5.42%	2.46
42	115.03	4.04	0.00	6.61	0.00	19.44	(7.88)	30.56	12.38	0.00	16.95	0.00	51.54	5.15%	2.17
43	103.47	3.63	0.00	5.95	0.00	19.44	(7.88)	29.44	11.93	0.00	15.72	0.00	48.79	4.88%	1.90
44	91.91	3.23	0.00	5.28	0.00	19.44	(7.88)	28.32	11.48	0.00	14.42	0.00	45.97	4.60%	1.66
45	80.35	2.82	0.00	4.62	0.00	19.44	(7.88)	27.20	11.02	0.00	13.04	0.00	43.06	4.31%	1.44
46	68.79	2.41	0.00	3.96	0.00	19.44	(7.88)	26.09	10.57	0.00	11.58	0.00	40.08	4.01%	1.25
47	57.23	2.01	0.00	3.29	0.00	19.44	(7.88)	24.97	10.12	0.00	10.03	0.00	37.01	3.70%	1.07
48	45.67	1.60	0.00	2.63	0.00	19.44	(7.88)	23.85	9.66	0.00	8.40	0.00	33.86	3.39%	0.91
49	34.11	1.20	0.00	1.96	0.00	19.44	(7.88)	22.73	9.21	0.00	6.68	0.00	30.61	3.06%	0.76
50	22.55	0.79	0.00	1.30	0.00	19.44	(7.88)	21.62	8.76	0.00	4.87	0.00	27.28	2.73%	0.63
51	10.99	0.39	0.00	0.63	0.00	19.44	(7.88)	20.50	8.31	0.00	2.96	0.00	23.84	2.38%	0.51
52	(0.57)	(0.02)	0.00	(0.03)	0.00	19.44	(7.88)	19.38	7.85	0.00	0.94	0.00	20.30	2.03%	0.40
53	(12.13)	(0.43)	0.00	(0.70)	0.00	19.44	(7.88)	18.26	7.40	0.00	0.00	0.00	17.84	1.78%	0.33
54	(23.69)	(0.83)	0.00	(1.36)	0.00	19.44	(7.88)	17.15	6.95	0.00	0.00	0.00	16.31	1.63%	0.28
55	(35.25)	(1.24)	0.00	(2.03)	0.00	19.44	(7.88)	16.03	6.49	0.00	0.00	0.00	14.79	1.48%	0.23
56	(46.82)	(1.64)	0.00	(2.69)	0.00	19.44	(7.88)	14.91	6.04	0.00	0.00	0.00	13.27	1.33%	0.19
57	(58.38)	(2.05)	0.00	(3.36)	0.00	19.44	(7.88)	13.79	5.59	0.00	0.00	0.00	11.74	1.17%	0.16
58	(69.94)	(2.45)	0.00	(4.02)	0.00	19.44	(7.88)	12.68	5.14	0.00	0.00	0.00	10.22	1.02%	0.13
59	(81.50)	(2.86)	0.00	(4.69)	0.00	19.44	(7.88)	11.56	4.68	0.00	0.00	0.00	8.70	0.87%	0.10
60	29.73	1.04	0.00	1.71	146.73	0.00	59.46	(143.86)	(58.29)	0.00	0.00	0.00	3.92	0.39%	0.04
61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00
TOTAL		$664.05	$0.00	$1,087.84	$1,146.73	$1,146.73	($0.00)	$1,828.91	$741.07	$0.00	$1,246.56	$0.00	$4,886.26		1,675
PRESENT WORTH		$283.89	$0.00	$465.06	$513.67	$245.09	$108.83	$513.31	$207.99	$0.00	$363.95	$0.00	$1,674.81	167.48%	
LEVELIZED PAYMENT		$22.51	$0.00	$36.88	$40.73	$19.44	$8.63	$40.71	$16.49	$0.00	$28.86	$0.00	$132.82	13.28%	

Table - 8
National Grid - New Hampshire
Development of Revenue Requirements Stream

Services Investment

Year No.	Rate Base	Interest On Debt	Return On Preferred	Return On Common	Tax Deprec'N	Book Deprec'N	Deferred Tax	Taxable Income	Inc Tax Payable	Revenue Tax	Property Tax	Property Insurance	ANNUAL Reveue Reqm'Ts	% of Original Investm'T	Present Worth Of Rev Req'Mt
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	1,000.00														
1	980.51	34.42	0.00	56.38	37.50	40.00	(1.01)	97.29	39.42	0.00	29.48	0.00	198.68	19.87%	184.24
2	934.49	32.80	0.00	53.73	72.19	40.00	13.04	58.15	23.56	0.00	29.03	0.00	192.17	19.22%	165.25
3	882.55	30.98	0.00	50.75	66.77	40.00	10.85	58.54	23.72	0.00	28.53	0.00	184.83	18.48%	147.39
4	832.71	29.23	0.00	47.88	61.77	40.00	8.82	58.73	23.80	0.00	27.99	0.00	177.72	17.77%	131.42
5	784.83	27.55	0.00	45.13	57.13	40.00	6.94	58.74	23.80	0.00	27.41	0.00	170.83	17.08%	117.14
6	738.76	25.93	0.00	42.48	52.85	40.00	5.21	58.57	23.73	0.00	26.77	0.00	164.12	16.41%	104.36
7	694.35	24.37	0.00	39.93	48.88	40.00	3.60	58.24	23.60	0.00	26.09	0.00	157.59	15.76%	92.92
8	651.50	22.87	0.00	37.46	45.22	40.00	2.11	57.76	23.41	0.00	25.35	0.00	151.20	15.12%	82.68
9	609.50	21.39	0.00	35.05	44.62	40.00	1.87	54.31	22.00	0.00	24.56	0.00	144.87	14.49%	73.46
10	567.63	19.92	0.00	32.64	44.62	40.00	1.87	50.26	20.36	0.00	23.71	0.00	138.51	13.85%	65.13
11	525.76	18.45	0.00	30.23	44.62	40.00	1.87	46.21	18.72	0.00	22.80	0.00	132.08	13.21%	57.59
12	483.89	16.98	0.00	27.82	44.62	40.00	1.87	42.16	17.08	0.00	21.82	0.00	125.59	12.56%	50.78
13	442.02	15.52	0.00	25.42	44.62	40.00	1.87	38.12	15.44	0.00	20.79	0.00	119.03	11.90%	44.63
14	400.15	14.05	0.00	23.01	44.62	40.00	1.87	34.07	13.80	0.00	19.68	0.00	112.41	11.24%	39.09
15	358.28	12.58	0.00	20.60	44.62	40.00	1.87	30.02	12.16	0.00	18.50	0.00	105.72	10.57%	34.09
16	316.41	11.11	0.00	18.19	44.62	40.00	1.87	25.97	10.52	0.00	17.25	0.00	98.95	9.89%	29.59
17	274.54	9.64	0.00	15.79	44.62	40.00	1.87	21.93	8.88	0.00	15.93	0.00	92.10	9.21%	25.54
18	232.67	8.17	0.00	13.38	44.62	40.00	1.87	17.88	7.24	0.00	14.52	0.00	85.18	8.52%	21.90
19	190.80	6.70	0.00	10.97	44.62	40.00	1.87	13.83	5.60	0.00	13.03	0.00	78.18	7.82%	18.64
20	148.93	5.23	0.00	8.56	44.62	40.00	1.87	9.78	3.96	0.00	11.46	0.00	71.08	7.11%	15.72
21	111.58	3.92	0.00	6.42	22.31	40.00	(7.17)	28.48	11.54	0.00	9.79	0.00	64.50	6.45%	13.22
22	83.27	2.92	0.00	4.79	0.00	40.00	(16.21)	48.05	19.47	0.00	8.04	0.00	59.01	5.90%	11.22
23	59.48	2.09	0.00	3.42	0.00	40.00	(16.21)	45.75	18.54	0.00	6.18	0.00	54.02	5.40%	9.52
24	35.69	1.25	0.00	2.05	0.00	40.00	(16.21)	43.45	17.61	0.00	4.23	0.00	48.93	4.89%	8.00
25	11.90	0.42	0.00	0.68	0.00	40.00	(16.21)	41.15	16.67	0.00	2.17	0.00	43.74	4.37%	6.63
26	(11.90)	(0.42)	0.00	(0.68)	0.00	40.00	(16.21)	38.85	15.74	0.00	0.00	0.00	38.43	3.84%	5.40
27	(35.69)	(1.25)	0.00	(2.05)	0.00	40.00	(16.21)	36.55	14.81	0.00	0.00	0.00	35.30	3.53%	4.60
28	(59.48)	(2.09)	0.00	(3.42)	0.00	40.00	(16.21)	34.25	13.88	0.00	0.00	0.00	32.16	3.22%	3.89
29	(83.27)	(2.92)	0.00	(4.79)	0.00	40.00	(16.21)	31.95	12.95	0.00	0.00	0.00	29.03	2.90%	3.25
30	(107.06)	(3.76)	0.00	(6.16)	0.00	40.00	(16.21)	29.65	12.01	0.00	0.00	0.00	25.89	2.59%	2.69
31	(130.86)	(4.59)	0.00	(7.52)	0.00	40.00	(16.21)	27.35	11.08	0.00	0.00	0.00	22.76	2.28%	2.19
32	(154.65)	(5.43)	0.00	(8.89)	0.00	40.00	(16.21)	25.05	10.15	0.00	0.00	0.00	19.62	1.96%	1.75
33	(178.44)	(6.26)	0.00	(10.26)	0.00	40.00	(16.21)	22.75	9.22	0.00	0.00	0.00	16.49	1.65%	1.37
34	(202.23)	(7.10)	0.00	(11.63)	0.00	40.00	(16.21)	20.45	8.29	0.00	0.00	0.00	13.35	1.34%	1.03
35	(226.02)	(7.93)	0.00	(13.00)	0.00	40.00	(16.21)	18.15	7.35	0.00	0.00	0.00	10.22	1.02%	0.73
36	(249.82)	(8.77)	0.00	(14.36)	0.00	40.00	(16.21)	15.85	6.42	0.00	0.00	0.00	7.08	0.71%	0.47
37	(273.61)	(9.60)	0.00	(15.73)	0.00	40.00	(16.21)	13.55	5.49	0.00	0.00	0.00	3.95	0.39%	0.24
38	(297.40)	(10.44)	0.00	(17.10)	0.00	40.00	(16.21)	11.25	4.56	0.00	0.00	0.00	0.81	0.08%	0.05
39	(321.19)	(11.27)	0.00	(18.47)	0.00	40.00	(16.21)	8.95	3.63	0.00	0.00	0.00	(2.32)	-0.23%	(0.12)
40	(344.98)	(12.11)	0.00	(19.84)	0.00	40.00	(16.21)	6.65	2.69	0.00	0.00	0.00	(5.46)	-0.55%	(0.27)
41	121.56	4.27	0.00	6.99	600.00	0.00	243.12	(588.25)	(238.36)	0.00	0.00	0.00	16.02	1.60%	0.73
42	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
43	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
44	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
45	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
46	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
47	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
48	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
49	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
50	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
51	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
52	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
53	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
54	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
55	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
56	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
57	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
58	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
59	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
60	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
61	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
62	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
63	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
64	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
65	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
TOTAL		$308.78	$0.00	$505.84	$1,600.00	$1,600.00	($0.00)	$850.44	$344.60	$0.00	$475.12	$0.00	$3,234.34		1,578
PRESENT WORTH		$224.91	$0.00	$368.44	$539.28	$485.40	$21.83	$565.56	$229.17	$0.00	$248.38	$0.00	$1,578.14	157.81%	
LEVELIZED PAYMENT		$18.53	$0.00	$30.36	$44.44	$40.00	$1.80	$46.61	$18.88	$0.00	$20.47	$0.00	$130.05	13.00%	

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
C&I - High Annual Use, Load Factor Less Than 110%
Rate G-54

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$431.03	NA	$530.00	NA	$98.97	22.96%	$431.03	NA	$530.00	NA	$98.97	22.96%
2,500	519.78	0.208	645.00	0.258	125.22	24.09%	2,909.28	1.164	3,062.25	1.225	152.97	5.26%
5,000	608.53	0.122	760.00	0.152	151.47	24.89%	5,387.53	1.078	5,594.50	1.119	206.97	3.84%
7,500	697.28	0.093	875.00	0.117	177.72	25.49%	7,865.78	1.049	8,126.75	1.084	260.97	3.32%
10,000	786.03	0.079	990.00	0.099	203.97	25.95%	10,344.03	1.034	10,659.00	1.066	314.97	3.04%
12,500	874.78	0.070	1,105.00	0.088	230.22	26.32%	12,822.28	1.026	13,191.25	1.055	368.97	2.88%
15,000	963.53	0.064	1,220.00	0.081	256.47	26.62%	15,300.53	1.020	15,723.50	1.048	422.97	2.76%
20,000	1,141.03	0.057	1,450.00	0.073	308.97	27.08%	20,257.03	1.013	20,788.00	1.039	530.97	2.62%
25,000	1,318.53	0.053	1,680.00	0.067	361.47	27.41%	25,213.53	1.009	25,852.50	1.034	638.97	2.53%
30,000	1,496.03	0.050	1,910.00	0.064	413.97	27.67%	30,170.03	1.006	30,917.00	1.031	746.97	2.48%
35,000	1,673.53	0.048	2,140.00	0.061	466.47	27.87%	35,126.53	1.004	35,981.50	1.028	854.97	2.43%
40,000	1,851.03	0.046	2,370.00	0.059	518.97	28.04%	40,083.03	1.002	41,046.00	1.026	962.97	2.40%
45,000	2,028.53	0.045	2,600.00	0.058	571.47	28.17%	45,039.53	1.001	46,110.50	1.025	1,070.97	2.38%
50,000	2,206.03	0.044	2,830.00	0.057	623.97	28.28%	49,996.03	1.000	51,175.00	1.024	1,178.97	2.36%
55,000	2,383.53	0.043	3,060.00	0.056	676.47	28.38%	54,952.53	0.999	56,239.50	1.023	1,286.97	2.34%
60,000	2,561.03	0.043	3,290.00	0.055	728.97	28.46%	59,909.03	0.998	61,304.00	1.022	1,394.97	2.33%
75,000	3,093.53	0.041	3,980.00	0.053	886.47	28.66%	74,778.53	0.997	76,497.50	1.020	1,718.97	2.30%
100,000	3,981.03	0.040	5,130.00	0.051	1,148.97	28.86%	99,561.03	0.996	101,820.00	1.018	2,258.97	2.27%
150,000	5,756.03	0.038	7,430.00	0.050	1,673.97	29.08%	149,126.03	0.994	152,465.00	1.016	3,338.97	2.24%
200,000	7,531.03	0.038	9,730.00	0.049	2,198.97	29.20%	198,691.03	0.993	203,110.00	1.016	4,418.97	2.22%
Estimated Bill Percentile - 25%												
4,000	573.03	0.143	714.00	0.179	140.97	24.60%	4,396.23	1.099	4,581.60	1.145	185.37	4.22%
Bill Percentile - 50%												
30,000	1,496.03	0.050	1,910.00	0.064	413.97	27.67%	30,170.03	1.006	30,917.00	1.031	746.97	2.48%
Estimated Bill Percentile - 75%												
100,000	3,981.03	0.040	5,130.00	0.051	1,148.97	28.86%	99,561.03	0.996	101,820.00	1.018	2,258.97	2.27%

Equivalent DRY Therm Present Rate	G-54		
	Block therm	Rate	
Customer Charge	-	$431.03	/Customer
First	-	$0.0355	/therm
Over	-	$0.0355	/therm
TOTAL CGC & LDAC		$0.9558	/therm
CGC		$0.9364	
LDAC		$0.0194	

Proposed Rate	G-54		
	Block therm	Rate	
Customer Charge	-	$530.00	/Customer
First	-	$0.0460	/therm
Over	-	$0.0460	/therm
TOTAL CGC & LDAC		$0.9669	/therm
CGC		$0.9475	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
C&I - High Annual Use, Load Factor Less Than 110%
Rate G-54

Sales	Present Rate		Proposed Rate		Difference		Present Rate With CGC Revenues		Proposed Rate With CGC Revenues		Difference With CGC Revenues	
					Revenues	Percent						
	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$431.03	NA	$530.00	NA	$98.97	22.96%	$431.03	NA	$530.00	NA	$98.97	22.96%
2,500	479.03	0.192	592.25	0.237	113.22	23.64%	2,072.61	0.829	2,196.25	0.879	123.64	5.97%
5,000	527.03	0.105	654.50	0.131	127.47	24.19%	3,714.20	0.743	3,862.50	0.773	148.30	3.99%
7,500	575.03	0.077	716.75	0.096	141.72	24.65%	5,355.78	0.714	5,528.75	0.737	172.97	3.23%
10,000	623.03	0.062	779.00	0.078	155.97	25.03%	6,997.37	0.700	7,195.00	0.720	197.63	2.82%
12,500	671.03	0.054	841.25	0.067	170.22	25.37%	8,638.95	0.691	8,861.25	0.709	222.30	2.57%
15,000	719.03	0.048	903.50	0.060	184.47	25.66%	10,280.54	0.685	10,527.50	0.702	246.96	2.40%
20,000	815.03	0.041	1,028.00	0.051	212.97	26.13%	13,563.70	0.678	13,860.00	0.693	296.30	2.18%
25,000	911.03	0.036	1,152.50	0.046	241.47	26.51%	16,846.87	0.674	17,192.50	0.688	345.63	2.05%
30,000	1,007.03	0.034	1,277.00	0.043	269.97	26.81%	20,130.04	0.671	20,525.00	0.684	394.96	1.96%
35,000	1,103.03	0.032	1,401.50	0.040	298.47	27.06%	23,413.21	0.669	23,857.50	0.682	444.29	1.90%
40,000	1,199.03	0.030	1,526.00	0.038	326.97	27.27%	26,696.38	0.667	27,190.00	0.680	493.62	1.85%
45,000	1,295.03	0.029	1,650.50	0.037	355.47	27.45%	29,979.55	0.666	30,522.50	0.678	542.95	1.81%
50,000	1,391.03	0.028	1,775.00	0.036	383.97	27.60%	33,262.72	0.665	33,855.00	0.677	592.28	1.78%
55,000	1,487.03	0.027	1,899.50	0.035	412.47	27.74%	36,545.88	0.664	37,187.50	0.676	641.62	1.76%
60,000	1,583.03	0.026	2,024.00	0.034	440.97	27.86%	39,829.05	0.664	40,520.00	0.675	690.95	1.73%
75,000	1,871.03	0.025	2,397.50	0.032	526.47	28.14%	49,678.56	0.662	50,517.50	0.674	838.94	1.69%
100,000	2,351.03	0.024	3,020.00	0.030	668.97	28.45%	66,094.40	0.661	67,180.00	0.672	1,085.60	1.64%
150,000	3,311.03	0.022	4,265.00	0.028	953.97	28.81%	98,926.09	0.660	100,505.00	0.670	1,578.91	1.60%
200,000	4,271.03	0.021	5,510.00	0.028	1,238.97	29.01%	131,757.77	0.659	133,830.00	0.669	2,072.23	1.57%
Estimated Bill Percentile - 25%												
15,000	719.03	0.048	903.50	0.060	184.47	25.66%	10,280.54	0.685	10,527.50	0.702	246.96	2.40%
Bill Percentile - 50%												
50,000	1,391.03	0.028	1,775.00	0.036	383.97	27.60%	33,262.72	0.665	33,855.00	0.677	592.28	1.78%
Estimated Bill Percentile - 75%												
80,000	1,967.03	0.025	2,522.00	0.032	554.97	28.21%	52,961.73	0.662	53,850.00	0.673	888.27	1.68%

Equivalent DRY Therm Present Rate G-54

	Block therm	Rate	
Customer Charge	-	$431.03	/Customer
First	-	$0.0192	/therm
Over	-	$0.0192	/therm
TOTAL CGC & LDAC		$0.6374	/therm
CGC		$0.6180	
LDAC		$0.0194	

Proposed Rate G-54

	Block therm	Rate	
Customer Charge	-	$530.00	/Customer
First	-	$0.0249	/therm
Over	-	$0.0249	/therm
TOTAL CGC & LDAC		$0.6416	/therm
CGC		$0.6222	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
C&I - High Annual Use, Load Factor Greater Than 110%
Rate G-63

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales therm	Base Rate	Revenues Per therm	Base Rate	Revenues Per therm	Base Rate	Base Rate	Rate	Revenues Per therm	Rate	Revenues Per therm	Revenues Rate	Percent Rate
0	$431.03	NA	$530.00	NA	$98.97	22.96%	$431.03	NA	$530.00	NA	$98.97	22.96%
2,500	519.78	0.208	646.00	0.258	126.22	24.28%	2,909.28	1.164	3,063.25	1.225	153.97	5.29%
5,000	608.53	0.122	762.00	0.152	153.47	25.22%	5,387.53	1.078	5,596.50	1.119	208.97	3.88%
7,500	697.28	0.093	878.00	0.117	180.72	25.92%	7,865.78	1.049	8,129.75	1.084	263.97	3.36%
10,000	786.03	0.079	994.00	0.099	207.97	26.46%	10,344.03	1.034	10,663.00	1.066	318.97	3.08%
12,500	874.78	0.070	1,110.00	0.089	235.22	26.89%	12,822.28	1.026	13,196.25	1.056	373.97	2.92%
15,000	963.53	0.064	1,226.00	0.082	262.47	27.24%	15,300.53	1.020	15,729.50	1.049	428.97	2.80%
20,000	1,141.03	0.057	1,458.00	0.073	316.97	27.78%	20,257.03	1.013	20,796.00	1.040	538.97	2.66%
25,000	1,318.53	0.053	1,690.00	0.068	371.47	28.17%	25,213.53	1.009	25,862.50	1.035	648.97	2.57%
30,000	1,496.03	0.050	1,922.00	0.064	425.97	28.47%	30,170.03	1.006	30,929.00	1.031	758.97	2.52%
35,000	1,673.53	0.048	2,154.00	0.062	480.47	28.71%	35,126.53	1.004	35,995.50	1.028	868.97	2.47%
40,000	1,851.03	0.046	2,386.00	0.060	534.97	28.90%	40,083.03	1.002	41,062.00	1.027	978.97	2.44%
45,000	2,028.53	0.045	2,618.00	0.058	589.47	29.06%	45,039.53	1.001	46,128.50	1.025	1,088.97	2.42%
50,000	2,206.03	0.044	2,850.00	0.057	643.97	29.19%	49,996.03	1.000	51,195.00	1.024	1,198.97	2.40%
55,000	2,383.53	0.043	3,082.00	0.056	698.47	29.30%	54,952.53	0.999	56,261.50	1.023	1,308.97	2.38%
60,000	2,561.03	0.043	3,314.00	0.055	752.97	29.40%	59,909.03	0.998	61,328.00	1.022	1,418.97	2.37%
75,000	3,093.53	0.041	4,010.00	0.053	916.47	29.63%	74,778.53	0.997	76,527.50	1.020	1,748.97	2.34%
100,000	3,981.03	0.040	5,170.00	0.052	1,188.97	29.87%	99,561.03	0.996	101,860.00	1.019	2,298.97	2.31%
150,000	5,756.03	0.038	7,490.00	0.050	1,733.97	30.12%	149,126.03	0.994	152,525.00	1.017	3,398.97	2.28%
200,000	7,531.03	0.038	9,810.00	0.049	2,278.97	30.26%	198,691.03	0.993	203,190.00	1.016	4,498.97	2.26%
Estimated Bill Percentile - 25%												
4,000	573.03	0.143	715.60	0.179	142.57	24.88%	4,396.23	1.099	4,583.20	1.146	186.97	4.25%
Bill Percentile - 50%												
30,000	1,496.03	0.050	1,922.00	0.064	425.97	28.47%	30,170.03	1.006	30,929.00	1.031	758.97	2.52%
Estimated Bill Percentile - 75%												
100,000	3,981.03	0.040	5,170.00	0.052	1,188.97	29.87%	99,561.03	0.996	101,860.00	1.019	2,298.97	2.31%

Equivalent DRY Therm Present Rate	Block therm	Rate G-63	
Customer Charge	-	$431.03	/Customer
First	-	$0.0355	/therm
Over	-	$0.0355	/therm
TOTAL CGC & LDAC		$0.9558	/therm
CGC		$0.9364	
LDAC		$0.0194	

Proposed Rate	Block therm	Rate G-63	
Customer Charge	-	$530.00	/Customer
First	-	$0.0464	/therm
Over	-	$0.0464	/therm
TOTAL CGC & LDAC		$0.9669	/therm
CGC		$0.9475	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
C&I - High Annual Use, Load Factor Greater Than 110%
Rate G-63

	Present Rate		Proposed Rate		Difference Revenues	Difference Percent	Present Rate With CGC Revenues		Proposed Rate With CGC Revenues		Difference With CGC Revenues	
Sales therm	Base Rate	Revenues Per therm	Base Rate	Revenues Per therm	Base Rate	Base Rate	Rate	Revenues Per therm	Rate	Revenues Per therm	Revenues Rate	Percent Rate
0	$431.03	NA	$530.00	NA	$98.97	22.96%	$431.03	NA	$530.00	NA	$98.97	22.96%
2,500	479.03	0.192	592.75	0.237	113.72	23.74%	2,072.61	0.829	2,196.75	0.879	124.14	5.99%
5,000	527.03	0.105	655.50	0.131	128.47	24.38%	3,714.20	0.743	3,863.50	0.773	149.30	4.02%
7,500	575.03	0.077	718.25	0.096	143.22	24.91%	5,355.78	0.714	5,530.25	0.737	174.47	3.26%
10,000	623.03	0.062	781.00	0.078	157.97	25.36%	6,997.37	0.700	7,197.00	0.720	199.63	2.85%
12,500	671.03	0.054	843.75	0.068	172.72	25.74%	8,638.95	0.691	8,863.75	0.709	224.80	2.60%
15,000	719.03	0.048	906.50	0.060	187.47	26.07%	10,280.54	0.685	10,530.50	0.702	249.96	2.43%
20,000	815.03	0.041	1,032.00	0.052	216.97	26.62%	13,563.70	0.678	13,864.00	0.693	300.30	2.21%
25,000	911.03	0.036	1,157.50	0.046	246.47	27.05%	16,846.87	0.674	17,197.50	0.688	350.63	2.08%
30,000	1,007.03	0.034	1,283.00	0.043	275.97	27.40%	20,130.04	0.671	20,531.00	0.684	400.96	1.99%
35,000	1,103.03	0.032	1,408.50	0.040	305.47	27.69%	23,413.21	0.669	23,864.50	0.682	451.29	1.93%
40,000	1,199.03	0.030	1,534.00	0.038	334.97	27.94%	26,696.38	0.667	27,198.00	0.680	501.62	1.88%
45,000	1,295.03	0.029	1,659.50	0.037	364.47	28.14%	29,979.55	0.666	30,531.50	0.678	551.95	1.84%
50,000	1,391.03	0.028	1,785.00	0.036	393.97	28.32%	33,262.72	0.665	33,865.00	0.677	602.28	1.81%
55,000	1,487.03	0.027	1,910.50	0.035	423.47	28.48%	36,545.88	0.664	37,198.50	0.676	652.62	1.79%
60,000	1,583.03	0.026	2,036.00	0.034	452.97	28.61%	39,829.05	0.664	40,532.00	0.676	702.95	1.76%
75,000	1,871.03	0.025	2,412.50	0.032	541.47	28.94%	49,678.56	0.662	50,532.50	0.674	853.94	1.72%
100,000	2,351.03	0.024	3,040.00	0.030	688.97	29.31%	66,094.40	0.661	67,200.00	0.672	1,105.60	1.67%
150,000	3,311.03	0.022	4,295.00	0.029	983.97	29.72%	98,926.09	0.660	100,535.00	0.670	1,608.91	1.63%
200,000	4,271.03	0.021	5,550.00	0.028	1,278.97	29.95%	131,757.77	0.659	133,870.00	0.669	2,112.23	1.60%
Estimated Bill Percentile - 25%												
15,000	719.03	0.048	906.50	0.060	187.47	26.07%	10,280.54	0.685	10,530.50	0.702	249.96	2.43%
Bill Percentile - 50%												
50,000	1,391.03	0.028	1,785.00	0.036	393.97	28.32%	33,262.72	0.665	33,865.00	0.677	602.28	1.81%
Estimated Bill Percentile - 75%												
80,000	1,967.03	0.025	2,538.00	0.032	570.97	29.03%	52,961.73	0.662	53,866.00	0.673	904.27	1.71%

