

March 8, 2012

**VIA HAND DELIVERY & ELECTRONIC MAIL**

Luly E. Massaro, Commission Clerk  
Rhode Island Public Utilities Commission  
89 Jefferson Boulevard  
Warwick, RI 02888

**RE: Long-Range Gas Supply Plan  
Forecast Period 2011/12 to 2015/16  
Docket No. \_\_\_\_\_**

Dear Ms. Massaro:

Enclosed are ten (10) copies of National Grid's<sup>1</sup> recently completed Long-Range Gas Supply Plan for the forecast period 2011/12 to 2015/16. During the most recent Gas Cost Recovery proceeding, the Company was directed to undertake and submit a new supply plan. The Company has engaged in discussions with the Division's consultant as it worked to produce the enclosed plan.

Thank you for your attention to this transmittal. If you have any questions, please feel free to contact me at (401) 784-7667.

Very truly yours,



Thomas R. Teehan

Enclosure

cc: Steve Scialabba, Division  
Leo Wold, Esq.

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<sup>1</sup> The Narragansett Electric Company d/b/a National Grid ("Company").

National Grid

The Narragansett Electric Company

**Gas Long-Range Resource  
and Requirements Plan  
Forecast Period  
2011/12 to 2015/16**

March 8, 2012

Docket No. \_\_\_\_\_

**Submitted to:**  
Rhode Island Public Utilities Commission

Submitted by:

**nationalgrid**

**Long-Range Resource and Requirements Plan (“Supply Plan”) of  
The Narragansett Electric Company  
d/b/a National Grid (or the “Company”)  
for the forecast period 2011/12 to 2015/16**

**March 8, 2012**

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## I. Introduction

This filing presents the Long-Range Resource and Requirements Plan (“Supply Plan”) for The Narragansett Electric Company d/b/a National Grid (the “Company”), for the forecast period November 1, 2011 through October 31, 2016. This filing is submitted to the Rhode Island Public Utilities Commission. The Company is a public utility under the provisions of R.I.G.L. §39-1-2 and provides natural gas sales and transportation service to approximately 250,000 residential and commercial customers in 37 cities and towns.

This Supply Plan is designed to demonstrate that the Company’s gas-resource planning process has resulted in a reliable resource portfolio to meet the combined forecasted needs of the Company’s Rhode Island customers at least cost. To make this demonstration, the Supply Plan presented herein includes: (i) a step-by-step description of the methodology the Company uses to forecast demand on its system; (ii) a discussion of how the Company develops its resource portfolio to meet customer requirements under design-weather conditions; and (iii) a complete inventory of the expected available resources in the Company’s portfolio and a demonstration of the adequacy of the portfolio to meet customer demands under a range of weather.

This filing addresses issues raised by the Rhode Island Division of Public Utilities and Carriers (“Division”) regarding the Company’s 2011/12 GCR Filing, filed in Docket No. 4283. In addition, this filing provides a review of the LNG System Pressure study that the Company agreed to perform as a result of Docket 4199. The study was performed to ensure that the calculation is appropriate, or whether changes are necessary to the system pressure calculation. There have been ongoing discussions between the Company and the Division as this report has been prepared. The study is represented in Section V of this filing.

## II. Overview of Planning Results

As described in detail in this filing, the Company's planning process is based on a comprehensive methodology for forecasting customer load requirements using a series of econometric models to determine the annual growth expected for residential heating, residential non-heating and commercial and industrial markets for both sales and transportation services. To determine the projected growth over the forecast period, the econometric models use historical economic, demographic and energy price data, as well as weather data to determine total energy demand. The Company then analyzed load reductions expected to be achieved through the implementation of its revised Energy Efficiency programs, because these reductions are exogenous to the demand forecast generated by the econometric models.

The results of the Company's demand forecast (Exhibit-1) indicates that, over the five-year forecast period, the residential heating market is projected to increase by an average of 120 BBtu per year, the residential non-heat market is projected to decline by an average of 20 BBtu per year and the commercial/industrial market is projected to grow by 2 BBtu per year. The Company projects that growth opportunities in non-traditional markets over the forecast period are reflected in the results of the econometric models, and it is not projecting any incremental growth in these markets beyond what it experienced in the historical period upon which these models are based.

As explained below, the Company's demand forecast is then converted to supply requirements at the Company's citygates. The end result of the forecasting process is projected sendout requirements increase over the forecast period averaging 322 BBtu (approximately 0.9 %) per year under normal weather conditions.