Equivalent DRY Therm Present Rate G-63

	Block therm	Rate	
Customer Charge	-	$431.03	/Customer
First	-	$0.0192	/therm
Over	-	$0.0192	/therm
TOTAL CGC & LDAC		$0.6374	/therm
CGC		$0.6180	
LDAC		$0.0194	

Proposed Rate G-63

	Block therm	Rate	
Customer Charge	-	$530.00	/Customer
First	-	$0.0251	/therm
Over	-	$0.0251	/therm
TOTAL CGC & LDAC		$0.6416	/therm
CGC		$0.6222	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
C&I - High Annual Use, Load Factor Greater Than 90%
Rate G-54 and G-63 Combined

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$431.03	NA	$530.00	NA	$98.97	22.96%	$431.03	NA	$530.00	NA	$98.97	22.96%
2,500	519.78	0.208	645.50	0.258	125.72	24.19%	2,909.28	1.164	3,062.75	1.225	153.47	5.28%
5,000	608.53	0.122	761.00	0.152	152.47	25.06%	5,387.53	1.078	5,595.50	1.119	207.97	3.86%
7,500	697.28	0.093	876.50	0.117	179.22	25.70%	7,865.78	1.049	8,128.25	1.084	262.47	3.34%
10,000	786.03	0.079	992.00	0.099	205.97	26.20%	10,344.03	1.034	10,661.00	1.066	316.97	3.06%
12,500	874.78	0.070	1,107.50	0.089	232.72	26.60%	12,822.28	1.026	13,193.75	1.056	371.47	2.90%
15,000	963.53	0.064	1,223.00	0.082	259.47	26.93%	15,300.53	1.020	15,726.50	1.048	425.97	2.78%
20,000	1,141.03	0.057	1,454.00	0.073	312.97	27.43%	20,257.03	1.013	20,792.00	1.040	534.97	2.64%
25,000	1,318.53	0.053	1,685.00	0.067	366.47	27.79%	25,213.53	1.009	25,857.50	1.034	643.97	2.55%
30,000	1,496.03	0.050	1,916.00	0.064	419.97	28.07%	30,170.03	1.006	30,923.00	1.031	752.97	2.50%
35,000	1,673.53	0.048	2,147.00	0.061	473.47	28.29%	35,126.53	1.004	35,988.50	1.028	861.97	2.45%
40,000	1,851.03	0.046	2,378.00	0.059	526.97	28.47%	40,083.03	1.002	41,054.00	1.026	970.97	2.42%
45,000	2,028.53	0.045	2,609.00	0.058	580.47	28.62%	45,039.53	1.001	46,119.50	1.025	1,079.97	2.40%
50,000	2,206.03	0.044	2,840.00	0.057	633.97	28.74%	49,996.03	1.000	51,185.00	1.024	1,188.97	2.38%
55,000	2,383.53	0.043	3,071.00	0.056	687.47	28.84%	54,952.53	0.999	56,250.50	1.023	1,297.97	2.36%
60,000	2,561.03	0.043	3,302.00	0.055	740.97	28.93%	59,909.03	0.998	61,316.00	1.022	1,406.97	2.35%
75,000	3,093.53	0.041	3,995.00	0.053	901.47	29.14%	74,778.53	0.997	76,512.50	1.020	1,733.97	2.32%
100,000	3,981.03	0.040	5,150.00	0.052	1,168.97	29.36%	99,561.03	0.996	101,840.00	1.018	2,278.97	2.29%
150,000	5,756.03	0.038	7,460.00	0.050	1,703.97	29.60%	149,126.03	0.994	152,495.00	1.017	3,368.97	2.26%
200,000	7,531.03	0.038	9,770.00	0.049	2,238.97	29.73%	198,691.03	0.993	203,150.00	1.016	4,458.97	2.24%
Estimated Bill Percentile - 25%												
4,000	573.03	0.143	714.80	0.179	141.77	24.74%	4,396.23	1.099	4,582.40	1.146	186.17	4.23%
Bill Percentile - 50%												
30,000	1,496.03	0.050	1,916.00	0.064	419.97	28.07%	30,170.03	1.006	30,923.00	1.031	752.97	2.50%
Estimated Bill Percentile - 75%												
100,000	3,981.03	0.040	5,150.00	0.052	1,168.97	29.36%	99,561.03	0.996	101,840.00	1.018	2,278.97	2.29%

Equivalent DRY Therm Present Rate G-54&G-63

	Block therm	Rate	
Customer Charge	-	$431.03	/Customer
First	-	$0.0355	/therm
Over	-	$0.0355	/therm
TOTAL CGC & LDAC		$0.9558	/therm
CGC		$0.9364	
LDAC		$0.0194	

Proposed Rate G-54&G-63

	Block therm	Rate	
Customer Charge	-	$530.00	/Customer
First	-	$0.0462	/therm
Over	-	$0.0462	/therm
TOTAL CGC & LDAC		$0.9669	/therm
CGC		$0.9475	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
C&I - High Annual Use, Load Factor Greater Than 90%
Rate G-54 and G-63 Combined

Sales	Present Rate		Proposed Rate		Difference Revenues	Difference Percent	Present Rate With CGC Revenues		Proposed Rate With CGC Revenues		Difference With CGC Revenues	
therm	Base Rate	Revenues Per therm	Base Rate	Revenues Per therm	Base Rate	Base Rate	Rate	Revenues Per therm	Rate	Revenues Per therm	Revenues Rate	Percent Rate
0	$431.03	NA	$530.00	NA	$98.97	22.96%	$431.03	NA	$530.00	NA	$98.97	22.96%
2,500	479.03	0.192	592.50	0.237	113.47	23.69%	2,072.61	0.829	2,196.50	0.879	123.89	5.98%
5,000	527.03	0.105	655.00	0.131	127.97	24.28%	3,714.20	0.743	3,863.00	0.773	148.80	4.01%
7,500	575.03	0.077	717.50	0.096	142.47	24.78%	5,355.78	0.714	5,529.50	0.737	173.72	3.24%
10,000	623.03	0.062	780.00	0.078	156.97	25.19%	6,997.37	0.700	7,196.00	0.720	198.63	2.84%
12,500	671.03	0.054	842.50	0.067	171.47	25.55%	8,638.95	0.691	8,862.50	0.709	223.55	2.59%
15,000	719.03	0.048	905.00	0.060	185.97	25.86%	10,280.54	0.685	10,529.00	0.702	248.46	2.42%
20,000	815.03	0.041	1,030.00	0.052	214.97	26.38%	13,563.70	0.678	13,862.00	0.693	298.30	2.20%
25,000	911.03	0.036	1,155.00	0.046	243.97	26.78%	16,846.87	0.674	17,195.00	0.688	348.13	2.07%
30,000	1,007.03	0.034	1,280.00	0.043	272.97	27.11%	20,130.04	0.671	20,528.00	0.684	397.96	1.98%
35,000	1,103.03	0.032	1,405.00	0.040	301.97	27.38%	23,413.21	0.669	23,861.00	0.682	447.79	1.91%
40,000	1,199.03	0.030	1,530.00	0.038	330.97	27.60%	26,696.38	0.667	27,194.00	0.680	497.62	1.86%
45,000	1,295.03	0.029	1,655.00	0.037	359.97	27.80%	29,979.55	0.666	30,527.00	0.678	547.45	1.83%
50,000	1,391.03	0.028	1,780.00	0.036	388.97	27.96%	33,262.72	0.665	33,860.00	0.677	597.28	1.80%
55,000	1,487.03	0.027	1,905.00	0.035	417.97	28.11%	36,545.88	0.664	37,193.00	0.676	647.12	1.77%
60,000	1,583.03	0.026	2,030.00	0.034	446.97	28.24%	39,829.05	0.664	40,526.00	0.675	696.95	1.75%
75,000	1,871.03	0.025	2,405.00	0.032	533.97	28.54%	49,678.56	0.662	50,525.00	0.674	846.44	1.70%
100,000	2,351.03	0.024	3,030.00	0.030	678.97	28.88%	66,094.40	0.661	67,190.00	0.672	1,095.60	1.66%
150,000	3,311.03	0.022	4,280.00	0.029	968.97	29.26%	98,926.09	0.660	100,520.00	0.670	1,593.91	1.61%
200,000	4,271.03	0.021	5,530.00	0.028	1,258.97	29.48%	131,757.77	0.659	133,850.00	0.669	2,092.23	1.59%
Estimated Bill Percentile - 25%												
15,000	719.03	0.048	905.00	0.060	185.97	25.86%	10,280.54	0.685	10,529.00	0.702	248.46	2.42%
Bill Percentile - 50%												
50,000	1,391.03	0.028	1,780.00	0.036	388.97	27.96%	33,262.72	0.665	33,860.00	0.677	597.28	1.80%
Estimated Bill Percentile - 75%												
80,000	1,967.03	0.025	2,530.00	0.032	562.97	28.62%	52,961.73	0.662	53,858.00	0.673	896.27	1.69%

Equivalent DRY Therm Present Rate G-54&G-63

	Block therm	Rate	
Customer Charge	-	$431.03	/Customer
First	-	$0.0192	/therm
Over	-	$0.0192	/therm
TOTAL CGC & LDAC		$0.6374	/therm
CGC		$0.6180	
LDAC		$0.0194	

Proposed Rate G-54&G-63

	Block therm	Rate	
Customer Charge	-	$530.00	/Customer
First	-	$0.0250	/therm
Over	-	$0.0250	/therm
TOTAL CGC & LDAC		$0.6416	/therm
CGC		$0.6222	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

DISCUSSION OF COSTING METHODOLOGIES

The purpose of this supplemental testimony is to provide an explanation of the accounting and marginal cost studies and the proposed rate design. The direct testimony and the first four attachments are supplemented with this attachment as well as a complete set of workpapers. Attachment PMN-5 is intended to provide a more detailed explanation of the computational aspects of the rate filing than is provided in my direct testimony.

This supplemental testimony addresses three topics as follows:

1. A description of the Accounting Cost of Service Study used to segregate revenue requirements between gas supply and delivery service functions,
2. A discussion of the methods employed in the Marginal Cost Study to allocate delivery service revenue requirements among classes, and
3. The computation of design day demands necessary for the marginal cost study and the allocation of gas costs.

<u>Cost of Service Study</u>

The accounting cost of service model presented in Attachment PMN-2 is essentially a cost matrix. The vertical dimension or rows of the study consists of the costs to serve as provided by the Company. The development of cost of service study begins with rate base and continues with revenues, operating expenses, taxes, income and rate of return and the computation of a labor allocator. The cost model includes three additional reports, a summary of costs to serve, a list of the allocation factors employed in the study and a revenue requirements presentation.

The horizontal portion or columns consists of either customer classes or cost functions. Each page has an important column immediately preceding the numerical data marked "ALLOC", an abbreviation for Allocator. The ALLOC column contains an acronym to indicate the allocation factor used to allocate the costs shown in the Total Company Column to individual customer classes. A tabulation of these allocators in absolute form, typically total dollars or volumes and as a percent of total, has been provided at the end of each study.

Using these allocation factors, costs shown in the Total Company column are assigned to each function shown on the horizontal of the cost study. The cost of service information provided in the vertical column can be of two forms: either per books numbers as reported for the test year or pro forma adjustments, to reflect the weather normalization adjustments.

Attachment PMN-2 was prepared to assist in the quantification of indirect gas costs and presents the results of my functional cost of service study. This study is structured similar to previous cost studies filed on behalf of National Grid NH; however, it has been simplified to include only that information relevant to the development of indirect gas costs. Instead of identifying the costs to serve each customer class, each cost component and each functional area, this study only computes functional costs. It does so by examining each element of rate base and operations expense and allocating or otherwise assigning it to one of three functions - the delivery function, the direct gas cost function or the indirect gas cost function.

The functional cost study provided in Attachment PMN-2-1 employs the same methodologies as the cost studies filed in support of indirect gas costs in Docket Nos. DG 00-063, DG 07-093, and DG 08-009. The study filed as Attachment PMN-2-1 utilizes the same allocation factors and provides the same information in its output reports as the previous studies. The only difference is that the vertical layout of the cost study has been updated to reflect the revenue requirements proposed in this case.

The cost study incorporates the actual costs incurred by the Company for the 12 months ended June 30, 2009 with known and measurable changes.

The cost of service study, Attachment PMN-2-1, consists of 24 pages. Pages 1, 2 and 3 provide summary information. Pages 4 through 14 identify each element of rate base and operations expense included in the utility's costs to serve. Pages 15 through 24 develop and tabulate the allocation factors used in the cost study.

Following the method employed by the Company in its previous functional cost study and similar to most other utilities, I observed that National Grid NH's local production facilities serve both a production and a delivery function. Prior to unbundling, cost analysts would assume that all production facilities were dedicated to the supply function. However, from a strict practical operating perspective, that is not the case; local production investments are used jointly between the supply and delivery functions.

The Company's investment in liquid propane air ("LP-air") and liquefied natural gas ("LNG") manufactured gas facilities was segregated between gas supply and pressure support functions. An analysis of the distribution system pressures on the design hour revealed that approximately 11.9% of the Company's peaking capacity is used for pressure support and can be considered as an investment in lieu of distribution reinforcement. This analysis assumed that an unlimited supply of pipeline-delivered gas was available at the utility's gate stations. Then it used the Stoner distribution simulation model to compute the pressure losses across the distribution system in the design hour, when flows are at their maximum. The resulting analysis identified pressure drops that fell below acceptable standards making reliable delivery impossible without the injection of natural gas and concurrent pressure support from the locally manufactured gas facilities. The results of this analysis are summarized in my marginal cost study on Attachment PMN-3, Table 1, page 3. The results indicate that 6,829 dekatherms of design day capacity are required to maintain distribution pressures at an acceptable level. This figure equates to 11.9% of the total manufactured gas capacity. Consequently, I assumed that all production plant and related costs were allocated 88.1% to the supply function and 11.9% to the delivery function.

In order to provide an accurate functional cost study, the marginal study set forth in Attachment PMN-3 re-functionalized a number of costs including the manufactured gas costs between the categories of production expense and distribution expense, National Grid NH is the gate station operator for its service territory. Many of the functions provided at the gate station benefit both bundled sales and transportation customers. For example, the gate station operator must confirm the nominations for its sales customers as well as the nominations of the suppliers selected by its transportation customers. Therefore, costs such as these have both a supply and delivery function. Unfortunately, the accounting system does not provide this same level of information. Some of the costs booked in Account 722 Other Production Supplies & Expenses, provide a joint supply and delivery function. Based upon a more detailed analysis of the costs accumulated in this account, $22,144 (i.e., 10.7%) of expenses in this production account were re-classified to the delivery function relating to the provision of transportation services.

I also identified several other operating and maintenance expenses that should be included in the category of indirect gas cost. A review of Attachment

PMN-2-1 will show that there are many non-production related expense categories that include supply-related costs including customer accounting expenses, sales expense and administrative and general ("A&G") expenses. Most A&G expenses are allocated on the basis of labor. Consequently, the use of production labor costs to allocate A&G expenses produces a significant allocation of A&G expense to the functions other than the delivery function.

Uncollectible accounts expense in Account 1783 was examined to determine the portion applicable to the supply function. As with the Company's previous studies, uncollectible accounts expenses were allocated to functions on the same basis as overall revenue requirements. Since supply costs represent the majority of revenue requirements, it is reasonable that uncollectible accounts expense should also be allocated more heavily to the supply category. As a result, nearly $3.75 million of uncollectible accounts expense were assigned to the indirect gas cost category.

The summary provided on page 1 of Attachment PMN-2-1 displays the calculation of net revenue and rate of return for the Company in total and for each of its major functions. The presentation is fairly straightforward. The first twelve lines summarize the development of rate base. Lines 13 through 15 show current revenues. Lines 16 through 23 detail expenses allowing the computation of operating income on line 24 and the rate of return at current rates on line 25. Line 26 provides the "index rate of return", also known as the relative rate of return, which sets forth each function's rate of return in relation to the total Company rate of return. Net revenues are provided on line 27 of page 1 of Attachment PMN-2-1. Page 1 presents the results of operations under present rates. Therefore, the sales revenues on line 13 represent the delivery and supply revenues collected by the Company's unbundled rates. This page shows that the current rates allow the Company to earn a 5.07% return on its rate base investment. However, that return is not earned uniformly across each function. The delivery function is currently earning a return of 5.37% while the supply functions produce a negative operating income of <$310,251>. Since the direct gas costs are reconciling, the gas costs and the gas revenues are equal, and there is no return generated for direct gas costs. Therefore, all of the supply function operating losses stem from an under-recovery of indirect gas costs.

Page 2 of Attachment PMN-2-1 is very similar to the first page except that instead of using current revenue, it uses claimed revenue necessary to achieve the company's claimed rate of return. This difference is shown on the sales revenue row. For this page, sales revenues for each function were set at levels sufficient to generate a rate of return of 9.09%, the requested rate of return for the Company in this filing. I have provided a third summary, shown on page 3, to compare the differences between pages 1 and 2 which are summarized on lines 10 through 19.

The first five lines of Page 3 of Attachment PMN-2-1 show information taken from page 1, reflecting current operations. Line 6 tabulates therm sales used for the computation of unit costs elsewhere on the page. The lower portion of this page, labeled "Claimed Rate of Return", shows the impact of establishing rates to generate the Company's currently allowed rate of return on equity for each function. For example, line 14 shows that an overall increase of 7.04% would be required to raise the Company's rate of return to 9.09% (line 10). Column 4 shows that no increase would be required for direct gas costs since, once again, they are reconciling and have no associated rate base. The Cost of Gas Clause ("COGC") insures that direct gas cost rates are set equal to direct gas costs. However, as shown in the last column, indirect gas costs require a 22.3% increase or roughly $1.06 million dollars annually in order to achieve the allowed rate of return.

The cost of service study information should be employed to update the approved figures in the COGC. Attachment PMN-2-2 presents a lower level of detail taken from the cost study. This schedule, consisting of three pages, shows the breakdown of indirect gas costs into the four categories included in the COGC, namely: (1) LPG and LNG, (2) Miscellaneous Production Costs, (3) Bad Debt Expense excluding the Bad Debt already included in the LP & LNG costs, and (4) Working Capital. These four categories, when added together, equal total Indirect Gas costs, as shown in the last column (5).

The format of Attachment PMN-2-2 is similar to the first three pages of the functionalized cost of service study, Attachment PMN-2-1. Page 3 of Attachment PMN-2-2 line 12 shows the revenue requirements for each category of indirect gas costs.

Attachment PMN-2-3 provides a concise summary of the information taken from the cost of service study. This schedule shows that the Production and Storage factor, PS, should be $2,109,995; the miscellaneous expense factor, MISC, has also declined and should now be $35,982. The Working Capital Allowance WCA% is set equal to zero. Finally, commensurate with the growth in uncollectible accounts expense, the revised BD% should be set at 3.284%.

The table below should be substituted on page 20 of National Grid NH's tariff, NHPUC No. 5 Gas.

Variable	Description	Approved Figure
MISC	Miscellaneous Overhead	$35,982
PS	Production and Storage Capacity	$2,109,995
WCA%	Working Capital Allowance Percentage	0
BD%	Bad Debt Percentage	3.284%

Marginal Cost Study

The marginal cost study, presented as Attachment PMN-3, consists of fourteen different tables and supporting calculations. The organization of the marginal cost study can be understood by referring to the attached flow chart

(Figure 1). This flow chart shows the logical progression of data in the marginal cost study beginning with plant investment data and proceeding through to the development of marginal unit costs to serve. The summary output from the marginal cost study is shown on Table 14 of Attachment PMN-3. This table and supporting detail show the results of the marginal cost study along with calculations leading to these results.

The flow chart that follows provides the discrete computations made in the marginal cost study. The first three tables comprising the first 9 pages of the marginal cost study develop the plant investment necessary to serve growth. Table 1 (Attachment PMN-3) develops the investment in production plant necessary to serve an increment of customer load. Table 2 (Attachment PMN-3) addresses the capacity-related distribution plant investments, while Table 3 (Attachment PMN-3) addresses customer-related investments to the distribution system. Table 4 (Attachment PMN-3) details the development of estimated marginal production O&M expenses, both commodity and capacity. Table 5 (Attachment PMN-3) computes marginal distribution capacity-related O&M expenses. Table 6 (Attachment PMN-3) estimates customer-related O&M expenses. Table 7 (Attachment PMN-3) develops loading factors used to account for marginal costs not individually estimated, such as administrative and general expenses. Table 8 (Attachment PMN-3) develops levelized fixed charge rates used to translate one-time capital investments into annual revenue requirements. Tables 9, 10, and 11 (Attachment PMN-3) summarize the results of all calculations, depicting the quantification of marginal capacity, commodity, and customer-related costs, respectively.

MARGINAL COST STUDY

FLOWCHART

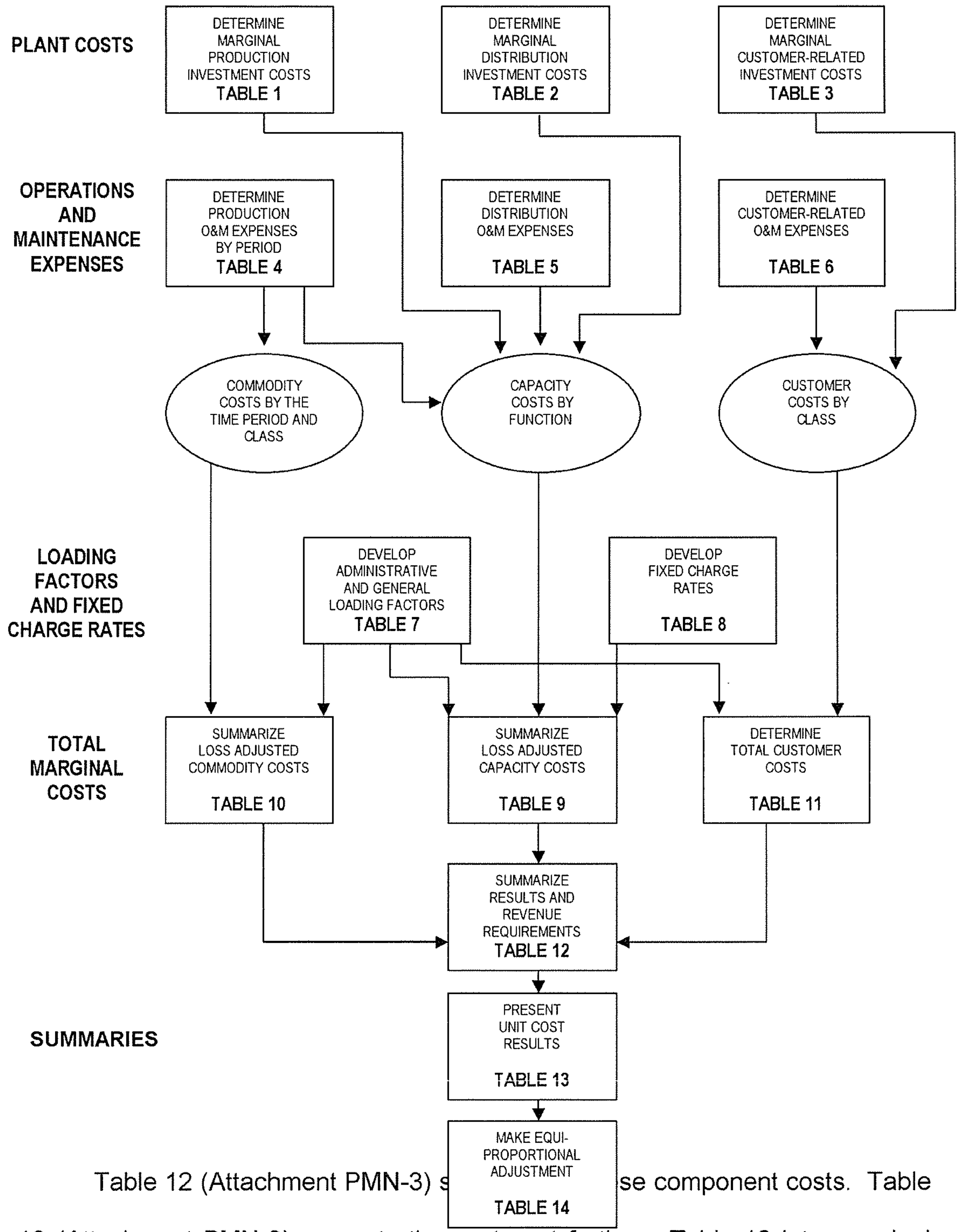

Table 12 (Attachment PMN-3) s se component costs. Table 13 (Attachment PMN-3) converts the costs set forth on Table 12 into marginal

unit costs. Finally, Table 14 (Attachment PMN-3) adjusts the marginal costs for each class using the equi-proportional method so that the sum of the class adjusted marginal costs equals the proposed delivery system revenue requirement of $56,611,421 identified on Attachment PMN-2-1, page 3, line 12, column (2).

Demand or capacity investments for gas distribution companies consist of production, transmission and distribution functions. Production capacity costs are the unitized costs of expanding the Company's production capability to meet a long-run increase in customers' requirements for gas service. Normally, when conducting a marginal cost study to determine delivery costs to serve, one would assume that all production costs, both capacity and commodity costs, fall into the category of supply costs and would be excluded from a study measuring only delivery costs. However, as mentioned previously, the National Grid NH distribution system operates in such a manner that 11.9% of production capacity was and will continue to be used to support the distribution system.

Under most conditions, a small increase in customer demand will cause the Company to incur little or no additional cost. With few exceptions, the Company will meet any additional load with its existing supply sources. However, at some point the load increment will demand that the Company acquire additional sources of supply. In practice, a gas utility may expand its production capacity by increasing the amount of gas it may take under a firm contract from a supplier, by expanding its storage capacity, or by increasing its ability to supply itself from production facilities, such as an LP-air or an LNG vaporizer.

The marginal cost analysis presented in this filing utilizes the peaker method with which the PUC is familiar. This method has been employed in National Grid's (formerly Energy North's) filings in Docket No. 95-121, DG 00-063, and DG 08-009 in Northern Utilities-New Hampshire Division's marginal cost studies filed in Docket Nos. DR94-177 and DR95-236, as well as in most electric utility rate cases. In simple terms, the peaker method identifies the least capital intensive capacity source that can be added to the Company's resources to meet peaks of short duration. For National Grid NH, a new LP storage and vaporization facility located in Tilton, NH, including a supporting distribution pipeline-expansion was the on-system alternative examined in the Company's assessment of alternatives to meet local design hour pressure requirements. Because the marginal cost study is attempting to measure only the costs associated with meeting delivery demands, the fact that the LP project alternative represents the most viable option for meeting the identified need without incremental pipeline capacity is by definition the incremental cost of marginal capacity.

I specifically chose the peaker method to measure marginal production capacity costs in this study. While there are several methods of measuring production capacity costs, I believe that the peaker method provides the most useful information in this docket, where the analysis of delivery costs is required. Marginal gas supply cost data will have no use in the design of delivery rates except to provide directly applicable information necessary to determine the pressure support component of delivery rates.

Let me explain the development of the production plant capacity number shown on page 1 of Attachment PMN-3. The data on this page is derived from the Company's last case escalated two years ago. The development of production plant capacity begins on page 2, of Attachment PMN-3. The Company previously identified a potential 25,200 Dt per day capacity increase for construction of a proposed new LP vaporization and storage facility at Tilton. The unit costs are shown at the bottom of this page.

Page 1 of Attachment PMN-3, Table 1, shows the modified peaker method to compute the long-run marginal capacity costs. This method discounts the costs of pure capacity when current capability exceeds current requirements. The Company's cost estimate for its Tilton LNG plant is stated in nominal Dollars for the first year of capacity shortfall, which occurs three years past the base year of the study. Page 1 of Attachment PMN-3, presents the modified peaker cost calculation, showing a reduction to the peaker cost estimate to reflect the discounted value of the present value of a future plant addition.

Distribution capacity costs were computed in two pieces - the long-run marginal costs of adding main extensions to serve new load and the long-run marginal costs of reinforcing the existing gas distribution system to support the additional loads expected.

Table 2 of Attachment PMN-3, consisting of pages 4 through 8, develops my estimate of the costs to expand the distribution system. My approach, identified as the "Main Extensions and System Reinforcement" method is detailed on pages 6 and 7. Page 7 develops an estimate of the anticipated unit cost of additional main extensions based on an analysis of historical main extension footage, load, and cost. However, load growth places additional load on the Company's existing distribution system and requires reinforcement of that system. Page 6 shows an 11-year, forward-looking distribution system estimate of the costs of system reinforcements. This analysis excluded the expected load growth and distribution investment to serve the Tilton area, since expected additions are required to serve prior period load growth as well as future growth. The cost of reinforcements was estimated using the incremental cost to reinforce the remainder of the distribution system and the expected load growth served by these additions.

Table 4 typically calculates marginal commodity costs. But, because this study is used only to allocate distribution revenues, the only costs estimated on this table are the production expenses associated with transportation as shown on Table 4. As I previously identified, 11.9% of the production capacity is used to support the distribution system, therefore 11.9% of the production expenses are allocated to the distribution function.

The calculation of capacity-related component of Distribution O&M expenses is shown on Table 5 consisting of two pages. I reviewed distribution O&M expenses account by account for the historical period. I directly assigned Meter Operating Labor & Expense, Maintenance of Services & Maintenance of Customer's Meters all to the customer component. In addition, I pro-rated Superintendence in Account 1756 to the customer and capacity components in proportion to all other distribution O&M expenses.

On Table 5 of Attachment PMN-3, I restated the annual capacity-related expenses in terms of current cost, indexing by the GNP Implicit Price Deflator, to determine capacity-related O&M expenses in current dollars. The use of plastic mains, over the past decade, has significantly reduced maintenance costs. Regressing these figures against time resulted in the regression results shown at the bottom of this Table. The regression closely approximated the current average cost which has been stable for virtually every period examined. This suggests that growth requires mains reinforcement and addition of new main, requiring approximately the same maintenance costs as existing mains. I have employed the short term marginal investment per design day decatherm as the best estimate of future marginal costs.

The development of marginal capacity costs is shown on Attachment PMN-3, Table 9. This table develops marginal capacity costs by function. Plant investments identified in Tables 1 and 2 are grossed up to include general plant. Applying the fixed charge rates annualizes these investments. To this amount, annual operating expenses are added, including an allowance for A&G expenses. An adjustment reflecting annual revenue requirements to finance working capital is added. Next, the indicated unit costs were increased to reflect unaccounted for losses experienced. Finally, these costs were escalated from test year to rate year levels.

Marginal customer costs are summarized on Attachment PMN-3, Table 11. The long-run marginal costs of serving an additional customer were determined to be a function of the size of the customer and the class of service. Three different customer costs were computed, representing the costs of connecting and serving a customer for each of the Company's new rate categories. These customer costs consist of:

(1) Plant investment in services and meters,

(2) Related operations and maintenance expenses, and

(3) Billing costs such as customer accounting and customer information expenses.

The computation of customer-related plant investment began with services, as shown on Table 3. These are typical estimates for service construction costs new for each customer class and then adjusted these estimates by the services-per-customer ratio.

Meter investment was developed from current meter cost data. Recent cost accounting data provided the current installation costs and regulator costs, which were applied as a percentage adder to meter investment.

The computation of customer-related operations and maintenance expenses are summarized on Table 6, consisting of five pages. On page 1, customer-related distribution O&M expenses previously identified on Table 5 were restated in current dollars, using the GNP Implicit Price Deflator as a cost index. The average costs have no significant trend over time. Because the regression equation did not appear to be a reasonable predictor of customer related expenses the average deflated cost per customer from 1989 through 2008 was used as the marginal customer costs. Page 2 of Table 6 shows the allocation of costs to customer classes, based on the services and meters investments required.

Page 3 of Table 6 shows the development of customer accounting and marketing services expenses. In general, the number of customers has been increasing, while these customer-related expenses have been roughly keeping pace. However, no valid statistical correlation was demonstrated. Discussion with Company personnel revealed that the post-merger data since 2003 would be most representative of future. The average marginal unit cost for the period 2003 to 2008 was chosen as a proxy for the average marginal customer accounting and marketing costs. The cost was assumed to be equal for all customer classes.

The customer charges shown on page 4 of Table 6 specifically exclude uncollectible accounts expense. A separate analysis of the uncollectible costs is shown on page 5 of Table 6. The actual write-off experience by rate class for the test year has been adjusted on a pro rata basis to reflect the average write-off rate of 3.42% developed from a three year historical average and employed by the Company in this filing.

Attachment PMN-3, Table 7, develops loading factors used in the marginal cost study. Loading factors are used to compute estimates of marginal costs where direct quantification is either too complex or the costs are insignificant. In the former category, administrative and general expenses are only indirectly related to customer load characteristics. To simplify quantification of marginal costs, A&G costs are related to other O&M expenses or plant-related items.

Losses, sendout, unaccounted for, and company use cannot be directly attributed to classes and are computed as a loss factor for use on Tables 9 and

10 of Attachment PMN-3. Table 7 also develops 4-year average loading factors for Materials and Supplies and Prepayments, Fuel Inventory, and General Plant. This period was chosen in order to accurately reflect the post-merger operations of the Company.

The development of the carrying charge rates is shown in Attachment PMN-3, Table 8. These pages detail the development of the levelized fixed charged rates for peaking production facilities, capacity-related distribution plant and customer-related distribution plant. These rates are used to convert one-time investments into annualized revenue requirements, necessary for pricing. For rate-making purposes, utility investments in fixed plant are normally treated as rate base items. Utility rates are established periodically to allow the recovery of costs incurred in ownership, including such items as return, taxes, depreciation, etc. Rather than deal with an irregular set of annual costs stemming from ownership of assets, levelized fixed charge rates compute the present worth of all revenue requirements stemming from utility ownership of an asset, and then provide an equivalent annual payment stream of identical present worth.

The development of a levelized fixed charge rate applicable to Production plant investment is shown on pages 2, 3 and 7. The calculations for capacity-related distribution plant (pages 2, 4, and 8), services (pages 2, 5 and 9), and metering investment (pages 2, 6 and 10) are similar. For simplicity, I will only discuss the calculation of the production plant carrying charge rate.

Page 2 of Table 8 of Attachment PMN-3 shows the input assumptions used to develop levelized fixed charge rates. A hypothetical investment of $1,000 is used for demonstration purposes. Table 8, page 11, shows the development of weighted average service lives and salvage values used as input into the computations. Using current property tax rates and incremental income tax rates, the calculation of annual utility revenue requirements stemming from the initial $1,000 investment is shown on page 7 of Table 8.

Table 8 displays two different fixed charge rates -- the "engineer's" and "economist's" fixed charge rates. The first fixed charge rate is akin to a banker's conventional fixed rate mortgage. It represents a percentage of the original investment that must be made in current year dollars, in order to equate to the present worth of the utility's revenue requirements. The economist's fixed charge rate differs slightly, in that is assumes that payments will escalate each year by the rate of inflation. Inherent in the engineer's fixed charge rate is the assumption that an asset is depleted more rapidly at the outset than toward the end of its service life. The economist's fixed charge rates make the opposite assumption -- that an asset's utility at the beginning of its service life is equal to its value at the end of its service life. In the gas utility industry, old plant is nearly as useful as new plant. As an example, meters provide the same service at the beginning of their lives as they do at their end. Consequently, the economist's fixed charge rate was used to convert one-time plant investments into annual revenue requirements.

Attachment PMN-3, Table 12, tabulates the long-run marginal costs computed on Tables 9 through 11. In addition, Table 12 calculates the revenues that would be generated if the Company were to introduce full marginal cost-based pricing and if customers were to continue to consume on the basis of the demands that they are expected to produce on a design day. Obviously, it is impossible to implement such pricing because the revenues generated would far exceed the Company's claimed revenue requirement. The last line on this page shows the monthly revenue requirements that each customer should provide based upon historical consumption. This summary is presented for all customers receiving firm delivery services. It is important to note that the marginal costs for delivery service consist entirely of fixed costs and fall into two categories: those that vary in the long run with the number of customers in a class and those that vary in the long run with the distribution system capacity needed to serve aggregate class design day demands. None of the costs vary in the short run and none vary with sales volumes. Unfortunately, it is impractical to attempt to price customer consumption on the basis of their anticipated design day demand.

Table 13 of Attachment PMN-3 derives unit costs based on billed sales in the winter and summer months, even though these costs do not vary on the basis of therm sales. Seasonal revenue requirements were divided by seasonal sales to derive unit costs.

Finally, Table 14 of Attachment PMN-3 adjusts marginal costs to allowed revenues. The equi-proportional method is used in accordance with Commission precedent. Under this method, all marginal costs are adjusted by a uniform percentage to match the test year revenue requirements. The unit costs shown at the bottom of this schedule represent the optimal prices if rates were constrained to customer charges and therm charges, as they have in the past. It shows that delivery service is free in the summer and that all marginal capacity costs should be recovered in the winter. A closer scrutiny of the data reveals that all marginal costs are incurred to serve design day demand, and a truly optimal rate design would bill customers an amount designed to recover their marginal costs to serve. These costs are summarized on Table 14 and reflect the total marginal facilities charge on a monthly basis.

Design Day Demand Estimates

Design Day Demand Estimates were employed in the development of costs for the accounting and the marginal cost studies. Design day demands represent the largest daily load for which the utility intends to provide reliable service and for which it designs its system. From a practical standpoint, design day demands can be interpreted as the load expected on the coldest anticipated day. Design day demand estimates play an essential role in utility planning and in determining cost responsibilities in this filing. The design day demand estimates for each customer class were employed in the marginal cost study to establish forward looking cost responsibilities. These costs became the basis for establishing class revenue responsibilities. The class design day estimates were also employed in the development of allocation factors for capacity related costs such as the costs of mains, pressure stations, and storage, in the accounting cost of service study.

Since design day temperatures occur so infrequently, natural gas distribution companies such as National Grid NH have limited data upon which to measure aggregate system design day demands, And, because customer consumption is metered monthly, the company has no daily demand data at the rate class level. Therefore, this demand measure and the rate class allocation must be estimated. In order to insure reasonable estimates, I selected the best estimate using two alternative methods. The first method is called the "Regression Method" and is the preferred method when the regressions are sufficiently robust. Under this approach, the monthly sales data is deemed the independent variable and regressed against the degree days ("DDs") in the customer's billing cycle. Using conventional Least Squares Fit regression techniques, the data is used to generate an equation of the form:

$$Y = a + bX$$

Where "a" is the Y-intercept and is interpreted as the customer's base use in the absence of any heating load and

Where "b" is the slope of the equation and represents the customer's heating increment, i.e., the customer's additional use in therms per degree day.

When a valid regression was established the class load was estimated using the Company's planning criteria, to be able to provide firm service up to 73 heating degree days[1]. The regression method was employed whenever the statistical analysis revealed a high degree of correlation as measured by the value of R-Squared, a "goodness of fit" statistic.

The second method is called the Peak Month Average Use Method. In this method the design day for the class is calculated as the average daily use for the class during the peak month for the G-54 and G-63 classes.

The results of the design day (Dt) are presented in Table 13 of the marginal cost study, Attachment PMN-3, at the bottom (line 33) along with other billing statistics which are used to calculate the total marginal class costs presented on the next page, Table 14.

[1] For the purposes of this study 73 heating degree days were used as the design day standard in place of the 80 effective degree day standard the company uses for supply planning purposes because the billing degree day data used for the analysis are measured as heating degree days.

Table - 8
National Grid - New Hampshire
Development of Revenue Requirements Stream

Metering Equipment

Year No.	Rate Base	Interest On Debt	Return On Preferred	Return On Common	Tax Deprec'N	Book Deprec'N	Deferred Tax	Taxable Income	Inc Tax Payable	Revenue Tax	Property Tax	Property Insurance	ANNUAL Reveue Reqm'Ts	% of Original Investm'T	Present Worth Of Rev Req'Mt
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	1,000.00														
1	983.91	34.54	0.00	56.57	37.50	28.57	3.62	86.19	34.92	0.00	29.48	0.00	187.70	18.77%	174.06
2	944.69	33.16	0.00	54.32	72.19	28.57	17.67	47.71	19.33	0.00	29.37	0.00	182.43	18.24%	156.87
3	899.54	31.57	0.00	51.72	66.77	28.57	15.48	48.76	19.76	0.00	30.13	0.00	177.23	17.72%	141.33
4	856.50	30.06	0.00	49.25	61.77	28.57	13.45	49.61	20.10	0.00	30.90	0.00	172.34	17.23%	127.44
5	815.42	28.62	0.00	46.89	57.13	28.57	11.57	50.27	20.37	0.00	31.70	0.00	167.72	16.77%	115.01
6	776.14	27.24	0.00	44.63	52.85	28.57	9.84	50.75	20.57	0.00	32.51	0.00	163.36	16.34%	103.88
7	738.54	25.92	0.00	42.47	48.88	28.57	8.23	51.08	20.70	0.00	33.35	0.00	159.24	15.92%	93.90
8	702.48	24.66	0.00	40.39	45.22	28.57	6.75	51.26	20.77	0.00	34.20	0.00	155.34	15.53%	84.94
9	667.29	23.42	0.00	38.37	44.62	28.57	6.50	48.46	19.64	0.00	35.08	0.00	151.58	15.16%	76.86
10	632.21	22.19	0.00	36.35	44.62	28.57	6.50	45.07	18.26	0.00	35.99	0.00	147.86	14.79%	69.53
11	597.14	20.96	0.00	34.34	44.62	28.57	6.50	41.68	16.89	0.00	36.91	0.00	144.17	14.42%	62.86
12	562.07	19.73	0.00	32.32	44.62	28.57	6.50	38.29	15.52	0.00	37.86	0.00	140.49	14.05%	56.81
13	527.00	18.50	0.00	30.30	44.62	28.57	6.50	34.90	14.14	0.00	38.83	0.00	136.85	13.68%	51.31
14	491.92	17.27	0.00	28.29	44.62	28.57	6.50	31.51	12.77	0.00	39.83	0.00	133.22	13.32%	46.32
15	456.85	16.04	0.00	26.27	44.62	28.57	6.50	28.12	11.39	0.00	40.85	0.00	129.62	12.96%	41.79
16	421.78	14.80	0.00	24.25	44.62	28.57	6.50	24.73	10.02	0.00	41.90	0.00	126.05	12.61%	37.69
17	386.71	13.57	0.00	22.24	44.62	28.57	6.50	21.34	8.65	0.00	42.98	0.00	122.51	12.25%	33.97
18	351.63	12.34	0.00	20.22	44.62	28.57	6.50	17.95	7.27	0.00	44.08	0.00	118.99	11.90%	30.59
19	316.56	11.11	0.00	18.20	44.62	28.57	6.50	14.56	5.90	0.00	45.22	0.00	115.50	11.55%	27.54
20	281.49	9.88	0.00	16.19	44.62	28.57	6.50	11.17	4.53	0.00	46.38	0.00	112.04	11.20%	24.77
21	250.94	8.81	0.00	14.43	22.31	28.57	(2.54)	30.52	12.37	0.00	47.57	0.00	109.21	10.92%	22.39
22	229.42	8.05	0.00	13.19	0.00	28.57	(11.58)	50.75	20.56	0.00	48.79	0.00	107.60	10.76%	20.46
23	212.43	7.46	0.00	12.21	0.00	28.57	(11.58)	49.11	19.90	0.00	50.05	0.00	106.61	10.66%	18.80
24	195.43	6.86	0.00	11.24	0.00	28.57	(11.58)	47.46	19.23	0.00	51.33	0.00	105.66	10.57%	17.27
25	178.44	6.26	0.00	10.26	0.00	28.57	(11.58)	45.82	18.57	0.00	52.65	0.00	104.74	10.47%	15.88
26	161.45	5.67	0.00	9.28	0.00	28.57	(11.58)	44.18	17.90	0.00	54.01	0.00	103.85	10.39%	14.60
27	144.45	5.07	0.00	8.31	0.00	28.57	(11.58)	42.54	17.24	0.00	55.39	0.00	103.00	10.30%	13.43
28	127.46	4.47	0.00	7.33	0.00	28.57	(11.58)	40.89	16.57	0.00	56.82	0.00	102.18	10.22%	12.35
29	110.46	3.88	0.00	6.35	0.00	28.57	(11.58)	39.25	15.90	0.00	58.28	0.00	101.41	10.14%	11.37
30	93.47	3.28	0.00	5.37	0.00	28.57	(11.58)	37.61	15.24	0.00	59.78	0.00	100.66	10.07%	10.47
31	76.47	2.68	0.00	4.40	0.00	28.57	(11.58)	35.96	14.57	0.00	61.31	0.00	99.96	10.00%	9.64
32	59.48	2.09	0.00	3.42	0.00	28.57	(11.58)	34.32	13.91	0.00	62.89	0.00	99.30	9.93%	8.88
33	42.49	1.49	0.00	2.44	0.00	28.57	(11.58)	32.68	13.24	0.00	64.50	0.00	98.67	9.87%	8.18
34	25.49	0.89	0.00	1.47	0.00	28.57	(11.58)	31.04	12.58	0.00	66.16	0.00	98.09	9.81%	7.54
35	8.50	0.30	0.00	0.49	0.00	28.57	(11.58)	29.39	11.91	0.00	67.86	0.00	97.55	9.76%	6.95
36	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
37	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
38	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
39	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
40	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
41	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
42	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
43	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
44	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
45	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
46	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
47	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
48	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
49	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
50	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
51	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
52	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
53	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
54	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
55	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
56	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
57	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
58	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
59	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
60	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
61	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
62	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
63	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
64	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
65	(0.00)	(0.00)	0.00	(0.00)	0.00	0.00	0.00	(0.00)	(0.00)	0.00	0.00	0.00	(0.00)	0.00%	(0.00)
TOTAL		$502.85	$0.00	$823.76	$1,000.00	$1,000.00	($0.00)	$1,384.94	$561.18	$0.00	$1,594.96	$0.00	$4,482.75		1,756
PRESENT WORTH		$257.55	$0.00	$421.92	$512.08	$338.55	$70.32	$535.81	$217.11	$0.00	$450.22	$0.00	$1,755.67	175.57%	
LEVELIZED PAYMENT		$21.74	$0.00	$35.61	$43.22	$28.57	$5.93	$45.22	$18.32	$0.00	$38.00	$0.00	$148.17	14.82%	

Table - 8
National Grid - New Hampshire
Marginal Cost Study

Development of Weighted Plant Book Lives and Salvage

Line No.	Description	2008 Plant Balance	Average Service Life	Net Salvage Value
	(1)	(2) {1}	(3) {2}	(4) {2}
	HYPOTHETICAL PRODUCTION PLANT			
1	Structures & Improvements	43.3%	30	0%
2	Other Power Equipment	10.2%	30	0%
3	L.P. Gas Equipment	34.1%	30	0%
4	Gas Mixing Equipment	7.1%	30	0%
5	Other Equipment	5.2%	30	0%
6	L.N.G. Equipment	0.0%	30	0%
7				
8	Total Production Plant	100.0%	30	0%
9				
10				
11	**DISTRIBUTION INVESTMENT (excluding Customer Equip)**			
12				
13				
14	1308.6 Distribution Plant Structures	624,182	30	0%
15	1356 Mains	154,426,368	60	-15%
16	1358 Pumping & Regulating Equipment	2,812,639	30	0%
17				
18				
19				
20	Total Distribution Capacity-Related	$157,863,189	59	-15%
21				
22				
23				
24				
25				
26	1359 Services	91,485,682	40	-60%
27				
28				
29	1360 Customer Meters & Installations	22,949,841	35	0%

NOTES:
1 Plant balances taken from Annual Report of 12/31/2008. Production weighting taken from Table - 1, pages 2.
2 Service lives and salvage values based on current depreciation study.

Table - 9
National Grid - New Hampshire
Marginal Cost Study

Summary of Marginal Capacity Costs

Line No.	Description	---- PRODUCTION ---- Supply Related	Transp. Related	----TRANS & DIST---- Mains Reinforce	Mains Extension	Total Dist	Total Prod & Dist
		(1)	(2)	(3)	(4)	(5)	(6)
	PLANT INVESTMENT						
1	Long-Run Unit Costs - $/Design Day Dt {1}	$1,329.67	$179.56	$226.85	$1,390.05	$1,616.90	$3,126.13
2	General Plant Loading Factor	6.25%	6.25%	6.25%	6.25%		
3	Unit Costs + Loading Factor (1)+(1)*(2)	1,412.75	190.78	241.02	1,476.91	$1,717.93	$3,321.45
4							
5	Fixed Charge Rate	10.71%	10.71%	9.31%	9.31%		
6	A & G Exp Plant-Related Loading Factor	0.23%	0.23%	0.23%	0.23%		
7	Total Rate (5)+(6)	10.95%	10.95%	9.54%	9.54%		
8							
9	Annualized Cost (3)*(7)	$154.63	$20.88	$22.99	$140.89	$163.88	$339.40
10							
11	**OPERATING EXPENSES**						
12	Production capacity costs {2}	$2.24	$0.30				$2.55
13	Distribution capacity costs {3}			$0.00	$29.17	$29.17	$29.17
14	A&G Exp Non-Plant Loading Factor	63.40%	63.40%	63.40%	63.40%		
15	Total O&M Expense [(12)+(13)]*[1+(14)]	$3.67	$0.49	$0.00	$47.67	$47.67	$51.83
16							
17	**WORKING CAPITAL**						
18	Materials & Supplies + Prepayments Rate {4}	0.13%	0.13%	0.13%	0.13%		
19	M&S Cost (3)*(17)	1.80	0.24	0.31	1.88	$2.18	$4.22
20	Working Cash O&M Allowance {5} [(9)+(15)]*8.65%	13.69	1.85	1.99	16.31	$18.30	$33.84
21	Total Working Capital (19)+(20)	$15.49	$2.09	$2.30	$18.19	$20.48	$38.06
22							
23	Working Capital Rev. Req'd {6} (21)*13.18%	$2.04	$0.28	$0.30	$2.40	$2.70	$5.02
24							
25	System Seasonal Capacity Related Cost	{9}					
26	$/Design Day Dt (9)+(15)+(23)	$0.00	$21.65	$23.30	$190.95	$214.25	$235.90
27							
28	Loss Factor {7}	0.975	0.975	0.975	0.975	0.975	0.975
29	Inflation Adjustment {8}	6.34%	6.34%	6.34%	6.34%	6.34%	6.34%
30							
31	**Seasonal Capacity Cost (26)*[1+(28)]/(29)**	**$0.00**	**$23.60**	**$25.40**	**$208.17**	**$233.57**	**$257.17**

NOTES:

1 Sources: Production taken from Table - 1, Page 1. Distribution taken from Table - 2, page 1.
2 Source: Table - 4, page 2.
3 Source: Table - 5, page 1.
4 Source: Table - 7, page 2.
5 Working cash computed on the basis of previous study.
6 Revenue requirement for working cash computed as the after tax cost of capital, i.e debt costs plus equity costs increased by taxes equals 13.18%.
7 Source: Table - 7 , page 2.
8 Inflation adjustment to restate marginal costs to rate year dollars
9 Supply capacity costs set to zero since they are not applicable to delivery marginal costs

Table - 10
National Grid - New Hampshire
Marginal Cost Study

Summary of Marginal Commodity Costs

Line No.	Description	Residential ResNonHt R-1	Residential ResHt R-3&R-4	Small C&I SmHiW G-41	Small C&I SmLoW G-51	Medium C&I MdHiW G-42	Medium C&I MdLoW G-52	Large C&I LgHiW G-43	Large C&I LgLF<90 G-53	Large C&I LgLF<110 G-54	Large C&I LgLF>110 G-63
	PLANT INVESTMENT										
1											
2											
3											
4	MARGINAL COMMODITY COSTS NOT COMPUTED FOR DISTRIBUTION MARGINAL COST STUDY										
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											