To ensure that the Company maintains adequate supplies in its portfolio to meet the projected customer load requirements, the next step in the planning process involves an analysis to define the design year and design day planning standards. The results of the analysis support the Company's determination to define a design year at 6,168 HDD with a probability of occurrence of 1 in 43.76 years and a design day at 66 HDD with a probability of occurrence of 1 in 40.69 years. Combining the results of the design planning standards definition and the load forecasting process, the Company is projecting design-year sendout requirements to increase over the forecast period by an average of 261 BBtu, or approximately 0.7 %, per year, and design day sendout to increase by an average of 3 BBtu, or 0.9 %, per year.

After the forecast of customer requirements are determined, the third step in the Company's planning process is to design a resource portfolio to meet those requirements in the most reliable and least cost manner possible. To that end, the Company uses the SENDOUT<sup>®</sup> Model (a proprietary linear programming model developed by Ventyx) to determine the adequacy of the existing portfolio in meeting the forecasted requirements and to identify any

shortfalls during the forecast period. SENDOUT<sup>®</sup> allows the Company to determine the least-cost, economic dispatch of its existing resources subject to contractual and operating constraints and identifies the need for, and type of additional resources during the forecast period, if any. To evaluate the flexibility and adequacy of the resource portfolio under a range of reasonably foreseeable conditions, the portfolio is assessed under design and normal weather conditions as well as a cold snap weather scenario. In the design weather scenario, the Company forecasts an average annual increase in sendout requirements under design conditions of approximately 3 BBTu per day for its design day. The Company's resource plan is sufficient to meet design-year load requirements throughout the forecast period.

For the cold-snap weather scenario, the Company used a 14-day cold snap occurring in the coldest 14-day period of the Company's normal year (9 January - 22 January) by evaluating January weather data from 1972 – 2011. The Company uses the results of the cold snap scenario to test the adequacy of inventories and refill requirements. The Company's resource plan shows that it has adequate resources available to meet cold snap sendout requirements in all years of the forecast.

Please note that communications regarding this Supply Plan should be directed as follows:

Thomas R. Teehan  
Senior Counsel  
The Narragansett Electric Company  
d/b/a National Grid  
280 Melrose Street  
Providence, RI 02907  
(401) 784-7667  
thomas.teehan@us.ngrid.com

As discussed briefly above, this document is organized into the following principal sections:

- Section III reviews the Company's econometric demand forecasting methodology and discusses the development of the forecast of customer sendout requirements;
- Section IV discusses the design of the resource portfolio, the expected available resources and the adequacy of the portfolio in terms of meeting forecasted customer requirements under design weather conditions;
- Section V contains a discussion of operational issues the Company would like to address and the Company's recommendations; and,
- Section VI contains the supporting tables for the filing.

The analysis presented in these sections demonstrates that the Company's planning process results in a reliable resource portfolio that is adequate to meet the forecasted needs of its customers at least cost.

## III. Forecast Methodology

### III.A. Introduction

The Company's forecast methodology supports its supply planning goal to ensure that it maintains sufficient supply deliverability in its resource portfolio to meet customers requirements on the coldest planning day ("design day") and that it maintains sufficient supply under contract and in storage (underground storage, LNG and propane) to meet customers requirements over the coldest planning year ("design year"). Each year, the Company employs the same process of preparing a five-year forecast in order to ensure that the portfolio has sufficient resources for the upcoming winter period, as well as sufficient time to contract for additional resources should they be required. Specifically, herein, "customer" is defined as those customers for whom the Company must make capacity planning decisions<sup>1</sup>.

The Company develops its underlying demand forecast from econometric models of its customer billing data. This data is available by month and by rate class. The Company models its daily resources and requirements with its SENDOUT<sup>®</sup> linear programming software modeling package, and hence it needs as input a forecast of daily customer requirements.

Accordingly, the Company developed the five-year forecast of customer requirements under design weather planning conditions using the following process:

1. Forecast Incremental Sendout

Incremental sendout is the additional sendout that the Company forecasts to occur over the five-year forecast period above the level established for an identified actual reference year (2010/11). The Company uses a series of econometric models to develop a forecast of incremental sendout for traditional markets (i.e., residential heating, residential non-heating, and commercial and industrial customers). The forecast of incremental sendout for traditional markets is summed to determine the total incremental sendout over the forecast period.