Table - 11
National Grid - New Hampshire
Marginal Cost Study

Summary of Marginal Customer Costs

Line No.	Description		--------- Residential --------- ResNonHt R-1	ResHt R-3&R-4	---------- Small C&I ---------- SmHiW G-41	SmLoW G-51	-------- Medium C&I -------- MdHiW G-42	MdLoW G-52	---------- Large C&I ---------- LgHiW G-43	LgLF<90 G-53	LgLF<110 G-54
	(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	PLANT INVESTMENT										
1	Meters and Regulators	{1}	$205.04	$205.04	$305.92	$305.92	$1,175.26	$1,175.26	$2,471.57	$2,471.57	$11,142.23
2	General Plant Loading Factor	{2}	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
3	Unit Costs + Loading Factor	(1)+(1)*(2)	217.85	217.85	325.03	325.03	1,248.69	1,248.69	2,625.99	2,625.99	11,838.41
4	Fixed Charge Rate	{3}	11.19%	11.19%	11.19%	11.19%	11.19%	11.19%	11.19%	11.19%	11.19%
5	Meters Carrying Costs	(3)*(4)	24.37	24.37	36.36	36.36	139.69	139.69	293.77	293.77	1,324.34
6	Services	{1}	1,838.25	1,838.25	2,270.41	2,270.41	7,080.41	7,080.41	8,063.76	8,063.76	15,605.88
7	General Plant Loading Factor	{2}	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
8	Unit Costs + Loading Factor	(6)+(6)*(7)	1,953.11	1,953.11	2,412.27	2,412.27	7,522.80	7,522.80	8,567.59	8,567.59	16,580.96
9	Fixed Charge Rate	{3}	9.61%	9.61%	9.61%	9.61%	9.61%	9.61%	9.61%	9.61%	9.61%
10	Services Carrying Costs	(8)*(9)	187.68	187.68	231.81	231.81	722.90	722.90	823.30	823.30	1,593.34
11											
12	Total Plant Carrying Costs	(5)+(10)	$212.05	$212.05	$268.17	$268.17	$862.59	$862.59	$1,117.06	$1,117.06	$2,917.68
13											
14	A & G Exp Plant-Related Loading Factor	{4}	0.23%	0.23%	0.23%	0.23%	0.23%	0.23%	0.23%	0.23%	0.23%
15											
16	Annualized Cost	(100%+(14))*(12)	$212.55	$212.55	$268.79	$268.79	$864.59	$864.59	$1,119.66	$1,119.66	$2,924.46
17											
18											
19	**OPERATING EXPENSES**										
20	Plant Related O&M $/Customer	{5}	$29.29	$29.29	$36.93	$36.93	$118.33	$118.33	$151.00	$151.00	$383.38
21	Customer Acctg & Mktg Expenses	{6}	$40.88	$40.88	$40.88	$40.88	$40.88	$40.88	$40.88	$40.88	$40.88
22	A&G Exp Non-Plant Loading Factor	{4}	63.40%	63.40%	63.40%	63.40%	63.40%	63.40%	63.40%	63.40%	63.40%
23	Total O&M Expense	(20+21+[20+21]*22)	$114.65	$114.65	$127.14	$127.14	$260.14	$260.14	$313.53	$313.53	$693.22
24											
25	**WORKING CAPITAL - $/Customer**										
26	Materials & Supplies + Prepayments Rate	{3}	0.13%	0.13%	0.13%	0.13%	0.13%	0.13%	0.13%	0.13%	0.13%
27	M&S Cost	[(3)+(8)]*(26)	2.76	2.76	3.48	3.48	11.15	11.15	14.23	14.23	36.13
28	Working Cash O&M Allowance	{7} [(16)+(34)]*8.65%	28.30	28.30	34.25	34.25	97.29	97.29	123.97	123.97	312.93
29	Total Working Capital	(27)+(28)	$31.06	$31.06	$37.73	$37.73	$108.44	$108.44	$138.20	$138.20	$349.06
30		{8}									
31	Working Capital Rev. Requirement	(29)* 13.18%	$4.09	$4.09	$4.97	$4.97	$14.29	$14.29	$18.21	$18.21	$46.00
32											
33	Annual Customer Related Cost		$331.29	$331.29	$400.90	$400.90	$1,139.02	$1,139.02	$1,451.40	$1,451.40	$3,663.68
34	$/Customer	(16)+(23)+(31)									
35	Inflation Adjustment	{9}	6.34%	6.34%	6.34%	6.34%	6.34%	6.34%	6.34%	6.34%	6.34%
36											
37	**Annual Customer Related Cost**	**(33)*[1+(35)]**	$352.30	$352.30	$426.31	$426.31	$1,211.24	$1,211.24	$1,543.42	$1,543.42	$3,895.95

NOTES:
1 Meter investment from Table - 3, Page 1.
2 Source: Table - 7, page 2.
3 Source: Table - 8, page 1.
4 Source: Table - 7, page 1.
5 Source: Table - 6, page 2.
6 Source: Table - 6, page 4.
7 Working cash computed on the basis of 31.57 days net lag.
8 Revenue requirement for working cash computed as tax rate divided by 1 minus tax rate multiplied by the cost of equity all added to the cost of capital.
9 Source: Price escalation to mid-point of rate year.

Table - 12
National Grid - New Hampshire
Marginal Cost Study

Summary of Marginal Cost Estimates

Line No.	Description		--- Residential --- ResNonHt R-1	ResHt R-3&R-4	--- Small C&I --- SmHiW G-41	SmLoW G-51	--- Medium C&I --- MdHiW G-42	MdLoW G-52	--- Large C&I --- LgHiW G-43	LgLF<90 G-53	LgLF<110 G-54	LgLF>110 G-63	Total Company
	(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	UNCOLLECTIBLE FACTOR		5.73%	5.51%	1.28%	0.56%	0.16%	1.69%	0.00%	0.00%	0.00%	0.00%	
2													
3	CUSTOMER CHARGE $'s per month	(1)											
4	Customer Charge w/o Uncollectibles		$29.36	$29.36	$35.53	$35.53	$100.94	$100.94	$128.62	$128.62	$324.66	$324.66	
5	Adjustment for Uncollectibles	(1)*(4)	1.68	1.62	0.46	0.20	0.16	1.70	0.00	0.00	0.00	0.00	
6	Customer Charge Incl. Uncollectibles	(4)+(5)	$31.04	$30.98	$35.98	$35.73	$101.10	$102.64	$128.62	$128.62	$324.66	$324.66	
7													
8	WINTER CHARGES												
9	Gas Supply Demand Charge, Design Day, Dt	(3)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
10	Delivery Demand Charge - Pressure Support	(2)	23.60	23.60	23.60	23.60	23.60	23.60	23.60	23.60	23.60	23.60	
11	Delivery Demand Charge - Reinforcements	(2)	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	
12	Delivery Demand Charge - Main Extensions	(2)	208.17	208.17	208.17	208.17	208.17	208.17	208.17	208.17	208.17	208.17	
13	Adjustment for Uncollectibles	[(9)+(10)+(11)+(12)]*(1	$14.75	$14.17	$3.30	$1.45	$0.41	$4.34	$0.00	$0.00	$0.00	$0.00	
14	Winter Charges Incl. Uncollectibles	(13)+(14)	$271.92	$271.34	$260.47	$258.62	$257.58	$261.51	$257.17	$257.17	$257.17	$257.17	
15													
16	Supply Commodity Charge $'s per Dt	(3)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
17	Adjustment for Uncollectibles	(1)*(16)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18	Supply Commodity Charge Incl. Uncollectibles	(17)+(18)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
19													
20	SUMMER CHARGES												
21	Demand Charge $'s per Design Day Dt	(2)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
22	Delivery Demand Charge		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23	Adjustment for Uncollectibles	[(21)+(22)]*(1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
24	Summer Charges Incl. Uncollectibles		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
25													
26	Commodity Charge $'s per Dt	(3)	$0.00	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	
27	Adjustment for Uncollectibles	(1)*(26)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
28	Commodity Charge Incl. Uncollectibles	(26)+(27)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
29													
30	CALENDAR MONTH BILLING DETERMINANTS	(2008)											
31	Customers		4,482	69,455	7,530	1,308	1,484	309	40	35	5	15	84,664
32	Design Day Dt -Sales & Transp		707	61,972	21,418	2,556	33,108	3,987	6,530	4,420	2,833	2,590	140,121
33	Winter Dt -Sales & Transp		694,780	45,906,857	15,717,608	2,454,019	24,799,619	4,155,286	5,702,562	5,254,414	3,411,445	4,382,964	112,479,555
34	Summer Dt -Sales & Transp		352,122	10,432,792	2,503,058	1,290,733	5,538,175	2,519,576	1,862,758	3,658,766	3,806,172	4,328,182	36,292,334
35													
36	REVENUES RESULTING FROM FULL MARGINAL COST PRICING												
37	Total Customer Related	(6)*(31)*12 Mos.	$1,669,711	$25,817,043	$3,251,245	$560,738	$1,800,084	$380,861	$61,818	$54,457	$20,843	$59,024	33,675,825
38													
39	Winter												
40	Winter Supply Capacity Cost	(1+(1))*(9)*(32)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
41	Winter Delivery Pressure Support	(1+(1))*(10)*(32	17,641	1,543,434	512,043	60,676	782,748	95,691	154,126	104,342	66,873	61,140	3,398,715
42	Winter Delivery Reinforcements	(1+(1))*(11)*(32	18,979	1,660,547	550,895	65,280	842,141	102,952	165,821	112,260	71,948	65,779	3,656,602
43	Winter Delivery Main Ext.	(1+(1))*(12)*(32	155,577	13,611,798	4,515,788	535,110	6,903,182	843,917	1,359,266	920,212	589,767	539,204	29,973,821
44	Winter Supply Commodity	(1+(1))*(16)*(33	0	0	0	0	0	0	0	0	0	0	0
45	Total Winter	(40)+(41)+(42)+(43)+(44)	$192,197	$16,815,779	$5,578,726	$661,065	$8,528,072	$1,042,560	$1,679,214	$1,136,814	$728,588	$666,124	$37,029,139
46													
47	Summer												
48	Summer Supply Demand	(1+(1))*(21)*(32	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
49	Delivery Demand Charge	(1+(1))*(22)*(34	0	0	0	0	0	0	0	0	0	0	0
50	Summer Supply Commodity	(1+(1))*(26)*(34	0	0	0	0	0	0	0	0	0	0	0
51	Total Summer		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
52													
53	Customer Subtotal	(37)	1,669,711	25,817,043	3,251,245	560,738	1,800,084	380,861	61,818	54,457	20,843	59,024	$33,675,825
54	Supply Subtotal	(40)+(44)+(48)+(50)	0	0	0	0	0	0	0	0	0	0	0
55	Delivery Subtotal	(41)+(42)+(43)+(49)	192,197	16,815,779	5,578,726	661,065	8,528,072	1,042,560	1,679,214	1,136,814	728,588	666,124	37,029,139
56	**Total Marginal Annual Cost**		$1,861,908	$42,632,822	$8,829,971	$1,221,804	$10,328,156	$1,423,422	$1,741,032	$1,191,271	$749,432	$725,147	$70,704,963

NOTES:
1 Source: Table 11, page 1, line (37)/12
2 Source: Table - 9, page 1.
3 Source: Table - 10, page 1."These values are zeroed out sc production capacity costs that are recovered through the Cost of Gas Factor are excluded from delivery marginal costs.

Table - 13
National Grid - New Hampshire
Marginal Cost Study

Marginal Unit Costs per Dt

Line No.	Description	--- Residential --- ResNonHt R-1	ResHt R-3&R-4	--- Small C&I --- SmHiW G-41	SmLoW G-51	--- Medium C&I --- MdHiW G-42	MdLoW G-52	--- Large C&I --- LgHiW G-43	LgLF<90 G-53	LgLF<110 G-54	LgLF>110 G-63
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	CUSTOMER CHARGE										
2	Customer Charge (w/ Uncoll) $'s per Month	$31.042	$30.976	$35.982	$35.726	$101.098	$102.638	$128.618	$128.618	$324.662	$324.662
3											
4											
5	WINTER CHARGES {1}										
6	Winter Supply Capacity Cost	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
7	Winter Delivery Pressure Support	$0.0254	$0.0336	$0.0326	$0.0247	$0.0316	$0.0230	$0.0270	$0.0199	$0.0196	$0.0139
8	Winter Delivery Reinforcements	$0.0273	$0.0362	$0.0350	$0.0266	$0.0340	$0.0248	$0.0291	$0.0214	$0.0211	$0.0150
9	Winter Delivery Main Ext.	$0.2239	$0.2965	$0.2873	$0.2181	$0.2784	$0.2031	$0.2384	$0.1751	$0.1729	$0.1230
10	Winter Supply Commodity	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
11											
12											
13	SUMMER CHARGES {1}										
14	Supply Demand Charge	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
15	Delivery Demand Charge	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
16	Commodity Charge $'s per Dt	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
17											
18	**TOTAL CHARGES**										
19	<u>Supply Costs</u>										
20	Customer	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
21	Winter, $/Dt	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
22	Summer, $/Dt	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
23	Annual Avg, $/Dt	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
24											
25	<u>Delivery</u>										
26	Customer (2)	$31.04	$30.98	$35.98	$35.73	$101.10	$102.64	$128.62	$128.62	$324.66	$324.66
27	Winter, $/Dt (7)+(8)+(9)	$0.2766	$0.3663	$0.3549	$0.2694	$0.3439	$0.2509	$0.2945	$0.2164	$0.2136	$0.1520
28	Summer, $/Dt (15)	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
29	Annual Avg, $/Dt	$0.1836	$0.2985	$0.3062	$0.1765	$0.2811	$0.1562	$0.2220	$0.1275	$0.1009	$0.0765
30											
31	TEST YEAR CALENDAR MONTH BILLING DETERMINANTS - SALES and TRANSPORTATION LOADS (All Firm Loads)										
32	Customers	4,482	69,455	7,530	1,308	1,484	309	40	35	5	15
33	Design Day Dt	707	61,972	21,418	2,556	33,108	3,987	6,530	4,420	2,833	2,590
34	Winter Dt	694,780	45,906,857	15,717,608	2,454,019	24,799,619	4,155,286	5,702,562	5,254,414	3,411,445	4,382,964
35	Summer Dt	352,122	10,432,792	2,503,058	1,290,733	5,538,175	2,519,576	1,862,758	3,658,766	3,806,172	4,328,182
36	Total Annual Dt	1,046,902	56,339,649	18,220,666	3,744,752	30,337,794	6,674,862	7,565,321	8,913,180	7,217,618	8,711,146

NOTES:
1 Source: Table - 12 revenues divided by billing month normalized determinants.

Table - 14
National Grid - New Hampshire
Marginal Cost Study

Derivation of Marginal Prices Equi-Porportionately Constrained by Embedded Costs

Line No.	Description		--- Residential --- ResNonHt R-1	ResHt R-3&R-4	--- Small C&I --- SmHiW G-41	SmLoW G-51	--- Medium C&I --- MdHiW G-42	MdLoW G-52	--- Large C&I --- LgHiW G-43	LgLF<90 G-53	LgLF<110 G-54	LgLF>110 G-63	Total Company
	(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	Estimated Delivery Revenue Reqm'ts	{1}											$55,611,421
2	Total Marginal Annual Revenue Requirements	{2}	1,861,908	42,632,822	8,829,971	1,221,804	10,328,156	1,423,422	1,741,032	1,191,271	749,432	725,147	70,704,963
3	Difference	(1) - (2)											(15,093,542)
4	% Difference	(3)/(2)											-21.35%
5	Equi-proportional Adjustment	(2) x (4)	(397,465)	(9,100,921)	(1,884,953)	(260,821)	(2,204,774)	(303,861)	(371,662)	(254,303)	(159,983)	(154,799)	(15,093,542)
6	Marginal Cost Constained to Allowed Revenues	(2) + (5)	1,464,442	33,531,901	6,945,018	960,983	8,123,382	1,119,561	1,369,370	936,967	589,449	570,348	55,611,421
7													
8	Marginal Unit Prices	Unit Costs from											
9	Customer	Table 14 X	$24.42	$24.36	$28.30	$28.10	$79.52	$80.73	$101.16	$101.16	$255.36	$255.36	
10		[1+ (4)]											
11	WINTER CHARGES												
12	Winter Supply Capacity Cost		$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
13	Winter Delivery Pressure Support		$0.0200	$0.0264	$0.0256	$0.0194	$0.0248	$0.0181	$0.0213	$0.0156	$0.0154	$0.0110	
14	Winter Delivery Reinforcements		$0.0215	$0.0285	$0.0276	$0.0209	$0.0267	$0.0195	$0.0229	$0.0168	$0.0166	$0.0118	
15	Winter Delivery Main Ext.		$0.1761	$0.2332	$0.2260	$0.1715	$0.2189	$0.1597	$0.1875	$0.1377	$0.1360	$0.0968	
16	Winter Supply Commodity		$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
17			$0.2176	$0.2881	$0.2792	$0.2119	$0.2705	$0.1973	$0.2316	$0.1702	$0.1680	$0.1195	
18													
19	SUMMER CHARGES												
20	Supply Demand Charge		$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
21	Delivery Demand Charge		$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
22	Commodity Charge	$'s per Dt	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
23			$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
24	TOTAL CHARGES												
25	Supply Costs												
26	Customer		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
27	Winter, $/Dt		$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
28	Summer, $/Dt		$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
29	Annual Avg, $/Dt		$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
30													
31													
32	Delivery												
33	Customer Charges		$24.42	$24.36	$28.30	$28.10	$79.52	$80.73	$101.16	$101.16	$255.36	$255.36	
34	Winter, $/Dt		$0.2176	$0.2881	$0.2792	$0.2119	$0.2705	$0.1973	$0.2316	$0.1702	$0.1680	$0.1195	
35	Summer, $/Dt		$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	
36	Annual Avg, $/Dt		$0.1444	$0.2348	$0.2408	$0.1388	$0.2211	$0.1228	$0.1746	$0.1003	$0.0794	$0.0601	
37	or												
38	Facilities Charge, $/Month	(6) / Annual b:	$ 27.23	$ 40.23	$ 76.86	$ 61.23	$ 456.23	$ 301.71	$ 2,849.10	$ 2,212.96	$ 9,181.43	$ 3,137.23	

Table - 14
National Grid - New Hampshire
Marginal Cost Study

Derivation of Marginal Prices Inverse Elasticty Constrained by Embedded Costs

Line No.	Description		--------- Residential ---------		---------- Small C&I ----------		-------- Medium C&I --------		------------------------------ Large C&I ------------------------------				
			ResNonHt R-1	ResHt R-3&R-4	SmHiW G-41	SmLoW G-51	MdHiW G-42	MdLoW G-52	LgHiW G-43	LgLF<90 G-53	LgLF<110 G-54	LgLF>110 G-63	Total Company
	(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	MARGINAL COSTS												
1	Marginal Customer Related Costs	{2}	$1,669,711	$25,817,043	$3,251,245	$560,738	$1,800,084	$380,861	$61,818	$54,457	$20,843	$59,024	$33,675,825
2	Total Marginal Annual Revenue Requirements	{2}	1,861,908	42,632,822	8,829,971	1,221,804	10,328,156	1,423,422	1,741,032	1,191,271	749,432	725,147	$70,704,963
3	Non-Customer Costs	(2)-(1)	$192,197	$25,817,043	$3,251,245	$560,738	$1,800,084	$380,861	$61,818	$54,457	$20,843	$59,024	$32,198,311
4													
5	RECONCILIATION												
6	Total Estiimated Delivery Revenue Requirments												55,611,421
7	Customer Cost Adjusted to Meet Rev Req'd	(6)-(3)											23,413,110
8	Constrained Customer Revenues	(1)*(7)/(1)	1,160,866	17,949,294	2,260,428	389,853	1,251,508	264,794	42,979	37,861	14,491	41,036	
9													
10	CUSTOMER CHARGE (If allowed to be negative)												
11	Average Number of Monthly Bills		4,482	69,455	7,530	1,308	1,484	309	40	35	5	15	84,664
12	Customer Charge (w/ Uncoll) $'s per Month	(8)/(11)/12	$21.58	$21.54	$25.02	$24.84	$70.29	$71.36	$89.42	$89.42	$225.72	$225.72	$23.05
13													
14	CUSTOMER CHARGE (If constrained to be non-negative)		NOT APPLICABLE										
15	Customer Charge (w/ Uncoll) $'s per Month		$21.58	$21.54	$25.02	$24.84	$70.29	$71.36	$89.42	$89.42	$225.72	$225.72	$23.05
16	Customer-Related Revenue	(11)*(15)*12 Months	$1,160,866	$17,949,294	$2,260,428	$389,853	$1,251,508	$264,794	$42,979	$37,861	$14,491	$41,036	$23,413,110
17	Adjmt to Winter Demand Charge	(8)-(16) (4)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
18	Adjmt to Winter Demand Chrg, $/Dt												
19													
20	WINTER CHARGES (Adjusted for Non-negative Customer Charge)												
21	Winter Billing Units		694,780	45,906,857	15,717,608	2,454,019	24,799,619	4,155,286	5,702,562	5,254,414	3,411,445	4,382,964	112,479,555
22	Marginal Winter Demand Charge Revenues (Unadjusted)		0	0	0	0	0	0	0	0	0	0	0
23	Adjusted Winter Demand Revenue	(33)+(37)	0	0	0	0	0	0	0	0	0	0	0
24	Adjusted Winter Demand Rate	(38)/(36)	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
	Commodity Charge	(18)	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
	Total Winter	(39)+(40)	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000

NOTES:
1 Source: Company's Accounting Cost Study
2 Source: Table - 12.
3 Source: Table - 13.
4 Assumes the Demand Charge is the second least elastic component of rates.

2/23/2010 11:45 AM

National Grid NH
Rate Design
Summary of Indirect Gas Costs

Line No.	Description	Non-Heat	Heat	Low Income	Small High Winter Use	Med High Winter Use	Large High Winter Use	Small Low Winter Use	Med Low Winter Use	Large Load Factor <90%	Large Load Factor <110%	Large Load Factor >110%	Total	*Large Load Factor >90%*
	Rate Designation	**RNSH**	**RSH**	**RLIAP**	**SH**	**MH**	**LH**	**SL**	**ML**	**LLL90**	**LLL110**	**LLG110**		***LLG90***
		R-1	**R-3**	**R-4**	**G-41**	**G-42**	**G-43**	**G-51**	**G-52**	**G-53**	**G-54**	**G-63**		***G-54 + G-63***
1	LP and LNG Costs												2,109,995	
2	Sales Volumes	1,048,617	52,018,828	4,819,486	16,156,631	19,916,838	1,704,713	3,239,228	4,676,475	571,506	-	11,399	104,163,722	11,399
3	Unit Cost in COGC												$ 0.02030	
4	Class Revenues	21,287	1,055,982	97,836	327,980	404,312	34,606	65,756	94,932	11,602	-	231	2,114,524	231
5														
6	Bad Debt Costs												3,683,576	
7	Sales Volumes	1,048,617	52,018,828	4,819,486	16,156,631	19,916,838	1,704,713	3,239,228	4,676,475	571,506	-	11,399	104,163,722	11,399
8	Unit Cost in COGC												$ 0.03540	
9	Class Revenues	37,121	1,841,467	170,610	571,945	705,056	60,347	114,669	165,547	20,231	-	404	3,687,396	404
10														
11	Gas Working Capital												-	
12	Sales Volumes	1,048,617	52,018,828	4,819,486	16,156,631	19,916,838	1,704,713	3,239,228	4,676,475	571,506	-	11,399	104,163,722	11,399
13	Unit Cost in COGC												$ -	
14	Class Revenues	-	-	-	-	-	-	-	-	-	-	-	-	-
15														
16	Other A&G and Misc.												35,982	
17	Sales Volumes	1,048,617	52,018,828	4,819,486	16,156,631	19,916,838	1,704,713	3,239,228	4,676,475	571,506	-	11,399	104,163,722	11,399
18	Unit Cost in COGC												$ 0.00030	
19	Class Revenues	315	15,606	1,446	4,847	5,975	511	972	1,403	171	-	3	31,249	3
20														
21	Total Indirect Gas Costs	58,723	2,913,054	269,891	904,771	1,115,343	95,464	181,397	261,883	32,004	-	638	5,833,168	638
22														
23	Total from Attachment PMN-2-3, pg 1												5,829,554	
24														
25	Variance, $s												3,615	
26														
27	Variance, %												0.06%	

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National Grid NH
Rate Design
Derivation of Revnue Targets

Line No.	Description	Non-Heat	Heat	Low Income	Small High Winter Use	Med High Winter Use	Large High Winter Use	Small Low Winter Use	Med Low Winter Use	Large Load Factor <90%	Large Load Factor <110%	Large Load Factor >110%	Total	*Large Load Factor >90%*
	Rate Designation	**RNSH R-1**	**RSH R-3**	**RLIAP R-4**	**SH G-41**	**MH G-42**	**LH G-43**	**SL G-51**	**ML G-52**	**LLL90 G-53**	**LLL110 G-54**	**LLG110 G-63**		***LLG90 G-54 + G-63***
1	**Rate Design Parameters**													
2	Rate Cap on Class Revenue Targets	150%	125%	125%	125%	125%	125%	125%	125%	125%	125%	125%		125%
3														
4	**Calendar Month Billing Determinants (Dry)**													
5	Number of Annual Bills - Sales & Delivery Svc	53,789	766,770	66,691	90,357	17,805	481	15,695	3,711	423	64	182	1,015,969	*246*
6	Total Annual Therms - Sales & Delivery Svc	1,046,902	51,659,668	4,679,981	18,220,666	30,337,794	7,565,321	3,744,752	6,674,862	8,913,180	7,217,618	8,711,146	148,771,890	*15,928,764*
7	Winter	694,780	41,997,131	3,909,726	15,717,608	24,799,619	5,702,562	2,454,019	4,155,286	5,254,414	3,411,445	4,382,964	112,479,555	*7,794,410*
8	Summer	352,122	9,662,537	770,255	2,503,058	5,538,175	1,862,758	1,290,733	2,519,576	3,658,766	3,806,172	4,328,182	36,292,334	*8,134,354*
9														
10	**Test Year Delivery Revenues - Assume No R-4 Discount,**													
11	Customer Charge	525,522	10,757,784	935,339	3,169,726	1,784,803	202,351	550,593	371,964	182,498	27,672	78,361	18,586,615	*106,033*
12	Total Annual Therms - Sales & Delivery Svc	157,768	11,702,350	1,066,398	3,948,658	6,228,445	1,042,886	533,798	735,533	761,411	194,185	238,696	26,610,130	*432,881*
13	Winter	104,703	9,560,704	899,337	3,420,001	5,070,080	907,278	344,830	507,054	571,155	121,106	155,595	21,661,843	*276,702*
14	Summer	53,065	2,141,646	167,062	528,658	1,158,365	135,609	188,968	228,479	190,256	73,079	83,101	4,948,287	*156,180*
15	Total Revenue	683,291	22,460,134	2,001,738	7,118,384	8,013,249	1,245,238	1,084,392	1,107,497	943,909	221,857	317,058	45,196,746	*538,915*
16														
17	**Pure Marginal Cost Based Rates**													
18	Facilities Charge, $/Mo (Reconciled to Rev Req'd)	$27.23	$40.23	$40.23	$76.86	$456.23	$2,849.10	$61.23	$301.71	$2,212.96	$9,181.43	$3,137.23		
19	Annual Bills	53,789	766,770	66,691	90,357	17,805	481	15,695	3,711	423	64	182		
20														
21	**Marginal Costs to Serve**												(Total Rev Required)	
22	Marginal Costs for Delivery Service	$1,464,442	$30,848,786	$2,683,115	$6,945,018	$8,123,382	$1,369,370	$960,983	$1,119,561	$936,967	$589,449	$570,348	########	*1,159,797*
23	Overall Delivery rate Increase												23.04%	
24	**Revenue Target Calculation**													
25	Marginal Cost to Serve	1,464,442	30,848,786	2,683,115	6,945,018	8,123,382	1,369,370	960,983	1,119,561	936,967	589,449	570,348	55,611,421	*1,159,797*
26	Present Revenue	683,291	22,460,134	2,001,738	7,118,384	8,013,249	1,245,238	1,084,392	1,107,497	943,909	221,857	317,058	45,196,746	*538,915*
27	Increase without Consideration of Impact	781,152	8,388,652	681,377	(173,366)	110,133	124,132	(123,409)	12,064	(6,941)	367,592	253,291	10,414,675	*620,883*
28	Percentage Increase to Achieve Marginal Cost	114.32%	37.35%	34.04%	-2.44%	1.37%	9.97%	-11.38%	1.09%	-0.74%	165.69%	79.89%	23.04%	*115.21%*
29	Rate Cap to Control Impact (Multiplier to Avg Increase)	150.00%	125.00%	125.00%	125.00%	125.00%	125.00%	125.00%	125.00%	125.00%	125.00%	125.00%		125.00%
30	Maximum Percentage Increase (Cap)	34.56%	28.80%	28.80%	28.80%	28.80%	28.80%	28.80%	28.80%	28.80%	28.80%	28.80%		28.80%
31	Maximum Revenues Applying Cap	919,466	28,929,489	2,578,313	9,168,744	10,321,362	1,603,913	1,396,737	1,426,497	1,215,790	285,760	408,382	58,254,453	*694,142*
32														
33														
34														

National Grid NH
Rate Design
Derivation of Revnue Targets

Line No.	Description	Non-Heat	Heat	Low Income	Small High Winter Use	Med High Winter Use	Large High Winter Use	Small Low Winter Use	Med Low Winter Use	Large Load Factor <90%	Large Load Factor <110%	Large Load Factor >110%	Total	*Large Load Factor >90%*
	Rate Designation	RNSH R-1	RSH R-3	RLIAP R-4	SH G-41	MH G-42	LH G-43	SL G-51	ML G-52	LLL90 G-53	LLL110 G-54	LLG110 G-63		*LLG90 G-54 + G-63*
35	**First Iteration**													
36	Rates Limited by Cap - First Iteration	919,466	28,929,489	2,578,313	-	-	-	-	-	-	285,760	408,382	33,121,410	*694,142*
37	Subsidy Required from Other Classes	544,976	1,919,297	104,802	-	-	-	-	-	-	303,689	161,967	3,034,731	*465,655*
38	Marginal Cost of Rates Not Subject to Cap	-	-	-	6,945,018	8,123,382	1,369,370	960,983	1,119,561	936,967	-	-	19,455,281	-
39	Allocation of Subsidies to Uncapped Classes	-	-	-	1,083,318	1,267,125	213,601	149,899	174,635	146,153	-	-	3,034,731	-
40	First Iteration -Revised Revenue Targets	919,466	28,929,489	2,578,313	8,028,336	9,390,507	1,582,971	1,110,881	1,294,195	1,083,120	285,760	408,382	55,611,421	*694,142*
41														
42	**Second Iteration (N/A)**	**ITERATIONS NOT REQUIRED**												
43	Rates Limited by Cap - Second Iteration	919,466	28,929,489	2,578,313	-	-	-	-	-	-	285,760	408,382	33,121,410	*694,142*
44	Subsidy Required from Other Classes	-	-	-	-	-	-	-	-	-	-	-	0	-
45	Marginal Cost of Rates Not Subject to Cap	-	-	-	8,028,336	9,390,507	1,582,971	1,110,881	1,294,195	1,083,120	-	-	22,490,011	-
46	Allocation of Subsidies to Uncapped Classes	-	-	-	-	-	-	-	-	-	-	-	0	-
47	Second Iteration -Revised Revenue Targets	919,466	28,929,489	2,578,313	8,028,336	9,390,507	1,582,971	1,110,881	1,294,195	1,083,120	285,760	408,382	55,611,421	*694,142*
48														
49	**Third Iteration (N/A)**													
50	Rates Limited by Cap - Third Iteration	919,466	28,929,489	2,578,313	-	-	-	-	-	-	285,760	408,382	33,121,410	*694,142*
51	Subsidy Required from Other Classes	-	-	-	-	-	-	-	-	-	-	-	0	-
52	Marginal Cost of Rates Not Subject to Cap	-	-	-	8,028,336	9,390,507	1,582,971	1,110,881	1,294,195	1,083,120	-	-	22,490,011	-
53	Allocation of Subsidies to Uncapped Classes	-	-	-	-	-	-	-	-	-	-	-	0	-
54	Third Iteration -Revised Revenue Targets	919,466	28,929,489	2,578,313	8,028,336	9,390,507	1,582,971	1,110,881	1,294,195	1,083,120	285,760	408,382	55,611,421	*694,142*
55														
56	**Eliminate Decreases (N/A)**													
57	Eliminate Decreases													
58	Inrease Over Present Rates after Third Iteration	236,176	6,469,354	576,575	909,952	1,377,258	337,733	26,490	186,698	139,212	63,903	91,324	10,414,675	*155,227*
59	Percent Increase	34.56%	28.80%	28.80%	12.78%	17.19%	27.12%	2.44%	16.86%	14.75%	28.80%	28.80%	23.04%	*28.80%*
60	Classes With Dereases	-	-	-	-	-	-	-	-	-	-	-	0	-
61	Classes With Increases Less than Cap	-	-	-	8,028,336	9,390,507	1,582,971	1,110,881	1,294,195	1,083,120	-	-	22,490,011	-
62	Allocation of Decreases	-	-	-	-	-	-	-	-	-	-	-	0	-
63														
64	**Final Revenue Targets**													
65	Final Revenue Target	**919,466**	**28,929,489**	**2,578,313**	**8,028,336**	**9,390,507**	**1,582,971**	**1,110,881**	**1,294,195**	**1,083,120**	**285,760**	**408,382**	**55,611,421**	***694,142***
66	Inrease Over Present Rates after Third Iteration	236,176	6,469,354	576,575	909,952	1,377,258	337,733	26,490	186,698	139,212	63,903	91,324	10,414,675	*155,227*
67	Percent Increase	34.56%	28.80%	28.80%	12.78%	17.19%	27.12%	2.44%	16.86%	14.75%	28.80%	28.80%	23.04%	*28.80%*

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National Grid NH
Rate Design
Rate Design Calculations

Line No.	Description	Non-Heat	Heat	Low Income	Small High Winter Use	Med High Winter Use	Large High Winter Use	Small Low Winter Use	Med Low Winter Use	Large Load Factor <90%	Large Load Factor <110%	Large Load Factor >110%	Total	*Large Load Factor >90%*
	Rate Designation	**RNSH R-1**	**RSH R-3**	**RLIAP R-4**	**SH G-41**	**MH G-42**	**LH G-43**	**SL G-51**	**ML G-52**	**LLL90 G-53**	**LLL110 G-54**	**LLG110 G-63**		***LLG90 G-54 + G-63***
1	**Rate Design Parameters**													
2	Rate Cap on Rate Customer Charge	15%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
3	Revenue Targets	919,466	28,929,489	2,578,313	8,028,336	9,390,507	1,582,971	1,110,881	1,294,195	1,083,120	285,760	408,382	55,611,421	*694,142*
4														
5	**Equivalent Present Rates - No R-4 Discount - Dry Therms**													
6	Headblock Size													
7	Winter	10	100	100	100	1,000	0	100	1,000	0	0	0		
8	Summer	10	20	20	20	400	0	100	1,000	0	0	0		
9	Customer Charge	$ 9.77	$ 14.03	$ 14.03	$ 35.08	$ 100.24	$ 421.01	$ 35.08	$ 100.24	$ 431.03	$ 431.03	$ 431.03		*$ 431.03*
10	Current Winter Head Block Rate	$ 0.15070	$ 0.24670	$ 0.24670	$ 0.29740	$ 0.26420	$ 0.15910	$ 0.19280	$ 0.15050	$ 0.10870	$ 0.03550	$ 0.03550		
11	Current WinterTail Block Rate	$ 0.15070	$ 0.18590	$ 0.18590	$ 0.19340	$ 0.17450	$ 0.15910	$ 0.12450	$ 0.10210	$ 0.10870	$ 0.03550	$ 0.03550		
12	Current Summer Head Block Rate	$ 0.15070	$ 0.24670	$ 0.24670	$ 0.29740	$ 0.26420	$ 0.07280	$ 0.19280	$ 0.11060	$ 0.05200	$ 0.01920	$ 0.01920		
13	Current SummerTail Block Rate	$ 0.15070	$ 0.18590	$ 0.18590	$ 0.19340	$ 0.17450	$ 0.07280	$ 0.12450	$ 0.06370	$ 0.05200	$ 0.01920	$ 0.01920		
14														
15	**Billing Determinants (Dry)**													
16	Number of Annual Bills - Sales & Delivery Svc	53,789	766,770	66,691	90,357	17,805	481	15,695	3,711	423	64	182	1,015,969	*246*
17	Winter	26,322	380,396	34,456	45,202	8,837	244	7,714	1,838	207	35	89	505,339	*123*
18	Summer	27,468	386,374	32,235	45,156	8,968	236	7,981	1,872	216	30	93	510,629	*123*
19	Total Annual Therms - Sales & Delivery Svc	1,046,902	51,659,668	4,679,981	18,220,666	30,337,794	7,565,321	3,744,752	6,674,862	8,913,180	7,217,618	8,711,146	148,771,890	*15,928,764*
20	Winter	694,780	41,997,131	3,909,726	15,717,608	24,799,619	5,702,562	2,454,019	4,155,286	5,254,414	3,411,445	4,382,964	112,479,555	*7,794,410*
21	Summer	352,122	9,662,537	770,255	2,503,058	5,538,175	1,862,758	1,290,733	2,519,576	3,658,766	3,806,172	4,328,182	36,292,334	*8,134,354*
22	First Block Therms													
23	Winter	237,862	28,839,430	2,833,378	3,655,916	8,278,113	5,702,562	575,467	1,710,731	5,254,414	3,411,445	4,382,964	64,882,283	*7,794,410*
24	Summer	199,301	5,680,605	391,675	428,523	2,139,951	1,862,758	413,938	1,449,512	3,658,766	3,806,172	4,328,182	24,359,384	*8,134,354*
25	Second Block Therms													
26	Winter	456,918	13,157,701	1,076,347	12,061,693	16,521,506	0	1,878,551	2,444,555	0	0	(0)	47,597,272	*(0)*
27	Summer	152,821	3,981,931	378,580	2,074,534	3,398,224	0	876,795	1,070,064	0	(0)	(0)	11,932,950	*(0)*
28														

National Grid NH
Rate Design
Rate Design Calculations

Line No.	Description	Non-Heat	Heat	Low Income	Small High Winter Use	Med High Winter Use	Large High Winter Use	Small Low Winter Use	Med Low Winter Use	Large Load Factor <90%	Large Load Factor <110%	Large Load Factor >110%	Total	*Large Load Factor >90%*
	Rate Designation	**RNSH R-1**	**RSH R-3**	**RLIAP R-4**	**SH G-41**	**MH G-42**	**LH G-43**	**SL G-51**	**ML G-52**	**LLL90 G-53**	**LLL110 G-54**	**LLG110 G-63**		***LLG90 G-54 + G-63***
29	**Pure Marginal Cost Based Rates**													
30	Marginal Facilities Charge per Month - Fixed	$27.23	$40.23	$40.23	$76.86	$456.23	$2,849.10	$61.23	$301.71	$2,212.96	$9,181.43	$3,137.23		
31														
32	**Test Year Revenues - No R-4 Discount**													
33	Current Rate Net Revenues - Total	$683,291	$22,460,134	$2,001,738	$7,118,384	$8,013,249	$1,245,238	$1,084,392	$1,107,497	$943,909	$221,857	$317,058	$45,196,746	*538,915*
34	Customer	$525,522	$10,757,784	$935,339	$3,169,726	$1,784,803	$202,351	$550,593	$371,964	$182,498	$27,672	$78,361	$18,586,615	*106,033*
35	Winter	$104,703	$9,560,704	$899,337	$3,420,001	$5,070,080	$907,278	$344,830	$507,054	$571,155	$121,106	$155,595	$21,661,843	*276,702*
36	Summer	$53,065	$2,141,646	$167,062	$528,658	$1,158,365	$135,609	$188,968	$228,479	$190,256	$73,079	$83,101	$4,948,287	*156,180*
37	Target Revenues	919,466	28,929,489	2,578,313	8,028,336	9,390,507	1,582,971	1,110,881	1,294,195	1,083,120	285,760	408,382	55,611,421	*694,142*
38	% Increase	34.56%	28.80%	28.80%	12.78%	17.19%	27.12%	2.44%	16.86%	14.75%	28.80%	28.80%	23.04%	*28.80%*
39														
40	**Customer Charge Calculation**				1.23	1.23	1.23		1.23	1.23	1.23	1.23		
41	Capped Increase to Current Customer Charge	$11.24	$21.05	$21.05	$52.62	$150.36	$631.52	$52.62	$150.36	$646.55	$646.55	$646.55		$646.55
42	Marginal Customer Cost	$24.42	$24.36	$24.36	$28.30	$79.52	$101.16	$28.10	$80.73	$101.16	$255.36	$255.36		*$255.36*
43	Trial Customer Charge, Rounded	$11.25	$21.00	$21.00	$43.00	$120.00	$515.00	$36.50	$120.00	$530.00	$530.00	$530.00		*$430.00*
44	Customer Revenue	$605,131	$16,102,171	$1,400,508	$3,885,354	$2,136,636	$247,526	$572,881	$445,288	$224,402	$34,026	$96,354	$25,750,277	*$105,780*
45												530		
46	**Seasonal Therm Charges**													
47	Revenue Required from Therm Rates	$314,336	$12,827,317	$1,177,804	$4,142,982	$7,253,871	$1,335,445	$538,001	$848,907	$858,718	$251,734	$312,028	$29,861,144	*$588,362*
48	Revenues Produced by Current Therm Rates	$157,768	$11,702,350	$1,066,398	$3,948,658	$6,228,445	$1,042,886	$533,798	$735,533	$761,411	$194,185	$238,696	$26,610,130	*$432,881*
49	Percent Increase to Therm Rates Required	99.24%	9.61%	10.45%	4.92%	16.46%	28.05%	0.79%	15.41%	12.78%	29.64%	30.72%	12.22%	*35.92%*
50														
51	**Pro Rata Adjustment to Present Rates**													
52	Current Winter Head Block Rate	$ 0.30025	$ 0.27042	$ 0.27247	$ 0.31204	$ 0.30770	$ 0.20373	$ 0.19432	$ 0.17370	$ 0.12259	$ 0.04602	$ 0.04641		*$0.0462*
53	Current WinterTail Block Rate	$ 0.30025	$ 0.20377	$ 0.20532	$ 0.20292	$ 0.20323	$ 0.20373	$ 0.12548	$ 0.11784	$ 0.12259	$ 0.04602	$ 0.04641		*$0.0462*
54	Current Summer Head Block Rate	$ 0.30025	$ 0.27042	$ 0.27247	$ 0.31204	$ 0.30770	$ 0.09322	$ 0.19432	$ 0.12765	$ 0.05865	$ 0.02489	$ 0.02510		*$0.0250*
55	Current SummerTail Block Rate	$ 0.30025	$ 0.20377	$ 0.20532	$ 0.20292	$ 0.20323	$ 0.09322	$ 0.12548	$ 0.07352	$ 0.05865	$ 0.02489	$ 0.02510		*$0.0250*
56														

National Grid NH
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Line No.	Description	Non-Heat	Heat	Low Income	Small High Winter Use	Med High Winter Use	Large High Winter Use	Small Low Winter Use	Med Low Winter Use	Large Load Factor <90%	Large Load Factor <110%	Large Load Factor >110%	Total	*Large Load Factor >90%*
	Rate Designation	RNSH R-1	RSH R-3	RLIAP R-4	SH G-41	MH G-42	LH G-43	SL G-51	ML G-52	LLL90 G-53	LLL110 G-54	LLG110 G-63		*LLG90 G-54 + G-63*
57	**Proposed Rate Design - Ignoring R-4 Discount**													
58	Customer Charge	$11.25	$21.00	$21.00	$43.00	$120.00	$515.00	$36.50	$120.00	$530.00	$530.00	$530.00		*$530.00*
59	Winter Volumetric Rates													
60	Headblock Rate	$0.3003	$0.2706	$0.2706	$0.3120	$0.3077	$0.2037	$0.1943	$0.1737	$0.1226	$0.0460	$0.0464		*$0.0462*
61	Tailblock Rate	$0.3003	$0.2039	$0.2039	$0.2029	$0.2032	$0.2037	$0.1255	$0.1178	$0.1226	$0.0460	$0.0464		*$0.0462*
62	Summer Volumetric Rates													
63	Headblock Rate	$0.3003	$0.2706	$0.2706	$0.3120	$0.3077	$0.0932	$0.1943	$0.1276	$0.0586	$0.0249	$0.0251		*$0.0250*
64	Tailblock Rate	$0.3003	$0.2039	$0.2039	$0.2029	$0.2032	$0.0932	$0.1255	$0.0735	$0.0586	$0.0249	$0.0251		*$0.0250*
65														
66	**Proposed Revenues - Ignoring R-4 Discount**													
67	Customer Charge	$605,131	$16,102,171	$1,400,508	$3,885,354	$2,136,636	$247,526	$572,881	$445,288	$224,402	$34,026	$96,354	$25,750,277	*$130,380*
68	Winter Volumetric Rates													
69	Headblock Rate	$71,430	$7,803,950	$766,712	$1,140,646	$2,547,175	$1,161,612	$111,813	$297,154	$644,191	$156,926	$203,370	$14,904,979	*$360,102*
70	Tailblock Rate	$137,213	$2,682,855	$219,467	$2,447,317	$3,357,170	$0	$235,758	$287,969	$0	$0	($0)	$9,367,749	*($0)*
71	Summer Volumetric Rates													
72	Headblock Rate	$59,850	$1,537,172	$105,987	$133,699	$658,463	$173,609	$80,428	$184,958	$214,404	$94,774	$108,637	$3,351,981	*$203,359*
73	Tailblock Rate	$45,892	$811,916	$77,193	$420,923	$690,519	$0	$110,038	$78,650	$0	($0)	($0)	$2,235,130	*($0)*
74	Total	$919,515	$28,938,064	$2,569,867	$8,027,939	$9,389,963	$1,582,747	$1,110,918	$1,294,018	$1,082,997	$285,726	$408,361	$55,610,117	*$693,841*
75	Variance from Target (Due to Rounding)	$49	$8,575	($8,445)	($397)	($543)	($224)	$37	($177)	($123)	($34)	($21)	($1,304)	*($301)*
76														
77	R-4 Discount, %			60%										
78	**Proposed Rate Design - Including R-4 Discount**													
79	Customer Charge	$11.25	$21.00	$8.40	$43.00	$120.00	$515.00	$36.50	$120.00	$530.00	$530.00	$530.00		*$530.00*
80	Winter Volumetric Rates													
81	Headblock Rate	$0.3003	$0.2706	$0.1082	$0.3120	$0.3077	$0.2037	$0.1943	$0.1737	$0.1226	$0.0460	$0.0464		*$0.0462*
82	Tailblock Rate	$0.3003	$0.2039	$0.0816	$0.2029	$0.2032	$0.2037	$0.1255	$0.1178	$0.1226	$0.0460	$0.0464		*$0.0462*
83	Summer Volumetric Rates													
84	Headblock Rate	$0.3003	$0.2706	$0.1082	$0.3120	$0.3077	$0.0932	$0.1943	$0.1276	$0.0586	$0.0249	$0.0251		*$0.0250*
85	Tailblock Rate	$0.3003	$0.2039	$0.0816	$0.2029	$0.2032	$0.0932	$0.1255	$0.0735	$0.0586	$0.0249	$0.0251		*$0.0250*
86														
87	**Proposed Revenues - Including R-4 Discount**													
88	Customer Charge	$605,131	$16,102,171	$560,203	$3,885,354	$2,136,636	$247,526	$572,881	$445,288	$224,402	$34,026	$96,354	$24,909,972	*$130,380*
89	Winter Volumetric Rates													
90	Headblock Rate	$71,430	$7,803,950	$306,572	$1,140,646	$2,547,175	$1,161,612	$111,813	$297,154	$644,191	$156,926	$203,370	$14,444,839	*$360,102*
91	Tailblock Rate	$137,213	$2,682,855	$87,830	$2,447,317	$3,357,170	$0	$235,758	$287,969	$0	$0	($0)	$9,236,112	*($0)*
92	Summer Volumetric Rates													
93	Headblock Rate	$59,850	$1,537,172	$42,379	$133,699	$658,463	$173,609	$80,428	$184,958	$214,404	$94,774	$108,637	$3,288,373	*$203,359*
94	Tailblock Rate	$45,892	$811,916	$30,892	$420,923	$690,519	$0	$110,038	$78,650	$0	($0)	($0)	$2,188,830	*($0)*
95	Total	$919,515	$28,938,064	$1,027,876	$8,027,939	$9,389,963	$1,582,747	$1,110,918	$1,294,018	$1,082,997	$285,726	$408,361	$54,068,126	*$693,841*

National Grid NH
Rate Design Filing
Summary of Proposed Rates

		RESIDENTIAL			C & I High Winter Use			C & I Low Winter Use					
Line No.	Description	Non-Heat	Heat	Low Income (Prior to Discount)	Small High Winter Use	Med High Winter Use	Large High Winter Use	Small Low Winter Use	Med Low Winter Use	Large Load Factor <90%	Large Load Factor <110%	Large Load Factor >110%	*Large Load Factor >110%*
		RNSH	RSH	RLIAP	SH	MH	LH	SL	ML	LLL90	LLL110	LLG110	*LLG90*
		R-1	R-3	R-4	G-41	G-42	G-43	G-51	G-52	G-53	G-54	G-63	*G-54+G-63*
	Eligibility												
1	Annual Usage, Therms	N/A	N/A	N/A	<=10,000	<=100,000	>100,000	<=10,000	<=100,000	>100,000	>100,000	>100,000	*>100,000*
2	Summer Usage, % of Annual	N/A	N/A	N/A	<=33%	<=33%	<=33%	>33%	>33%	>33%	>33%	>33%	*>33%*
3	Load Factor, Avg Use/Dec - Feb Avg Use	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<90%	<110%	>=110%	*>=90%*
4													
5	**Customer Charge, $/Month**	$11.25	$21.00	$8.40	$43.00	$120.00	$515.00	$36.50	$120.00	$530.00	$530.00	$530.00	*$530.00*
6													
7	**Winter Rate**												
8	Head Block Size	N/A	100	100	100	1,000	N/A	100	1,000	N/A	N/A	N/A	*N/A*
9	Head Block Rate	$ 0.3003	$ 0.2706	$ 0.1082	$ 0.3120	$ 0.3077	$ 0.2037	$ 0.1943	$ 0.1737	$ 0.1226	$ 0.0460	$ 0.0464	*$ 0.0462*
10	Tail Block Rate	$ 0.3003	$ 0.2039	$ 0.0816	$ 0.2029	$ 0.2032	$ 0.2037	$ 0.1255	$ 0.1178	$ 0.1226	$ 0.0460	$ 0.0464	*$ 0.0462*
11													
12	**Summer Rate**												
13	Head Block Size	N/A	20	20	20	400	N/A	100	1,000	N/A	N/A	N/A	*N/A*
14	Head Block Rate	$ 0.3003	$ 0.2706	$ 0.1082	$ 0.3120	$ 0.3077	$ 0.0932	$ 0.1943	$ 0.1276	$ 0.0586	$ 0.0249	$ 0.0251	*$ 0.0250*
15	Tail Block Rate	$ 0.3003	$ 0.2039	$ 0.0816	$ 0.2029	$ 0.2032	$ 0.0932	$ 0.1255	$ 0.0735	$ 0.0586	$ 0.0249	$ 0.0251	*$ 0.0250*

National Grid NH
Rate Design Filing
Total Revenue Comparison

Attachment PMN-RD-4-3
National Grid NH
DG 10-017

Line No.	Description		Non-Heat	Heat	Low Income (After Discount)	Small High Winter Use	Med High Winter Use	Large High Winter Use	Small Low Winter Use	Med Low Winter Use	Large Load Factor <90%	Large Load Factor <110%	Large Load Factor >110%	Total	*Large Load Factor >110%*
	Rate Designation		RNSH	RSH	RLIAP	SH	MH	LH	SL	ML	LLL90	LLL110	LLG110		*LLG90*
			R-1	R-3	R-4	G-41	G-42	G-43	G-51	G-52	G-53	G-54	G-63		*G-54 + G-63*
	PRESNT RATES														
1	Cost of Gas Clause - Equivalent Dry Therm Rates	{1}{2}													
2	Winter		$ 0.9369	$ 0.9369	$ 0.9369	$ 0.9371	$ 0.9371	$ 0.9371	$ 0.9364	$ 0.9364	$ 0.9364	$ 0.9364	$ 0.9364		*$ 0.9364*
3	Summer		$ 0.6196	$ 0.6196	$ 0.6196	$ 0.6201	$ 0.6201	$ 0.6201	$ 0.6180	$ 0.6180	$ 0.6180	$ 0.6180	$ 0.6180		*$ 0.6180*
4															
5	Local Distribution Adjustment Clause - Dry therms	{1}													
6	Winter (January, 2008)		$ 0.0410	$ 0.0404	$ 0.0404	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194		*$ 0.0194*
7	Summer (October, 2007)		$ 0.0410	$ 0.0404	$ 0.0404	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194		*$ 0.0194*
8															
9	Total Present Revenue														
10	Present Delivery Revenues	{3}	683,291	22,460,134	800,695	7,118,384	8,013,249	1,245,238	1,084,392	1,107,497	943,909	221,857	317,058	43,995,703	*538,915*
11	Delivery Adjustment (LDAC)		42,923	2,087,051	189,071	353,481	588,553	146,767	72,648	129,492	172,916	140,022	168,996	4,091,920	*309,018*
12	Supply Charges (COGC)	{4}	869,104	45,333,746	4,140,250	16,281,077	26,673,859	6,498,938	3,095,660	5,448,193	7,181,474	5,546,820	6,779,170	127,848,292	*12,325,991*
13	Total		1,595,318	69,880,931	5,130,016	23,752,943	35,275,661	7,890,943	4,252,700	6,685,182	8,298,298	5,908,699	7,265,224	175,935,915	*13,173,923*
14															
15															
16															
17	PROPOSED RATES														
18	Proposed Cost of Gas Clause - Equivalend Dry Therm Rates														
19	Winter	{2}	$ 0.9480	$ 0.9480	$ 0.9480	$ 0.9482	$ 0.9482	$ 0.9482	$ 0.9475	$ 0.9475	$ 0.9475	$ 0.9475	$ 0.9475		*$ 0.9475*
20	Summer		$ 0.6238	$ 0.6238	$ 0.6238	$ 0.6243	$ 0.6243	$ 0.6243	$ 0.6222	$ 0.6222	$ 0.6222	$ 0.6222	$ 0.6222		*$ 0.6222*
21															
22	Local Distribution Adjustment Clause - Dry therms	{1}													
23	Winter (January, 2008)		$ 0.0410	$ 0.0404	$ 0.0404	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194		*$ 0.0194*
24	Summer (October, 2007)		$ 0.0410	$ 0.0404	$ 0.0404	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194	$ 0.0194		*$ 0.0194*
25															
26	Total Proposed Revenue														
27	Proposeed Delivery Revenues	{5}	919,515	28,938,064	1,027,876	8,027,939	9,389,963	1,582,747	1,110,918	1,294,018	1,082,997	285,726	408,361	54,068,126	*693,841*
28	Delivery Adjustment (LDAC)		42,923	2,087,051	189,071	353,481	588,553	146,767	72,648	129,492	172,916	140,022	168,996	4,091,920	*309,018*
29	Supply Charges (COGC)	{4}	878,301	45,840,649	4,186,895	16,466,104	26,972,501	6,570,096	3,128,327	5,504,912	7,255,184	5,600,693	6,846,022	129,249,685	12,446,716
30	Total		$ 1,840,739	$ 76,865,764	$ 5,403,843	$ 24,847,524	$ 36,951,018	$ 8,299,611	$ 4,311,894	$ 6,928,422	$ 8,511,097	$ 6,026,442	$ 7,423,379	$ 187,409,732	*$ 13,449,574*
31															
32	Increase, %		15.38%	10.00%	5.34%	4.61%	4.75%	5.18%	1.39%	3.64%	2.56%	1.99%	2.18%	6.52%	*2.09%*

NOTES:
1 All rates reflect an adjustment to restate CGC and LDAC rates in terms of dry therms.
2 Indirect Gas cost in Current COG represent Bad Debt & Working Capital Factors from DG 00-063 and Production & Storage and Miscellaneous Gas costs from DG 06-121.
3 Source: Attachment PMN-RD-4-2 Page 1.
4 Imputes gas supply charges for all transportation customers
5 Source: Attachment PMN-RD-4-3 Page 5.

National Grid NH
Rate Design Filing
Revenue Proof

Line No.	Description	Residential			C&I High Winter Use			C&I Low Winter Use						*Combined*
		Non-Heat	Heat	Low Income (Prior to Discount)	Small High Winter Use	Med High Winter Use	Large High Winter Use	Small Low Winter Use	Med Low Winter Use	Large Load Factor <90%	Large Load Factor <110%	Large Load Factor >110%	Total	*Large Load Factor >90%*
	Rate Designation	RNSH	RSH	RLIAP	SH	MH	LH	SL	ML	LLL90	LLL110	LLG110		*LLG90*
		R-1	R-3	R-4	G-41	G-42	G-43	G-51	G-52	G-53	G-54	G-63		*G-54 + G-63*
1														
2	**Proposed Rates (Dry) - No R-4 Discount**													
3	Winter Head Block Size	10	100	100	100	1,000	0	100	1,000	0	0	0		-
4	Summer Head Block Size	10	20	20	20	400	0	100	1,000	0	0	0		-
5	Proposed Customer Charge	$11.25	$21.00	$21.00	$43.00	$120.00	$515.00	$36.50	$120.00	$530.00	$530.00	$530.00		*$860.00*
6	Proposed Winter Head Block Rate	$0.30030	$0.27060	$0.27060	$0.31200	$0.30770	$0.20370	$0.19430	$0.17370	$0.12260	$0.04600	$0.04640		*$0.02320*
7	Proposed WinterTail Block Rate	$0.30030	$0.20390	$0.20390	$0.20290	$0.20320	$0.20370	$0.12550	$0.11780	$0.12260	$0.04600	$0.04640		*$0.02320*
8	Proposed Summer Head Block Rate	$0.30030	$0.27060	$0.27060	$0.31200	$0.30770	$0.09320	$0.19430	$0.12760	$0.05860	$0.02490	$0.02510		*$0.03710*
9	Proposed SummerTail Block Rate	$0.30030	$0.20390	$0.20390	$0.20290	$0.20320	$0.09320	$0.12550	$0.07350	$0.05860	$0.02490	$0.02510		*$0.03710*
10														
11	**Total Sales and Transportation (Dry)**													
12	**Test Year Normal (After Weather Normalization)**													
13	Winter Bills	26,322	380,396	34,456	45,202	8,837	244	7,714	1,838	207	35	89	505,339	*123*
14	Summer Bills	27,468	386,374	32,235	45,156	8,968	236	7,981	1,872	216	30	93	510,629	*123*
15	Winter Sales, Therms	694,780	41,997,131	3,909,726	15,717,608	24,799,619	5,702,562	2,454,019	4,155,286	5,254,414	3,411,445	4,382,964	112,479,555	*7,794,410*
16	Summer Sales, Therms	352,122	9,662,537	770,255	2,503,058	5,538,175	1,862,758	1,290,733	2,519,576	3,658,766	3,806,172	4,328,182	36,292,334	*8,134,354*
17	Total Annual Sales	1,046,902	51,659,668	4,679,981	18,220,666	30,337,794	7,565,321	3,744,752	6,674,862	8,913,180	7,217,618	8,711,146	148,771,890	*15,928,764*
18	Winter Head Block Therms	237,862	28,839,430	2,833,378	3,655,916	8,278,113	-	575,467	1,710,731	-	-	-	46,130,897	*0*
19	Summer Head Block Therms	199,301	5,680,605	391,675	428,523	2,139,951	-	413,938	1,449,512	-	-	-	10,703,506	*0*
20														
21														
22	**Billed Revenue**													
23	Winter Customer Charge Revenue	296,118	7,988,314	723,566	1,943,667	1,060,492	125,814	281,565	220,620	109,710	18,303	47,117	12,815,286	*65,420*
24	Summer Customer Charge Revenue	309,013	8,113,858	676,942	1,941,687	1,076,144	121,712	291,316	224,668	114,692	15,723	49,237	12,934,991	*64,960*
25	Subtotal Customer Charge Revenue	605,131	16,102,171	1,400,508	3,885,354	2,136,636	247,526	572,881	445,288	224,402	34,026	96,354	25,750,277	*130,380*
26														
27	Winter Head Block Revenue	71,430	7,803,950	766,712	1,140,646	2,547,175	-	111,813	297,154	-	-	-	12,738,880	*0*
28	Tail Block Winter Therm Revenue	137,213	2,682,855	219,467	2,447,317	3,357,170	1,161,612	235,758	287,969	644,191	156,926	203,370	11,533,849	*360,296*
29	Subtotal Winter Therm Revenue	208,642	10,486,805	986,179	3,587,963	5,904,345	1,161,612	347,572	585,123	644,191	156,926	203,370	24,272,729	*360,296*
30														
31	Summer Head Block Revenue	59,850	1,537,172	105,987	133,699	658,463	-	80,428	184,958	-	-	-	2,760,557	*0*
32	Tail Block Summer Therm Revenue	45,892	811,916	77,193	420,923	690,519	173,609	110,038	78,650	214,404	94,774	108,637	2,826,554	*203,411*
33	Subtotal Summer Therm Revenues	105,742	2,349,088	183,180	554,622	1,348,982	173,609	190,466	263,607	214,404	94,774	108,637	5,587,111	*203,411*
34														
35	Total Annual Revenues	919,515	28,938,064	2,569,867	8,027,939	9,389,963	1,582,747	1,110,918	1,294,018	1,082,997	285,726	408,361	55,610,117	*694,087*
36														
37														
38	**Target Revenues**													
39	Total Target Base Revenue	919,466	28,929,489	2,578,313	8,028,336	9,390,507	1,582,971	1,110,881	1,294,195	1,083,120	285,760	408,382	55,611,421	*694,142*
40														
41														
42	**Variance**													
43	Variance, $s	49	8,575	(8,445)	(397)	(543)	(224)	37	(177)	(123)	(34)	(21)	(1,304)	*(55)*
44	Variance, %	0.0%	0.0%	-0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	*0.0%*

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
Residential Non-Heating
Rate R-1

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$9.77	NA	$11.25	NA	$1.48	15.15%	$9.77	NA	$11.25	NA	$1.48	15.15%
2	10.07	5.036	11.85	5.925	1.78	17.67%	12.03	6.014	13.83	6.914	1.80	14.98%
4	10.37	2.593	12.45	3.113	2.08	20.04%	14.28	3.571	16.41	4.102	2.12	14.86%
6	10.67	1.779	13.05	2.175	2.38	22.27%	16.54	2.757	18.99	3.164	2.44	14.78%
8	10.98	1.372	13.65	1.707	2.68	24.39%	18.80	2.350	21.56	2.696	2.77	14.71%
10	11.28	1.128	14.25	1.425	2.98	26.39%	21.06	2.106	24.14	2.414	3.09	14.66%
15	12.03	0.802	15.75	1.050	3.72	30.95%	26.70	1.780	30.59	2.039	3.89	14.57%
20	12.78	0.639	17.26	0.863	4.47	34.98%	32.34	1.617	37.04	1.852	4.69	14.51%
25	13.54	0.542	18.76	0.750	5.22	38.56%	37.99	1.519	43.48	1.739	5.50	14.47%
30	14.29	0.476	20.26	0.675	5.97	41.76%	43.63	1.454	49.93	1.664	6.30	14.44%
35	15.04	0.430	21.76	0.622	6.72	44.64%	49.27	1.408	56.38	1.611	7.10	14.42%
40	15.80	0.395	23.26	0.582	7.46	47.25%	54.91	1.373	62.82	1.571	7.91	14.40%
45	16.55	0.368	24.76	0.550	8.21	49.61%	60.56	1.346	69.27	1.539	8.71	14.39%
50	17.31	0.346	26.27	0.525	8.96	51.78%	66.20	1.324	75.72	1.514	9.52	14.37%
60	18.81	0.314	29.27	0.488	10.46	55.58%	77.49	1.291	88.61	1.477	11.12	14.35%
70	20.32	0.290	32.27	0.461	11.95	58.82%	88.77	1.268	101.50	1.450	12.73	14.34%
80	21.83	0.273	35.27	0.441	13.45	61.61%	100.06	1.251	114.39	1.430	14.34	14.33%
90	23.33	0.259	38.28	0.425	14.94	64.05%	111.34	1.237	127.29	1.414	15.94	14.32%
100	24.84	0.248	41.28	0.413	16.44	66.18%	122.63	1.226	140.18	1.402	17.55	14.31%
200	39.91	0.200	71.31	0.357	31.40	78.68%	235.49	1.177	269.11	1.346	33.62	14.28%
Estimated Bill Percentile - 25%												
8	10.98	1.372	13.65	1.707	2.68	24.39%	18.80	2.350	21.56	2.696	2.77	14.71%
Bill Percentile - 50%												
20	12.78	0.639	17.26	0.863	4.47	34.98%	32.34	1.617	37.04	1.852	4.69	14.51%
Estimated Bill Percentile - 75%												
30	14.29	0.476	20.26	0.675	5.97	41.76%	43.63	1.454	49.93	1.664	6.30	14.44%

Equivalent DRY Therm Present Rate R-1

	Block therm	Rate	
Customer Charge	-	$9.77	/Customer
First	10	$0.1507	/therm
Over	10	$0.1507	/therm
TOTAL CGC & LDAC		$0.9779	/therm
CGC		$0.9369	
LDAC		$0.0410	

Proposed Rate R-1

	Block therm	Rate	
Customer Charge	-	$11.25	/Customer
First	10	$0.3003	/therm
Over	10	$0.3003	/therm
TOTAL CGC & LDAC		$0.9890	/therm
CGC		$0.9480	/therm
LDAC		$0.0410	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
Residential Non-Heating
Rate R-1

Sales	Present Rate		Proposed Rate		Difference		Present Rate With CGC Revenues		Proposed Rate With CGC Revenues		Difference With CGC Revenues	
therm	Base Rate	Revenues Per therm	Base Rate	Revenues Per therm	Revenues Base Rate	Percent Base Rate	Rate	Revenues Per therm	Rate	Revenues Per therm	Revenues Rate	Percent Rate
0	$9.77	NA	$11.25	NA	$1.48	15.15%	$9.77	NA	$11.25	NA	$1.48	15.15%
2	10.07	5.036	11.85	5.925	1.78	17.67%	11.39	5.696	13.18	6.590	1.79	15.69%
4	10.37	2.593	12.45	3.113	2.08	20.04%	13.02	3.254	15.11	3.778	2.10	16.10%
6	10.67	1.779	13.05	2.175	2.38	22.27%	14.64	2.440	17.04	2.840	2.40	16.42%
8	10.98	1.372	13.65	1.707	2.68	24.39%	16.26	2.033	18.97	2.371	2.71	16.67%
10	11.28	1.128	14.25	1.425	2.98	26.39%	17.88	1.788	20.90	2.090	3.02	16.88%
15	12.03	0.802	15.75	1.050	3.72	30.95%	21.94	1.463	25.73	1.715	3.79	17.26%
20	12.78	0.639	17.26	0.863	4.47	34.98%	26.00	1.300	30.55	1.528	4.56	17.53%
25	13.54	0.542	18.76	0.750	5.22	38.56%	30.05	1.202	35.38	1.415	5.33	17.72%
30	14.29	0.476	20.26	0.675	5.97	41.76%	34.11	1.137	40.20	1.340	6.09	17.87%
35	15.04	0.430	21.76	0.622	6.72	44.64%	38.16	1.090	45.03	1.287	6.86	17.99%
40	15.80	0.395	23.26	0.582	7.46	47.25%	42.22	1.056	49.85	1.246	7.63	18.08%
45	16.55	0.368	24.76	0.550	8.21	49.61%	46.28	1.028	54.68	1.215	8.40	18.16%
50	17.31	0.346	26.27	0.525	8.96	51.78%	50.33	1.007	59.51	1.190	9.17	18.22%
60	18.81	0.314	29.27	0.488	10.46	55.58%	58.45	0.974	69.16	1.153	10.71	18.32%
70	20.32	0.290	32.27	0.461	11.95	58.82%	66.56	0.951	78.81	1.126	12.25	18.40%
80	21.83	0.273	35.27	0.441	13.45	61.61%	74.67	0.933	88.46	1.106	13.79	18.46%
90	23.33	0.259	38.28	0.425	14.94	64.05%	82.78	0.920	98.11	1.090	15.32	18.51%
100	24.84	0.248	41.28	0.413	16.44	66.18%	90.90	0.909	107.76	1.078	16.86	18.55%
200	39.91	0.200	71.31	0.357	31.40	78.68%	172.02	0.860	204.27	1.021	32.25	18.74%
Estimated Bill Percentile - 25%												
5	10.52	2.105	12.75	2.550	2.23	21.17%	13.83	2.765	16.08	3.215	2.25	16.27%
Bill Percentile - 50%												
11	11.43	1.039	14.55	1.323	3.13	27.35%	18.69	1.699	21.87	1.988	3.17	16.97%
Estimated Bill Percentile - 75%												
20	12.78	0.639	17.26	0.863	4.47	34.98%	26.00	1.300	30.55	1.528	4.56	17.53%

Equivalent DRY Therm Present Rate R-1

	Block therm	Rate	
Customer Charge	-	$9.77	/Customer
First	10	$0.1507	/therm
Over	10	$0.1507	/therm
TOTAL CGC & LDAC		$0.6606	/therm
CGC		$0.6196	
LDAC		$0.0410	

Proposed Rate R-1

	Block therm	Rate	
Customer Charge	-	$11.25	/Customer
First	10	$0.3003	/therm
Over	10	$0.3003	/therm
TOTAL CGC & LDAC		$0.6648	/therm
CGC		$0.6238	/therm
LDAC		$0.0410	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
Residential Heating
Rate R-3

	Present Rate		Proposed Rate		Difference Revenues	Difference Percent	Present Rate With CGC Revenues		Proposed Rate With CGC Revenues		Difference With CGC Revenues	
Sales therm	Base Rate	Revenues Per therm	Base Rate	Revenues Per therm	Base Rate	Base Rate	Rate	Revenues Per therm	Rate	Revenues Per therm	Revenues Rate	Percent Rate
0	$14.03	NA	$21.00	NA	$6.97	49.68%	$14.03	NA	$21.00	NA	$6.97	49.68%
10	16.50	1.650	23.71	2.371	7.21	43.70%	26.27	2.627	33.59	3.359	7.32	27.86%
25	20.20	0.808	27.77	1.111	7.57	37.47%	44.63	1.785	52.48	2.099	7.85	17.58%
50	26.37	0.527	34.53	0.691	8.17	30.97%	75.23	1.505	83.95	1.679	8.72	11.59%
75	32.53	0.434	41.30	0.551	8.76	26.93%	105.83	1.411	115.43	1.539	9.60	9.07%
100	38.70	0.387	48.06	0.481	9.36	24.19%	136.43	1.364	146.90	1.469	10.47	7.67%
125	43.35	0.347	53.16	0.425	9.81	22.63%	165.51	1.324	176.71	1.414	11.20	6.77%
150	48.00	0.320	58.26	0.388	10.26	21.38%	194.59	1.297	206.52	1.377	11.93	6.13%
175	52.64	0.301	63.35	0.362	10.71	20.34%	223.67	1.278	236.32	1.350	12.65	5.66%
200	57.29	0.286	68.45	0.342	11.16	19.48%	252.75	1.264	266.13	1.331	13.38	5.29%
225	61.94	0.275	73.55	0.327	11.61	18.74%	281.83	1.253	295.94	1.315	14.11	5.01%
250	66.59	0.266	78.65	0.315	12.06	18.11%	310.91	1.244	325.75	1.303	14.84	4.77%
275	71.23	0.259	83.74	0.305	12.51	17.56%	339.99	1.236	355.55	1.293	15.56	4.58%
300	75.88	0.253	88.84	0.296	12.96	17.08%	369.07	1.230	385.36	1.285	16.29	4.41%
350	85.18	0.243	99.04	0.283	13.86	16.27%	427.23	1.221	444.98	1.271	17.75	4.15%
400	94.47	0.236	109.23	0.273	14.76	15.62%	485.39	1.213	504.59	1.261	19.20	3.96%
450	103.77	0.231	119.43	0.265	15.66	15.09%	543.55	1.208	564.21	1.254	20.66	3.80%
500	113.06	0.226	129.62	0.259	16.56	14.65%	601.71	1.203	623.82	1.248	22.11	3.67%
750	159.54	0.213	180.60	0.241	21.06	13.20%	892.51	1.190	921.90	1.229	29.39	3.29%
1,000	206.01	0.206	231.57	0.232	25.56	12.41%	1,183.31	1.183	1,219.97	1.220	36.66	3.10%
Estimated Bill Percentile - 25%												
60	28.83	0.481	37.24	0.621	8.40	29.15%	87.47	1.458	96.54	1.609	9.07	10.37%
Bill Percentile - 50%												
100	38.70	0.387	48.06	0.481	9.36	24.19%	136.43	1.364	146.90	1.469	10.47	7.67%
Estimated Bill Percentile - 75%												
175	52.64	0.301	63.35	0.362	10.71	20.34%	223.67	1.278	236.32	1.350	12.65	5.66%

Equivalent DRY Therm Present Rate	Block therm	R-3 Rate	
Customer Charge	-	$14.03	/Customer
First	100	$0.2467	/therm
Over	100	$0.1859	/therm
TOTAL CGC & LDAC		$0.9773	/therm
CGC		$0.9369	
LDAC		$0.0404	

Proposed Rate	Block therm	R-3 Rate	
Customer Charge	-	$21.00	/Customer
First	100	$0.2706	/therm
Over	100	$0.2039	/therm
TOTAL CGC & LDAC		$0.9884	/therm
CGC		$0.9480	/therm
LDAC		$0.0404	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
Residential Heating
Rate R-3

	Present Rate		Proposed Rate		Difference		Present Rate With CGC Revenues		Proposed Rate With CGC Revenues		Difference With CGC Revenues	
Sales therm	Base Rate	Revenues Per therm	Base Rate	Revenues Per therm	Revenues Base Rate	Percent Base Rate	Rate	Revenues Per therm	Rate	Revenues Per therm	Revenues Rate	Percent Rate
0	$14.03	NA	$21.00	NA	$6.97	49.68%	$14.03	NA	$21.00	NA	$6.97	49.68%
10	16.50	1.650	23.71	2.371	7.21	43.70%	23.10	2.310	30.35	3.035	7.25	31.40%
25	19.89	0.796	27.43	1.097	7.54	37.89%	36.39	1.456	44.04	1.761	7.64	21.00%
50	24.54	0.491	32.53	0.651	7.99	32.55%	57.54	1.151	65.74	1.315	8.20	14.25%
75	29.19	0.389	37.63	0.502	8.44	28.91%	78.69	1.049	87.44	1.166	8.76	11.13%
100	33.84	0.338	42.72	0.427	8.89	26.27%	99.83	0.998	109.14	1.091	9.31	9.33%
125	38.48	0.308	47.82	0.383	9.34	24.26%	120.98	0.968	130.85	1.047	9.87	8.16%
150	43.13	0.288	52.92	0.353	9.79	22.69%	142.13	0.948	152.55	1.017	10.42	7.33%
175	47.78	0.273	58.02	0.332	10.24	21.43%	163.27	0.933	174.25	0.996	10.98	6.72%
200	52.43	0.262	63.11	0.316	10.69	20.39%	184.42	0.922	195.95	0.980	11.53	6.25%
225	57.07	0.254	68.21	0.303	11.14	19.52%	205.57	0.914	217.66	0.967	12.09	5.88%
250	61.72	0.247	73.31	0.293	11.59	18.77%	226.71	0.907	239.36	0.957	12.65	5.58%
275	66.37	0.241	78.41	0.285	12.04	18.14%	247.86	0.901	261.06	0.949	13.20	5.33%
300	71.02	0.237	83.50	0.278	12.49	17.58%	269.01	0.897	282.76	0.943	13.76	5.11%
350	80.31	0.229	93.70	0.268	13.39	16.67%	311.30	0.889	326.17	0.932	14.87	4.78%
400	89.61	0.224	103.89	0.260	14.29	15.95%	353.59	0.884	369.57	0.924	15.98	4.52%
450	98.90	0.220	114.09	0.254	15.19	15.36%	395.89	0.880	412.98	0.918	17.09	4.32%
500	108.20	0.216	124.28	0.249	16.09	14.87%	438.18	0.876	456.38	0.913	18.20	4.15%
750	154.67	0.206	175.26	0.234	20.59	13.31%	649.65	0.866	673.41	0.898	23.76	3.66%
1,000	201.15	0.201	226.23	0.226	25.09	12.47%	861.12	0.861	890.43	0.890	29.32	3.40%
Estimated Bill Percentile - 25%												
12	16.99	1.416	24.25	2.021	7.26	42.71%	24.91	2.076	32.22	2.685	7.31	29.34%
Bill Percentile - 50%												
20	18.96	0.948	26.41	1.321	7.45	39.27%	32.16	1.608	39.70	1.985	7.53	23.42%
Estimated Bill Percentile - 75%												
30	20.82	0.694	28.45	0.948	7.63	36.63%	40.62	1.354	48.38	1.613	7.75	19.09%

Equivalent DRY Therm Present Rate	R-3		
	Block therm	Rate	
Customer Charge	-	$14.03	/Customer
First	20	$0.2467	/therm
Over	20	$0.1859	/therm
TOTAL CGC & LDAC		$0.6600	/therm
CGC		$0.6196	
LDAC		$0.0404	

Proposed Rate	R-3		
	Block therm	Rate	
Customer Charge	-	$21.00	/Customer
First	20	$0.2706	/therm
Over	20	$0.2039	/therm
TOTAL CGC & LDAC		$0.6642	/therm
CGC		$0.6238	/therm
LDAC		$0.0404	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
Low Income Residential Heating
Rate R-4

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$5.61	NA	$8.40	NA	$2.79	49.73%	$5.61	NA	$8.40	NA	$2.79	49.73%
10	6.60	0.660	9.48	0.948	2.89	43.73%	16.37	1.637	19.37	1.937	3.00	18.30%
25	8.08	0.323	11.11	0.444	3.03	37.48%	32.51	1.300	35.82	1.433	3.31	10.17%
50	10.55	0.211	13.81	0.276	3.27	30.96%	59.41	1.188	63.23	1.265	3.82	6.43%
75	13.01	0.174	16.52	0.220	3.50	26.92%	86.31	1.151	90.65	1.209	4.33	5.02%
100	15.48	0.155	19.22	0.192	3.74	24.16%	113.21	1.132	118.06	1.181	4.85	4.28%
125	17.34	0.139	21.26	0.170	3.92	22.61%	139.50	1.116	144.81	1.158	5.31	3.80%
150	19.20	0.128	23.30	0.155	4.10	21.35%	165.80	1.105	171.56	1.144	5.77	3.48%
175	21.06	0.120	25.34	0.145	4.28	20.32%	192.09	1.098	198.31	1.133	6.22	3.24%
200	22.92	0.115	27.38	0.137	4.46	19.46%	218.38	1.092	225.06	1.125	6.68	3.06%
225	24.78	0.110	29.42	0.131	4.64	18.72%	244.67	1.087	251.81	1.119	7.14	2.92%
250	26.64	0.107	31.46	0.126	4.82	18.09%	270.97	1.084	278.56	1.114	7.60	2.80%
275	28.50	0.104	33.50	0.122	5.00	17.54%	297.26	1.081	305.31	1.110	8.05	2.71%
300	30.36	0.101	35.54	0.118	5.18	17.06%	323.55	1.079	332.06	1.107	8.51	2.63%
350	34.08	0.097	39.62	0.113	5.54	16.26%	376.14	1.075	385.56	1.102	9.43	2.51%
400	37.80	0.095	43.70	0.109	5.90	15.61%	428.72	1.072	439.06	1.098	10.34	2.41%
450	41.52	0.092	47.78	0.106	6.26	15.08%	481.31	1.070	492.56	1.095	11.26	2.34%
500	45.24	0.090	51.86	0.104	6.62	14.63%	533.89	1.068	546.06	1.092	12.17	2.28%
750	63.84	0.085	72.26	0.096	8.42	13.19%	796.82	1.062	813.56	1.085	16.75	2.10%
1,000	82.44	0.082	92.66	0.093	10.22	12.40%	1,059.74	1.060	1,081.06	1.081	21.32	2.01%
Estimated Bill Percentile - 25%												
70	12.52	0.179	15.97	0.228	3.46	27.60%	80.93	1.156	85.16	1.217	4.23	5.23%
Bill Percentile - 50%												
100	15.48	0.155	19.22	0.192	3.74	24.16%	113.21	1.132	118.06	1.181	4.85	4.28%
Estimated Bill Percentile - 75%												
150	19.20	0.128	23.30	0.155	4.10	21.35%	165.80	1.105	171.56	1.144	5.77	3.48%

Equivalent DRY Therm Present Rate	Block therm	R-4 Rate	
Customer Charge	-	$5.61	/Customer
First	100	$0.0987	/therm
Over	100	$0.0744	/therm
TOTAL CGC & LDAC		$0.9773	/therm
CGC		$0.9369	
LDAC		$0.0404	

Proposed Rate	Block therm	R-4 Rate	
Customer Charge	-	$8.40	/Customer
First	100	$0.1082	/therm
Over	100	$0.0816	/therm
TOTAL CGC & LDAC		$0.9884	/therm
CGC		$0.9480	/therm
LDAC		$0.0404	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
Low Income Residential Heating
Rate R-4

	Present Rate		Proposed Rate		Difference Revenues	Difference Percent	Present Rate With CGC Revenues		Proposed Rate With CGC Revenues		Difference With CGC Revenues	
Sales therm	Base Rate	Revenues Per therm	Base Rate	Revenues Per therm	Base Rate	Base Rate	Rate	Revenues Per therm	Rate	Revenues Per therm	Revenues Rate	Percent Rate
0	$5.61	NA	$8.40	NA	$2.79	49.73%	$5.61	NA	$8.40	NA	$2.79	49.73%
10	6.60	0.660	9.48	0.948	2.89	43.73%	13.20	1.320	16.12	1.612	2.93	22.18%
25	7.96	0.318	10.97	0.439	3.02	37.91%	24.46	0.978	27.58	1.103	3.12	12.76%
50	9.82	0.196	13.01	0.260	3.20	32.56%	42.81	0.856	46.22	0.924	3.41	7.96%
75	11.68	0.156	15.05	0.201	3.38	28.91%	61.17	0.816	64.87	0.865	3.69	6.04%
100	13.54	0.135	17.09	0.171	3.56	26.27%	79.53	0.795	83.51	0.835	3.98	5.00%
125	15.40	0.123	19.13	0.153	3.74	24.27%	97.89	0.783	102.16	0.817	4.26	4.36%
150	17.26	0.115	21.17	0.141	3.92	22.69%	116.25	0.775	120.80	0.805	4.55	3.91%
175	19.12	0.109	23.21	0.133	4.10	21.43%	134.61	0.769	139.45	0.797	4.84	3.59%
200	20.98	0.105	25.25	0.126	4.28	20.39%	152.97	0.765	158.09	0.790	5.12	3.35%
225	22.84	0.101	27.29	0.121	4.46	19.51%	171.33	0.761	176.74	0.785	5.41	3.16%
250	24.70	0.099	29.33	0.117	4.64	18.77%	189.69	0.759	195.38	0.782	5.69	3.00%
275	26.56	0.097	31.37	0.114	4.82	18.14%	208.05	0.757	214.03	0.778	5.98	2.87%
300	28.42	0.095	33.41	0.111	5.00	17.58%	226.41	0.755	232.67	0.776	6.26	2.77%
350	32.14	0.092	37.49	0.107	5.36	16.67%	263.13	0.752	269.96	0.771	6.84	2.60%
400	35.86	0.090	41.57	0.104	5.72	15.94%	299.84	0.750	307.25	0.768	7.41	2.47%
450	39.58	0.088	45.65	0.101	6.08	15.35%	336.56	0.748	344.54	0.766	7.98	2.37%
500	43.30	0.087	49.73	0.099	6.44	14.87%	373.28	0.747	381.83	0.764	8.55	2.29%
750	61.90	0.083	70.13	0.094	8.24	13.31%	556.87	0.742	568.28	0.758	11.41	2.05%
1,000	80.50	0.080	90.53	0.091	10.04	12.47%	740.47	0.740	754.73	0.755	14.26	1.93%
Estimated Bill Percentile - 25%												
14	6.99	0.499	9.91	0.708	2.92	41.81%	16.23	1.159	19.21	1.372	2.98	18.37%
Bill Percentile - 50%												
25	7.96	0.318	10.97	0.439	3.02	37.91%	24.46	0.978	27.58	1.103	3.12	12.76%
Estimated Bill Percentile - 75%												
40	9.07	0.227	12.20	0.305	3.12	34.44%	35.47	0.887	38.76	0.969	3.29	9.28%

Equivalent DRY Therm Present Rate R-4

	Block therm	Rate	
Customer Charge	-	$5.61	/Customer
First	20	$0.0987	/therm
Over	20	$0.0744	/therm
TOTAL CGC & LDAC		$0.6600	/therm
CGC		$0.6196	
LDAC		$0.0404	

Proposed Rate R-4

	Block therm	Rate	
Customer Charge	-	$8.40	/Customer
First	20	$0.1082	/therm
Over	20	$0.0816	/therm
TOTAL CGC & LDAC		$0.6642	/therm
CGC		$0.6238	/therm
LDAC		$0.0404	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
C&I - Low Annual Use, High Winter Use
Rate G-41

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$35.08	NA	$43.00	NA	$7.92	22.58%	$35.08	NA	$43.00	NA	$7.92	22.58%
10	38.05	3.805	46.12	4.612	8.07	21.20%	47.62	4.762	55.80	5.580	8.18	17.17%
25	42.52	1.701	50.80	2.032	8.29	19.49%	66.43	2.657	74.99	3.000	8.56	12.89%
50	49.95	0.999	58.60	1.172	8.65	17.32%	97.78	1.956	106.98	2.140	9.21	9.41%
75	57.39	0.765	66.40	0.885	9.02	15.71%	129.12	1.722	138.97	1.853	9.85	7.63%
100	64.82	0.648	74.20	0.742	9.38	14.47%	160.47	1.605	170.96	1.710	10.49	6.54%
150	74.49	0.497	84.35	0.562	9.86	13.23%	217.97	1.453	229.49	1.530	11.52	5.29%
200	84.16	0.421	94.49	0.472	10.33	12.27%	275.46	1.377	288.01	1.440	12.55	4.56%
250	93.83	0.375	104.64	0.419	10.81	11.52%	332.96	1.332	346.54	1.386	13.58	4.08%
300	103.50	0.345	114.78	0.383	11.28	10.90%	390.45	1.302	405.06	1.350	14.61	3.74%
350	113.17	0.323	124.93	0.357	11.76	10.39%	447.95	1.280	463.59	1.325	15.64	3.49%
400	122.84	0.307	135.07	0.338	12.23	9.96%	505.44	1.264	522.11	1.305	16.67	3.30%
500	142.18	0.284	155.36	0.311	13.18	9.27%	620.43	1.241	639.16	1.278	18.73	3.02%
600	161.52	0.269	175.65	0.293	14.13	8.75%	735.42	1.226	756.21	1.260	20.79	2.83%
700	180.86	0.258	195.94	0.280	15.08	8.34%	850.41	1.215	873.26	1.248	22.85	2.69%
800	200.20	0.250	216.23	0.270	16.03	8.01%	965.40	1.207	990.31	1.238	24.91	2.58%
900	219.54	0.244	236.52	0.263	16.98	7.73%	1,080.39	1.200	1,107.36	1.230	26.97	2.50%
1,000	238.88	0.239	256.81	0.257	17.93	7.51%	1,195.38	1.195	1,224.41	1.224	29.03	2.43%
1,250	287.23	0.230	307.54	0.246	20.31	7.07%	1,482.86	1.186	1,517.04	1.214	34.18	2.31%
1,500	335.58	0.224	358.26	0.239	22.68	6.76%	1,770.33	1.180	1,809.66	1.206	39.33	2.22%
Estimated Bill Percentile - 25%												
70	55.90	0.799	64.84	0.926	8.94	16.00%	122.85	1.755	132.57	1.894	9.72	7.91%
Bill Percentile - 50%												
200	84.16	0.421	94.49	0.472	10.33	12.27%	275.46	1.377	288.01	1.440	12.55	4.56%
Estimated Bill Percentile - 75%												
500	142.18	0.284	155.36	0.311	13.18	9.27%	620.43	1.241	639.16	1.278	18.73	3.02%

Equivalent DRY Therm Present Rate G-41

	Block therm	Rate	
Customer Charge	-	$35.08	/Customer
First	100	$0.2974	/therm
Over	100	$0.1934	/therm
TOTAL CGC & LDAC		$0.9565	/therm
CGC		$0.9371	
LDAC		$0.0194	

Proposed Rate G-41

	Block therm	Rate	
Customer Charge	-	$43.00	/Customer
First	100	$0.3120	/therm
Over	100	$0.2029	/therm
TOTAL CGC & LDAC		$0.9676	/therm
CGC		$0.9482	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
C&I - Low Annual Use, High Winter Use
Rate G-41

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$35.08	NA	$43.00	NA	$7.92	22.58%	$35.08	NA	$43.00	NA	$7.92	22.58%
10	38.05	3.805	46.12	4.612	8.07	21.20%	44.45	4.445	52.56	5.256	8.11	18.24%
25	42.00	1.680	50.25	2.010	8.26	19.67%	57.98	2.319	66.35	2.654	8.36	14.43%
50	46.83	0.937	55.33	1.107	8.50	18.14%	78.80	1.576	87.51	1.750	8.71	11.05%
75	51.67	0.689	60.40	0.805	8.73	16.91%	99.63	1.328	108.68	1.449	9.05	9.08%
100	56.50	0.565	65.47	0.655	8.97	15.88%	120.45	1.204	129.84	1.298	9.39	7.80%
150	66.17	0.441	75.62	0.504	9.45	14.28%	162.09	1.081	172.17	1.148	10.08	6.22%
200	75.84	0.379	85.76	0.429	9.92	13.08%	203.74	1.019	214.50	1.073	10.77	5.28%
250	85.51	0.342	95.91	0.384	10.40	12.16%	245.38	0.982	256.83	1.027	11.45	4.67%
300	95.18	0.317	106.05	0.354	10.87	11.42%	287.03	0.957	299.16	0.997	12.14	4.23%
350	104.85	0.300	116.20	0.332	11.35	10.82%	328.67	0.939	341.49	0.976	12.82	3.90%
400	114.52	0.286	126.34	0.316	11.82	10.32%	370.31	0.926	383.82	0.960	13.51	3.65%
500	133.86	0.268	146.63	0.293	12.77	9.54%	453.60	0.907	468.48	0.937	14.88	3.28%
600	153.20	0.255	166.92	0.278	13.72	8.96%	536.89	0.895	553.14	0.922	16.25	3.03%
700	172.54	0.246	187.21	0.267	14.67	8.50%	620.18	0.886	637.80	0.911	17.62	2.84%
800	191.88	0.240	207.50	0.259	15.62	8.14%	703.47	0.879	722.46	0.903	18.99	2.70%
900	211.22	0.235	227.79	0.253	16.57	7.85%	786.76	0.874	807.12	0.897	20.37	2.59%
1,000	230.56	0.231	248.08	0.248	17.52	7.60%	870.04	0.870	891.78	0.892	21.74	2.50%
1,250	278.91	0.223	298.81	0.239	19.90	7.13%	1,078.27	0.863	1,103.43	0.883	25.17	2.33%
1,500	327.26	0.218	349.53	0.233	22.27	6.81%	1,286.49	0.858	1,315.08	0.877	28.60	2.22%
Estimated Bill Percentile - 25%												
-	35.08		43.00	0.000	7.92	22.58%	35.08	0.000	43.00	0.000	7.92	22.58%
Bill Percentile - 50%												
8	37.46	4.682	45.50	5.687	8.04	21.45%	42.58	5.322	50.65	6.331	8.07	18.96%
Estimated Bill Percentile - 75%												
45	45.86	1.019	54.31	1.207	8.45	18.42%	74.64	1.659	83.28	1.851	8.64	11.57%

Equivalent DRY Therm Present Rate	Block therm	G-41 Rate	
Customer Charge	-	$35.08	/Customer
First	20	$0.2974	/therm
Over	20	$0.1934	/therm
TOTAL CGC & LDAC		$0.6395	/therm
CGC		$0.6201	
LDAC		$0.0194	

Proposed Rate	Block therm	G-41 Rate	
Customer Charge	-	$43.00	/Customer
First	20	$0.3120	/therm
Over	20	$0.2029	/therm
TOTAL CGC & LDAC		$0.6437	/therm
CGC		$0.6243	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
C&I - Medium Annual Use, High Winter Use
Rate G-42

Sales therm	Present Rate Base Rate	Present Rate Revenues Per therm	Proposed Rate Base Rate	Proposed Rate Revenues Per therm	Difference Revenues Base Rate	Difference Percent Base Rate	Present Rate With CGC Revenues Rate	Present Rate With CGC Revenues Revenues Per therm	Proposed Rate With CGC Revenues Rate	Proposed Rate With CGC Revenues Revenues Per therm	Difference With CGC Revenues Revenues Rate	Difference With CGC Revenues Percent Rate
0	$100.24	NA	$120.00	NA	$19.76	19.71%	$100.24	NA	$120.00	NA	$19.76	19.71%
10	102.88	10.288	123.08	12.308	20.20	19.63%	112.45	11.245	132.75	13.275	20.31	18.06%
25	106.85	4.274	127.69	5.108	20.85	19.51%	130.76	5.230	151.88	6.075	21.13	16.16%
50	113.45	2.269	135.39	2.708	21.94	19.33%	161.28	3.226	183.77	3.675	22.49	13.95%
75	120.06	1.601	143.08	1.908	23.02	19.18%	191.79	2.557	215.65	2.875	23.86	12.44%
100	126.66	1.267	150.77	1.508	24.11	19.04%	222.31	2.223	247.53	2.475	25.22	11.34%
150	139.87	0.932	166.16	1.108	26.29	18.79%	283.35	1.889	311.30	2.075	27.95	9.86%
200	153.08	0.765	181.54	0.908	28.46	18.59%	344.38	1.722	375.06	1.875	30.68	8.91%
250	166.29	0.665	196.93	0.788	30.64	18.42%	405.42	1.622	438.83	1.755	33.41	8.24%
300	179.50	0.598	212.31	0.708	32.81	18.28%	466.45	1.555	502.59	1.675	36.14	7.75%
350	192.71	0.551	227.70	0.651	34.99	18.15%	527.49	1.507	566.36	1.618	38.87	7.37%
400	205.92	0.515	243.08	0.608	37.16	18.05%	588.52	1.471	630.12	1.575	41.60	7.07%
500	232.34	0.465	273.85	0.548	41.51	17.87%	710.59	1.421	757.65	1.515	47.06	6.62%
750	298.39	0.398	350.78	0.468	52.39	17.56%	1,015.77	1.354	1,076.48	1.435	60.71	5.98%
1,000	364.44	0.364	427.70	0.428	63.26	17.36%	1,320.94	1.321	1,395.30	1.395	74.36	5.63%
1,500	451.69	0.301	529.30	0.353	77.61	17.18%	1,886.44	1.258	1,980.70	1.320	94.26	5.00%
2,000	538.94	0.269	630.90	0.315	91.96	17.06%	2,451.94	1.226	2,566.10	1.283	114.16	4.66%
3,000	713.44	0.238	834.10	0.278	120.66	16.91%	3,582.94	1.194	3,736.90	1.246	153.96	4.30%
4,000	887.94	0.222	1,037.30	0.259	149.36	16.82%	4,713.94	1.178	4,907.70	1.227	193.76	4.11%
5,000	1,062.44	0.212	1,240.50	0.248	178.06	16.76%	5,844.94	1.169	6,078.50	1.216	233.56	4.00%
Estimated Bill Percentile - 25%												
1,300	416.79	0.321	488.66	0.376	71.87	17.24%	1,660.24	1.277	1,746.54	1.343	86.30	5.20%
Bill Percentile - 50%												
2,000	538.94	0.269	630.90	0.315	91.96	17.06%	2,451.94	1.226	2,566.10	1.283	114.16	4.66%
Estimated Bill Percentile - 75%												
3,500	800.69	0.229	935.70	0.267	135.01	16.86%	4,148.44	1.185	4,322.30	1.235	173.86	4.19%

Equivalent DRY Therm Present Rate G-42

	Block therm	Rate	
Customer Charge	-	$100.24	/Customer
First	1,000	$0.2642	/therm
Over	1,000	$0.1745	/therm
TOTAL CGC & LDAC		$0.9565	/therm
CGC		$0.9371	
LDAC		$0.0194	

Proposed Rate G-42

	Block therm	Rate	
Customer Charge	-	$120.00	/Customer
First	1,000	$0.3077	/therm
Over	1,000	$0.2032	/therm
TOTAL CGC & LDAC		$0.9676	/therm
CGC		$0.9482	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
C&I - Medium Annual Use, High Winter Use
Rate G-42

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$100.24	NA	$120.00	NA	$19.76	19.71%	$100.24	NA	$120.00	NA	$19.76	19.71%
10	102.88	10.288	123.08	12.308	20.20	19.63%	109.28	10.928	129.51	12.951	20.24	18.52%
25	106.85	4.274	127.69	5.108	20.85	19.51%	122.83	4.913	143.79	5.751	20.95	17.06%
50	113.45	2.269	135.39	2.708	21.94	19.33%	145.42	2.908	167.57	3.351	22.15	15.23%
75	120.06	1.601	143.08	1.908	23.02	19.18%	168.02	2.240	191.36	2.551	23.34	13.89%
100	126.66	1.267	150.77	1.508	24.11	19.04%	190.61	1.906	215.14	2.151	24.53	12.87%
150	139.87	0.932	166.16	1.108	26.29	18.79%	235.79	1.572	262.71	1.751	26.92	11.42%
200	153.08	0.765	181.54	0.908	28.46	18.59%	280.98	1.405	310.28	1.551	29.30	10.43%
250	166.29	0.665	196.93	0.788	30.64	18.42%	326.16	1.305	357.85	1.431	31.69	9.72%
300	179.50	0.598	212.31	0.708	32.81	18.28%	371.35	1.238	405.42	1.351	34.07	9.18%
350	192.71	0.551	227.70	0.651	34.99	18.15%	416.53	1.190	452.99	1.294	36.46	8.75%
400	205.92	0.515	243.08	0.608	37.16	18.05%	461.71	1.154	500.56	1.251	38.85	8.41%
500	223.37	0.447	263.40	0.527	40.03	17.92%	543.11	1.086	585.25	1.171	42.14	7.76%
750	267.00	0.356	314.20	0.419	47.21	17.68%	746.61	0.995	796.98	1.063	50.37	6.75%
1,000	310.62	0.311	365.00	0.365	54.38	17.51%	950.10	0.950	1,008.70	1.009	58.60	6.17%
1,500	397.87	0.265	466.60	0.311	68.73	17.27%	1,357.10	0.905	1,432.15	0.955	75.05	5.53%
2,000	485.12	0.243	568.20	0.284	83.08	17.13%	1,764.09	0.882	1,855.60	0.928	91.51	5.19%
3,000	659.62	0.220	771.40	0.257	111.78	16.95%	2,578.07	0.859	2,702.50	0.901	124.43	4.83%
4,000	834.12	0.209	974.60	0.244	140.48	16.84%	3,392.06	0.848	3,549.40	0.887	157.34	4.64%
5,000	1,008.62	0.202	1,177.80	0.236	169.18	16.77%	4,206.04	0.841	4,396.30	0.879	190.26	4.52%
Estimated Bill Percentile - 25%												
45	112.13	2.492	133.85	2.974	21.72	19.37%	140.91	3.131	162.81	3.618	21.91	15.55%
Bill Percentile - 50%												
350	192.71	0.551	227.70	0.651	34.99	18.15%	416.53	1.190	452.99	1.294	36.46	8.75%
Estimated Bill Percentile - 75%												
750	267.00	0.356	314.20	0.419	47.21	17.68%	746.61	0.995	796.98	1.063	50.37	6.75%

Equivalent DRY Therm Present Rate	G-42		
	Block therm	Rate	
Customer Charge	-	$100.24	/Customer
First	400	$0.2642	/therm
Over	400	$0.1745	/therm
TOTAL CGC & LDAC		$0.6395	/therm
CGC		$0.6201	
LDAC		$0.0194	

Proposed Rate	G-42		
	Block therm	Rate	
Customer Charge	-	$120.00	/Customer
First	400	$0.3077	/therm
Over	400	$0.2032	/therm
TOTAL CGC & LDAC		$0.6437	/therm
CGC		$0.6243	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
C&I - High Annual Use, High Winter Use
Rate G-43

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$421.01	NA	$515.00	NA	$93.99	22.32%	$421.01	NA	$515.00	NA	$93.99	22.32%
500	500.56	1.001	616.85	1.234	116.29	23.23%	978.81	1.958	1,100.65	2.201	121.84	12.45%
1,000	580.11	0.580	718.70	0.719	138.59	23.89%	1,536.61	1.537	1,686.30	1.686	149.69	9.74%
1,250	619.89	0.496	769.63	0.616	149.74	24.16%	1,815.51	1.452	1,979.13	1.583	163.62	9.01%
1,500	659.66	0.440	820.55	0.547	160.89	24.39%	2,094.41	1.396	2,271.95	1.515	177.54	8.48%
1,750	699.44	0.400	871.48	0.498	172.04	24.60%	2,373.31	1.356	2,564.78	1.466	191.47	8.07%
2,000	739.21	0.370	922.40	0.461	183.19	24.78%	2,652.21	1.326	2,857.60	1.429	205.39	7.74%
2,500	818.76	0.328	1,024.25	0.410	205.49	25.10%	3,210.01	1.284	3,443.25	1.377	233.24	7.27%
3,000	898.31	0.299	1,126.10	0.375	227.79	25.36%	3,767.81	1.256	4,028.90	1.343	261.09	6.93%
3,500	977.86	0.279	1,227.95	0.351	250.09	25.58%	4,325.61	1.236	4,614.55	1.318	288.94	6.68%
4,000	1,057.41	0.264	1,329.80	0.332	272.39	25.76%	4,883.41	1.221	5,200.20	1.300	316.79	6.49%
4,500	1,136.96	0.253	1,431.65	0.318	294.69	25.92%	5,441.21	1.209	5,785.85	1.286	344.64	6.33%
5,000	1,216.51	0.243	1,533.50	0.307	316.99	26.06%	5,999.01	1.200	6,371.50	1.274	372.49	6.21%
6,000	1,375.61	0.229	1,737.20	0.290	361.59	26.29%	7,114.61	1.186	7,542.80	1.257	428.19	6.02%
7,000	1,534.71	0.219	1,940.90	0.277	406.19	26.47%	8,230.21	1.176	8,714.10	1.245	483.89	5.88%
8,000	1,693.81	0.212	2,144.60	0.268	450.79	26.61%	9,345.81	1.168	9,885.40	1.236	539.59	5.77%
9,000	1,852.91	0.206	2,348.30	0.261	495.39	26.74%	10,461.41	1.162	11,056.70	1.229	595.29	5.69%
10,000	2,012.01	0.201	2,552.00	0.255	539.99	26.84%	11,577.01	1.158	12,228.00	1.223	650.99	5.62%
15,000	2,807.51	0.187	3,570.50	0.238	762.99	27.18%	17,155.01	1.144	18,084.50	1.206	929.49	5.42%
20,000	3,603.01	0.180	4,589.00	0.229	985.99	27.37%	22,733.01	1.137	23,941.00	1.197	1,207.99	5.31%
Estimated Bill Percentile - 25%												
9,000	1,852.91	0.206	2,348.30	0.261	495.39	26.74%	10,461.41	1.162	11,056.70	1.229	595.29	5.69%
Bill Percentile - 50%												
15,000	2,807.51	0.187	3,570.50	0.238	762.99	27.18%	17,155.01	1.144	18,084.50	1.206	929.49	5.42%
Estimated Bill Percentile - 75%												
25,000	4,398.51	0.176	5,607.50	0.224	1,208.99	27.49%	28,311.01	1.132	29,797.50	1.192	1,486.49	5.25%

Equivalent DRY Therm Present Rate	G-43		
	Block therm	Rate	
Customer Charge	-	$421.01	/Customer
First	-	$0.1591	/therm
Over	-	$0.1591	/therm
TOTAL CGC & LDAC		$0.9565	/therm
CGC		$0.9371	
LDAC		$0.0194	

Proposed Rate	G-43		
	Block therm	Rate	
Customer Charge	-	$515.00	/Customer
First	-	$0.2037	/therm
Over	-	$0.2037	/therm
TOTAL CGC & LDAC		$0.9676	/therm
CGC		$0.9482	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
C&I - High Annual Use, High Winter Use
Rate G-43

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$421.01	NA	$515.00	NA	$93.99	22.32%	$421.01	NA	$515.00	NA	$93.99	22.32%
500	457.41	0.915	561.60	1.123	104.19	22.78%	777.15	1.554	883.45	1.767	106.30	13.68%
1,000	493.81	0.494	608.20	0.608	114.39	23.16%	1,133.29	1.133	1,251.90	1.252	118.61	10.47%
1,250	512.01	0.410	631.50	0.505	119.49	23.34%	1,311.37	1.049	1,436.13	1.149	124.76	9.51%
1,500	530.21	0.353	654.80	0.437	124.59	23.50%	1,489.44	0.993	1,620.35	1.080	130.91	8.79%
1,750	548.41	0.313	678.10	0.387	129.69	23.65%	1,667.51	0.953	1,804.58	1.031	137.07	8.22%
2,000	566.61	0.283	701.40	0.351	134.79	23.79%	1,845.58	0.923	1,988.80	0.994	143.22	7.76%
2,500	603.01	0.241	748.00	0.299	144.99	24.04%	2,201.72	0.881	2,357.25	0.943	155.53	7.06%
3,000	639.41	0.213	794.60	0.265	155.19	24.27%	2,557.86	0.853	2,725.70	0.909	167.84	6.56%
3,500	675.81	0.193	841.20	0.240	165.39	24.47%	2,914.00	0.833	3,094.15	0.884	180.15	6.18%
4,000	712.21	0.178	887.80	0.222	175.59	24.65%	3,270.15	0.818	3,462.60	0.866	192.45	5.89%
4,500	748.61	0.166	934.40	0.208	185.79	24.82%	3,626.29	0.806	3,831.05	0.851	204.76	5.65%
5,000	785.01	0.157	981.00	0.196	195.99	24.97%	3,982.43	0.796	4,199.50	0.840	217.07	5.45%
6,000	857.81	0.143	1,074.20	0.179	216.39	25.23%	4,694.72	0.782	4,936.40	0.823	241.68	5.15%
7,000	930.61	0.133	1,167.40	0.167	236.79	25.44%	5,407.00	0.772	5,673.30	0.810	266.30	4.93%
8,000	1,003.41	0.125	1,260.60	0.158	257.19	25.63%	6,119.28	0.765	6,410.20	0.801	290.92	4.75%
9,000	1,076.21	0.120	1,353.80	0.150	277.59	25.79%	6,831.57	0.759	7,147.10	0.794	315.53	4.62%
10,000	1,149.01	0.115	1,447.00	0.145	297.99	25.93%	7,543.85	0.754	7,884.00	0.788	340.15	4.51%
15,000	1,513.01	0.101	1,913.00	0.128	399.99	26.44%	11,105.27	0.740	11,568.50	0.771	463.23	4.17%
20,000	1,877.01	0.094	2,379.00	0.119	501.99	26.74%	14,666.70	0.733	15,253.00	0.763	586.30	4.00%
Estimated Bill Percentile - 25%												
450	453.77	1.008	556.94	1.238	103.17	22.74%	741.54	1.648	846.61	1.881	105.07	14.17%
Bill Percentile - 50%												
3,500	675.81	0.193	841.20	0.240	165.39	24.47%	2,914.00	0.833	3,094.15	0.884	180.15	6.18%
Estimated Bill Percentile - 75%												
10,000	1,149.01	0.115	1,447.00	0.145	297.99	25.93%	7,543.85	0.754	7,884.00	0.788	340.15	4.51%

Equivalent DRY Therm Present Rate		G-43	
	Block therm	Rate	
Customer Charge	-	$421.01	/Customer
First	-	$0.0728	/therm
Over	-	$0.0728	/therm
TOTAL CGC & LDAC		$0.6395	/therm
CGC		$0.6201	
LDAC		$0.0194	

Proposed Rate		G-43	
	Block therm	Rate	
Customer Charge	-	$515.00	/Customer
First	-	$0.0932	/therm
Over	-	$0.0932	/therm
TOTAL CGC & LDAC		$0.6437	/therm
CGC		$0.6243	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
C&I - Low Annual Use, Low Winter Use
Rate G-51

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$35.08	NA	$36.50	NA	$1.42	4.05%	$35.08	NA	$36.50	NA	$1.42	4.05%
10	37.01	3.701	38.44	3.844	1.44	3.88%	46.57	4.657	48.11	4.811	1.55	3.32%
25	39.90	1.596	41.36	1.654	1.46	3.65%	63.80	2.552	65.53	2.621	1.74	2.72%
50	44.72	0.894	46.22	0.924	1.50	3.34%	92.51	1.850	94.56	1.891	2.05	2.22%
75	49.54	0.661	51.07	0.681	1.53	3.09%	121.23	1.616	123.59	1.648	2.37	1.95%
100	54.36	0.544	55.93	0.559	1.57	2.89%	149.94	1.499	152.62	1.526	2.68	1.79%
150	60.59	0.404	62.21	0.415	1.62	2.67%	203.96	1.360	207.24	1.382	3.29	1.61%
200	66.81	0.334	68.48	0.342	1.67	2.50%	257.97	1.290	261.86	1.309	3.89	1.51%
250	73.04	0.292	74.76	0.299	1.72	2.36%	311.99	1.248	316.48	1.266	4.50	1.44%
300	79.26	0.264	81.03	0.270	1.77	2.23%	366.00	1.220	371.10	1.237	5.10	1.39%
350	85.49	0.244	87.31	0.249	1.82	2.13%	420.02	1.200	425.72	1.216	5.71	1.36%
400	91.71	0.229	93.58	0.234	1.87	2.04%	474.03	1.185	480.34	1.201	6.31	1.33%
500	104.16	0.208	106.13	0.212	1.97	1.89%	582.06	1.164	589.58	1.179	7.52	1.29%
600	116.61	0.194	118.68	0.198	2.07	1.78%	690.09	1.150	698.82	1.165	8.73	1.27%
700	129.06	0.184	131.23	0.187	2.17	1.68%	798.12	1.140	808.06	1.154	9.94	1.25%
800	141.51	0.177	143.78	0.180	2.27	1.60%	906.15	1.133	917.30	1.147	11.15	1.23%
900	153.96	0.171	156.33	0.174	2.37	1.54%	1,014.18	1.127	1,026.54	1.141	12.36	1.22%
1,000	166.41	0.166	168.88	0.169	2.47	1.48%	1,122.21	1.122	1,135.78	1.136	13.57	1.21%
1,250	197.54	0.158	200.26	0.160	2.72	1.38%	1,392.29	1.114	1,408.88	1.127	16.60	1.19%
1,500	228.66	0.152	231.63	0.154	2.97	1.30%	1,662.36	1.108	1,681.98	1.121	19.62	1.18%
Estimated Bill Percentile - 25%												
45	43.76	0.972	45.24	1.005	1.49	3.40%	86.77	1.928	88.75	1.972	1.99	2.29%
Bill Percentile - 50%												
175	63.70	0.364	65.34	0.373	1.65	2.58%	230.96	1.320	234.55	1.340	3.59	1.55%
Estimated Bill Percentile - 75%												
450	97.94	0.218	99.86	0.222	1.92	1.96%	528.05	1.173	534.96	1.189	6.91	1.31%

Equivalent DRY Therm Present Rate G-51

	Block therm	Rate	
Customer Charge	-	$35.08	/Customer
First	100	$0.1928	/therm
Over	100	$0.1245	/therm
TOTAL CGC & LDAC		$0.9558	/therm
CGC		$0.9364	
LDAC		$0.0194	

Proposed Rate G-51

	Block therm	Rate	
Customer Charge	-	$36.50	/Customer
First	100	$0.1943	/therm
Over	100	$0.1255	/therm
TOTAL CGC & LDAC		$0.9669	/therm
CGC		$0.9475	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
C&I - Low Annual Use, Low Winter Use
Rate G-51

	Present Rate		Proposed Rate		Difference		Present Rate With CGC Revenues		Proposed Rate With CGC Revenues		Difference With CGC Revenues	
Sales therm	Base Rate	Revenues Per therm	Base Rate	Revenues Per therm	Revenues Base Rate	Percent Base Rate	Rate	Revenues Per therm	Rate	Revenues Per therm	Revenues Rate	Percent Rate
0	$35.08	NA	$36.50	NA	$1.42	4.05%	$35.08	NA	$36.50	NA	$1.42	4.05%
10	37.01	3.701	38.44	3.844	1.44	3.88%	43.38	4.338	44.86	4.486	1.48	3.40%
25	39.90	1.596	41.36	1.654	1.46	3.65%	55.84	2.233	57.40	2.296	1.56	2.80%
50	44.72	0.894	46.22	0.924	1.50	3.34%	76.59	1.532	78.30	1.566	1.70	2.22%
75	49.54	0.661	51.07	0.681	1.53	3.09%	97.35	1.298	99.19	1.323	1.84	1.90%
100	54.36	0.544	55.93	0.559	1.57	2.89%	118.10	1.181	120.09	1.201	1.99	1.68%
150	60.59	0.404	62.21	0.415	1.62	2.67%	156.20	1.041	158.45	1.056	2.24	1.44%
200	66.81	0.334	68.48	0.342	1.67	2.50%	194.30	0.971	196.80	0.984	2.50	1.29%
250	73.04	0.292	74.76	0.299	1.72	2.36%	232.39	0.930	235.16	0.941	2.76	1.19%
300	79.26	0.264	81.03	0.270	1.77	2.23%	270.49	0.902	273.51	0.912	3.02	1.12%
350	85.49	0.244	87.31	0.249	1.82	2.13%	308.59	0.882	311.87	0.891	3.28	1.06%
400	91.71	0.229	93.58	0.234	1.87	2.04%	346.68	0.867	350.22	0.876	3.54	1.02%
500	104.16	0.208	106.13	0.212	1.97	1.89%	422.88	0.846	426.93	0.854	4.05	0.96%
600	116.61	0.194	118.68	0.198	2.07	1.78%	499.07	0.832	503.64	0.839	4.57	0.92%
700	129.06	0.184	131.23	0.187	2.17	1.68%	575.26	0.822	580.35	0.829	5.09	0.88%
800	141.51	0.177	143.78	0.180	2.27	1.60%	651.46	0.814	657.06	0.821	5.60	0.86%
900	153.96	0.171	156.33	0.174	2.37	1.54%	727.65	0.809	733.77	0.815	6.12	0.84%
1,000	166.41	0.166	168.88	0.169	2.47	1.48%	803.84	0.804	810.48	0.810	6.64	0.83%
1,250	197.54	0.158	200.26	0.160	2.72	1.38%	994.33	0.795	1,002.26	0.802	7.93	0.80%
1,500	228.66	0.152	231.63	0.154	2.97	1.30%	1,184.81	0.790	1,194.03	0.796	9.22	0.78%
Estimated Bill Percentile - 25%												
6	36.24	6.039	37.67	6.278	1.43	3.94%	40.06	6.677	41.52	6.919	1.45	3.63%
Bill Percentile - 50%												
60	46.65	0.777	48.16	0.803	1.51	3.24%	84.89	1.415	86.65	1.444	1.76	2.07%
Estimated Bill Percentile - 75%												
250	73.04	0.292	74.76	0.299	1.72	2.36%	232.39	0.930	235.16	0.941	2.76	1.19%

Equivalent DRY Therm Present Rate G-51

	Block therm	Rate	
Customer Charge	-	$35.08	/Customer
First	100	$0.1928	/therm
Over	100	$0.1245	/therm
TOTAL CGC & LDAC		$0.6374	/therm
CGC		$0.6180	
LDAC		$0.0194	

Proposed Rate G-51

	Block therm	Rate	
Customer Charge	-	$36.50	/Customer
First	100	$0.1943	/therm
Over	100	$0.1255	/therm
TOTAL CGC & LDAC		$0.6416	/therm
CGC		$0.6222	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
C&I - Medium Annual Use, Low Winter Use
Rate G-52

					Difference		Present Rate		Proposed Rate		Difference	
	Present Rate		Proposed Rate		Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$100.24	NA	$120.00	NA	$19.76	19.71%	$100.24	NA	$120.00	NA	$19.76	19.71%
10	101.75	10.175	121.74	12.174	19.99	19.65%	111.30	11.130	131.41	13.141	20.10	18.06%
25	104.00	4.160	124.34	4.974	20.34	19.56%	127.90	5.116	148.52	5.941	20.62	16.12%
50	107.77	2.155	128.69	2.574	20.92	19.41%	155.56	3.111	177.03	3.541	21.48	13.81%
75	111.53	1.487	133.03	1.774	21.50	19.28%	183.21	2.443	205.55	2.741	22.33	12.19%
100	115.29	1.153	137.37	1.374	22.08	19.15%	210.87	2.109	234.06	2.341	23.19	11.00%
150	122.82	0.819	146.06	0.974	23.24	18.92%	266.19	1.775	291.09	1.941	24.91	9.36%
200	130.34	0.652	154.74	0.774	24.40	18.72%	321.50	1.608	348.12	1.741	26.62	8.28%
250	137.87	0.551	163.43	0.654	25.56	18.54%	376.82	1.507	405.15	1.621	28.34	7.52%
300	145.39	0.485	172.11	0.574	26.72	18.38%	432.13	1.440	462.18	1.541	30.05	6.95%
350	152.92	0.437	180.80	0.517	27.88	18.23%	487.45	1.393	519.21	1.483	31.77	6.52%
400	160.44	0.401	189.48	0.474	29.04	18.10%	542.76	1.357	576.24	1.441	33.48	6.17%
500	175.49	0.351	206.85	0.414	31.36	17.87%	653.39	1.307	690.30	1.381	36.91	5.65%
750	213.12	0.284	250.28	0.334	37.16	17.44%	929.97	1.240	975.45	1.301	45.48	4.89%
1,000	250.74	0.251	293.70	0.294	42.96	17.13%	1,206.54	1.207	1,260.60	1.261	54.06	4.48%
1,500	301.79	0.201	352.60	0.235	50.81	16.84%	1,735.49	1.157	1,802.95	1.202	67.46	3.89%
2,000	352.84	0.176	411.50	0.206	58.66	16.63%	2,264.44	1.132	2,345.30	1.173	80.86	3.57%
3,000	454.94	0.152	529.30	0.176	74.36	16.35%	3,322.34	1.107	3,430.00	1.143	107.66	3.24%
4,000	557.04	0.139	647.10	0.162	90.06	16.17%	4,380.24	1.095	4,514.70	1.129	134.46	3.07%
5,000	659.14	0.132	764.90	0.153	105.76	16.05%	5,438.14	1.088	5,599.40	1.120	161.26	2.97%
Estimated Bill Percentile - 25%												
1,040	254.82	0.245	298.41	0.287	43.59	17.11%	1,248.86	1.201	1,303.99	1.254	55.13	4.41%
Bill Percentile - 50%												
2,000	352.84	0.176	411.50	0.206	58.66	16.63%	2,264.44	1.132	2,345.30	1.173	80.86	3.57%
Estimated Bill Percentile - 75%												
3,500	505.99	0.145	588.20	0.168	82.21	16.25%	3,851.29	1.100	3,972.35	1.135	121.06	3.14%

Equivalent DRY Therm Present Rate	G-52		
	Block therm	Rate	
Customer Charge	-	$100.24	/Customer
First	1,000	$0.1505	/therm
Over	1,000	$0.1021	/therm
TOTAL CGC & LDAC		$0.9558	/therm
CGC		$0.9364	
LDAC		$0.0194	

Proposed Rate	G-52		
	Block therm	Rate	
Customer Charge	-	$120.00	/Customer
First	1,000	$0.1737	/therm
Over	1,000	$0.1178	/therm
TOTAL CGC & LDAC		$0.9669	/therm
CGC		$0.9475	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
C&I - Medium Annual Use, Low Winter Use
Rate G-52

	Present Rate		Proposed Rate		Difference		Present Rate		Proposed Rate		Difference	
					Revenues	Percent	With CGC Revenues		With CGC Revenues		With CGC Revenues	
Sales	Base	Revenues	Base	Revenues	Base	Base		Revenues		Revenues	Revenues	Percent
therm	Rate	Per therm	Rate	Per therm	Rate	Rate	Rate	Per therm	Rate	Per therm	Rate	Rate
0	$100.24	NA	$120.00	NA	$19.76	19.71%	$100.24	NA	$120.00	NA	$19.76	19.71%
10	101.35	10.135	121.28	12.128	19.93	19.67%	107.72	10.772	127.69	12.769	19.97	18.54%
25	103.01	4.120	123.19	4.928	20.19	19.60%	118.94	4.758	139.23	5.569	20.29	17.06%
50	105.77	2.115	126.38	2.528	20.61	19.49%	137.64	2.753	158.46	3.169	20.82	15.13%
75	108.54	1.447	129.57	1.728	21.04	19.38%	156.34	2.085	177.69	2.369	21.35	13.65%
100	111.30	1.113	132.76	1.328	21.46	19.28%	175.04	1.750	196.92	1.969	21.88	12.50%
150	116.83	0.779	139.14	0.928	22.31	19.10%	212.45	1.416	235.38	1.569	22.93	10.80%
200	122.36	0.612	145.52	0.728	23.16	18.93%	249.85	1.249	273.84	1.369	23.99	9.60%
250	127.89	0.512	151.90	0.608	24.01	18.77%	287.25	1.149	312.30	1.249	25.05	8.72%
300	133.42	0.445	158.28	0.528	24.86	18.63%	324.65	1.082	350.76	1.169	26.11	8.04%
350	138.95	0.397	164.66	0.470	25.71	18.50%	362.05	1.034	389.22	1.112	27.17	7.50%
400	144.48	0.361	171.04	0.428	26.56	18.38%	399.45	0.999	427.68	1.069	28.23	7.07%
500	155.54	0.311	183.80	0.368	28.26	18.17%	474.26	0.949	504.60	1.009	30.34	6.40%
750	183.19	0.244	215.70	0.288	32.51	17.75%	661.27	0.882	696.90	0.929	35.63	5.39%
1,000	210.84	0.211	247.60	0.248	36.76	17.44%	848.27	0.848	889.20	0.889	40.93	4.82%
1,500	242.69	0.162	284.35	0.190	41.66	17.17%	1,198.84	0.799	1,246.75	0.831	47.91	4.00%
2,000	274.54	0.137	321.10	0.161	46.56	16.96%	1,549.41	0.775	1,604.30	0.802	54.89	3.54%
3,000	338.24	0.113	394.60	0.132	56.36	16.66%	2,250.54	0.750	2,319.40	0.773	68.86	3.06%
4,000	401.94	0.100	468.10	0.117	66.16	16.46%	2,951.67	0.738	3,034.50	0.759	82.83	2.81%
5,000	465.64	0.093	541.60	0.108	75.96	16.31%	3,652.81	0.731	3,749.60	0.750	96.79	2.65%
Estimated Bill Percentile - 25%												
700	177.66	0.254	209.32	0.299	31.66	17.82%	623.86	0.891	658.44	0.941	34.58	5.54%
Bill Percentile - 50%												
1,040	213.39	0.205	250.54	0.241	37.15	17.41%	876.32	0.843	917.80	0.883	41.48	4.73%
Estimated Bill Percentile - 75%												
2,000	274.54	0.137	321.10	0.161	46.56	16.96%	1,549.41	0.775	1,604.30	0.802	54.89	3.54%

Equivalent DRY Therm Present Rate G-52

	Block therm	Rate	
Customer Charge	-	$100.24	/Customer
First	1,000	$0.1106	/therm
Over	1,000	$0.0637	/therm
TOTAL CGC & LDAC		$0.6374	/therm
CGC		$0.6180	
LDAC		$0.0194	

Proposed Rate G-52

	Block therm	Rate	
Customer Charge	-	$120.00	/Customer
First	1,000	$0.1276	/therm
Over	1,000	$0.0735	/therm
TOTAL CGC & LDAC		$0.6416	/therm
CGC		$0.6222	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Winter Season
C&I - High Annual Use, Load Factor Less Than 90%
Rate G-53

	Present Rate		Proposed Rate		Difference Revenues	Difference Percent	Present Rate With CGC Revenues		Proposed Rate With CGC Revenues		Difference With CGC Revenues	
Sales therm	Base Rate	Revenues Per therm	Base Rate	Revenues Per therm	Base Rate	Base Rate	Rate	Revenues Per therm	Rate	Revenues Per therm	Revenues Rate	Percent Rate
0	$431.03	NA	$530.00	NA	$98.97	22.96%	$431.03	NA	$530.00	NA	$98.97	22.96%
2,500	702.78	0.281	836.50	0.335	133.72	19.03%	3,092.28	1.237	3,253.75	1.302	161.47	5.22%
5,000	974.53	0.195	1,143.00	0.229	168.47	17.29%	5,753.53	1.151	5,977.50	1.196	223.97	3.89%
7,500	1,246.28	0.166	1,449.50	0.193	203.22	16.31%	8,414.78	1.122	8,701.25	1.160	286.47	3.40%
10,000	1,518.03	0.152	1,756.00	0.176	237.97	15.68%	11,076.03	1.108	11,425.00	1.143	348.97	3.15%
12,500	1,789.78	0.143	2,062.50	0.165	272.72	15.24%	13,737.28	1.099	14,148.75	1.132	411.47	3.00%
15,000	2,061.53	0.137	2,369.00	0.158	307.47	14.91%	16,398.53	1.093	16,872.50	1.125	473.97	2.89%
20,000	2,605.03	0.130	2,982.00	0.149	376.97	14.47%	21,721.03	1.086	22,320.00	1.116	598.97	2.76%
25,000	3,148.53	0.126	3,595.00	0.144	446.47	14.18%	27,043.53	1.082	27,767.50	1.111	723.97	2.68%
30,000	3,692.03	0.123	4,208.00	0.140	515.97	13.98%	32,366.03	1.079	33,215.00	1.107	848.97	2.62%
35,000	4,235.53	0.121	4,821.00	0.138	585.47	13.82%	37,688.53	1.077	38,662.50	1.105	973.97	2.58%
40,000	4,779.03	0.119	5,434.00	0.136	654.97	13.71%	43,011.03	1.075	44,110.00	1.103	1,098.97	2.56%
45,000	5,322.53	0.118	6,047.00	0.134	724.47	13.61%	48,333.53	1.074	49,557.50	1.101	1,223.97	2.53%
50,000	5,866.03	0.117	6,660.00	0.133	793.97	13.54%	53,656.03	1.073	55,005.00	1.100	1,348.97	2.51%
55,000	6,409.53	0.117	7,273.00	0.132	863.47	13.47%	58,978.53	1.072	60,452.50	1.099	1,473.97	2.50%
60,000	6,953.03	0.116	7,886.00	0.131	932.97	13.42%	64,301.03	1.072	65,900.00	1.098	1,598.97	2.49%
75,000	8,583.53	0.114	9,725.00	0.130	1,141.47	13.30%	80,268.53	1.070	82,242.50	1.097	1,973.97	2.46%
100,000	11,301.03	0.113	12,790.00	0.128	1,488.97	13.18%	106,881.03	1.069	109,480.00	1.095	2,598.97	2.43%
150,000	16,736.03	0.112	18,920.00	0.126	2,183.97	13.05%	160,106.03	1.067	163,955.00	1.093	3,848.97	2.40%
200,000	22,171.03	0.111	25,050.00	0.125	2,878.97	12.99%	213,331.03	1.067	218,430.00	1.092	5,098.97	2.39%
Estimated Bill Percentile - 25%												
10,000	1,518.03	0.152	1,756.00	0.176	237.97	15.68%	11,076.03	1.108	11,425.00	1.143	348.97	3.15%
Bill Percentile - 50%												
15,000	2,061.53	0.137	2,369.00	0.158	307.47	14.91%	16,398.53	1.093	16,872.50	1.125	473.97	2.89%
Estimated Bill Percentile - 75%												
30,000	3,692.03	0.123	4,208.00	0.140	515.97	13.98%	32,366.03	1.079	33,215.00	1.107	848.97	2.62%

Equivalent DRY Therm Present Rate G-53

	Block therm	Rate	
Customer Charge	-	$431.03	/Customer
First	-	$0.1087	/therm
Over	-	$0.1087	/therm
TOTAL CGC & LDAC		$0.9558	/therm
CGC		$0.9364	
LDAC		$0.0194	

Proposed Rate G-53

	Block therm	Rate	
Customer Charge	-	$530.00	/Customer
First	-	$0.1226	/therm
Over	-	$0.1226	/therm
TOTAL CGC & LDAC		$0.9669	/therm
CGC		$0.9475	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).

NATIONAL GRID - NH
Comparison of Present and Proposed Rates
Summer Season
C&I - High Annual Use, Load Factor Less Than 90%
Rate G-53

	Present Rate		Proposed Rate		Difference		Present Rate With CGC Revenues		Proposed Rate With CGC Revenues		Difference With CGC Revenues	
Sales therm	Base Rate	Revenues Per therm	Base Rate	Revenues Per therm	Revenues Base Rate	Percent Base Rate	Rate	Revenues Per therm	Rate	Revenues Per therm	Revenues Rate	Percent Rate
0	$431.03	NA	$530.00	NA	$98.97	22.96%	$431.03	NA	$530.00	NA	$98.97	22.96%
2,500	561.03	0.224	676.50	0.271	115.47	20.58%	2,154.61	0.862	2,280.50	0.912	125.89	5.84%
5,000	691.03	0.138	823.00	0.165	131.97	19.10%	3,878.20	0.776	4,031.00	0.806	152.80	3.94%
7,500	821.03	0.109	969.50	0.129	148.47	18.08%	5,601.78	0.747	5,781.50	0.771	179.72	3.21%
10,000	951.03	0.095	1,116.00	0.112	164.97	17.35%	7,325.37	0.733	7,532.00	0.753	206.63	2.82%
12,500	1,081.03	0.086	1,262.50	0.101	181.47	16.79%	9,048.95	0.724	9,282.50	0.743	233.55	2.58%
15,000	1,211.03	0.081	1,409.00	0.094	197.97	16.35%	10,772.54	0.718	11,033.00	0.736	260.46	2.42%
20,000	1,471.03	0.074	1,702.00	0.085	230.97	15.70%	14,219.70	0.711	14,534.00	0.727	314.30	2.21%
25,000	1,731.03	0.069	1,995.00	0.080	263.97	15.25%	17,666.87	0.707	18,035.00	0.721	368.13	2.08%
30,000	1,991.03	0.066	2,288.00	0.076	296.97	14.92%	21,114.04	0.704	21,536.00	0.718	421.96	2.00%
35,000	2,251.03	0.064	2,581.00	0.074	329.97	14.66%	24,561.21	0.702	25,037.00	0.715	475.79	1.94%
40,000	2,511.03	0.063	2,874.00	0.072	362.97	14.46%	28,008.38	0.700	28,538.00	0.713	529.62	1.89%
45,000	2,771.03	0.062	3,167.00	0.070	395.97	14.29%	31,455.55	0.699	32,039.00	0.712	583.45	1.85%
50,000	3,031.03	0.061	3,460.00	0.069	428.97	14.15%	34,902.72	0.698	35,540.00	0.711	637.28	1.83%
55,000	3,291.03	0.060	3,753.00	0.068	461.97	14.04%	38,349.88	0.697	39,041.00	0.710	691.12	1.80%
60,000	3,551.03	0.059	4,046.00	0.067	494.97	13.94%	41,797.05	0.697	42,542.00	0.709	744.95	1.78%
75,000	4,331.03	0.058	4,925.00	0.066	593.97	13.71%	52,138.56	0.695	53,045.00	0.707	906.44	1.74%
100,000	5,631.03	0.056	6,390.00	0.064	758.97	13.48%	69,374.40	0.694	70,550.00	0.706	1,175.60	1.69%
150,000	8,231.03	0.055	9,320.00	0.062	1,088.97	13.23%	103,846.09	0.692	105,560.00	0.704	1,713.91	1.65%
200,000	10,831.03	0.054	12,250.00	0.061	1,418.97	13.10%	138,317.77	0.692	140,570.00	0.703	2,252.23	1.63%
Estimated Bill Percentile - 25%												
5,000	691.03	0.138	823.00	0.165	131.97	19.10%	3,878.20	0.776	4,031.00	0.806	152.80	3.94%
Bill Percentile - 50%												
15,000	1,211.03	0.081	1,409.00	0.094	197.97	16.35%	10,772.54	0.718	11,033.00	0.736	260.46	2.42%
Estimated Bill Percentile - 75%												
20,000	1,471.03	0.074	1,702.00	0.085	230.97	15.70%	14,219.70	0.711	14,534.00	0.727	314.30	2.21%

Equivalent DRY Therm Present Rate	Block therm	G-53 Rate	
Customer Charge	-	$431.03	/Customer
First	-	$0.0520	/therm
Over	-	$0.0520	/therm
TOTAL CGC & LDAC		$0.6374	/therm
CGC		$0.6180	
LDAC		$0.0194	

Proposed Rate	Block therm	G-53 Rate	
Customer Charge	-	$530.00	/Customer
First	-	$0.0586	/therm
Over	-	$0.0586	/therm
TOTAL CGC & LDAC		$0.6416	/therm
CGC		$0.6222	/therm
LDAC		$0.0194	/therm

NOTE: The present CGC rate reflects approved rates. All present rates are restated to Dry therms to allow comparison with proposed rates (also in dry therms).