2. Develop Reference Year Sendout Using Regression Equations

The level of the Company's sendout in the reference year serves as the "springboard" to which incremental sendout is later added. Because actual sendout data for the reference year is a function of the weather conditions experienced in that year, the Company develops the "springboard" sendout using regression equations to normalize the sendout in the reference year based on normalized weather data.

3. Normalize Forecast of Customer Requirements

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<sup>1</sup>The Company plan for its sales and non-grandfathered transportation ("Customer Choice") customers.



Incremental sendout requirements are summed with the weather normalized reference-year, or springboard, sendout requirements to determine the Company's total normalized forecast of customer requirements over the five-year forecast period.

#### 4. Determine Design Weather Planning Standards

The Company performs an analysis to determine the appropriate design day and design year planning standards for the development of a least-cost reliable supply portfolio over the forecast period.

#### 5. Determine Customer Requirements Under Design Weather Conditions

Using the applicable design day and design year weather planning standards, the Company determines the design year sendout requirements and the design day (peak day) sendout requirements. These design sendout requirements establish the Company resource requirements over the forecast period.

Based on the forecast, the Company projects incremental customer requirements of **1,287** BBTus over the forecast period or **322** BBTus per year (assuming normal weather) (see **Chart IV-C-4**). Overall, this growth in firm sales represents a **3.8** percent total increase in sendout requirements over the forecast period, or **0.9** percent per year on average. The development of the Company's five-year forecast of customer sendout requirements, based on the steps set forth above is described in the following sections.

### ***III.B. Forecast of Customer Billing Data ("Demand Forecast")***

#### **III.B.1 Introduction**

The first step in the Company's forecasting methodology is the generation of its incremental demand forecast which is prepared through econometric/statistical modeling.

#### **III.B.2 Demand Forecast for Traditional Markets**

##### ***III.B.2.a Service Territory Specific Data Availability***

The Company used its monthly customer billing data (volume and number of customers) for the period January 2003 through February 2011 to define the dependent variables in its econometric models. The billing data was modeled at the rate class level for residential heat, residential non-heat, commercial/industrial heat, and commercial/industrial non-heat. Specifically, the table below lists the relevant customer classes and rate classes used in the Company's analysis.

<b>Customer Class</b>	<b>Rate Class</b>
Residential Heating	1247 & 1301
Residential Non Heating	1012 & 1101
Commercial/Industrial Heating	2107 C/I Small, 2221 Med FT-2, 2231 & 2237 Medium Sales, 3321 Large Low Load Factor FT-2, 3367 Large Low Load Factor, 33EN Large Low Load Factor FT-1, 3421 Extra-Large Low Load Factor FT-2, 3496 Extra-Large Low Load Factor Sales, 34EN Extra-Large Low Load Factor FT-1
Commercial/Industrial Non Heating	22EN Medium FT-1, 2367 Large High Load Factor Sales, 23EN Large High Load Factor FT-1, 2321 Large High Load Factor FT-2, 2496 Extra-Large High Load Factor Sales, 24EN Extra-Large High Load Factor Sales, 2421 Extra-Large High Load Factor FT-2

### **III.B.2.b Econometric Models**

With volume and customer data as identified above, the Company developed econometric models for the number of customers and use per customer (the quotient of the division of volume and number of customers) for each class. The Company's econometric modeling effort was to regress each of the two dependent variables against an array of possible independent variables and select the equation with the best fit.

By using historical economic, demographic and energy price data, listed in Exhibit 8, as the independent variables, the Company estimated statistically valid econometric equations for each class. The Company obtained the economic and demographic data from Moody's economy.com the forecasts for which were vintage February 2011.

Additionally, the Company tested: date as a time trend variable, actual Heating Degree Days, actual Billing Degree Days, as well as natural gas and oil prices from the Department Of Energy/Energy Information Administration ("DOE/EIA").

The Company did not reduce the results of its statistical forecast models to account for the incremental impact of the energy efficiency programs sponsored by the Company. The energy efficiency programs that the Company analyzed for this forecast were those submitted by the Company in Docket 4209 dated June 15, 2011, the most recent data available at the time the forecast was prepared. The Company would normally subtract any incremental savings from the programs that are not contained in the historical data used to derive the statistical models, because these savings are exogenous to the modeling effort. However, when the Company compared the historical amount of savings that these programs achieved in the past to the future goals of these programs for the residential and commercial sectors, it determined that the

projected savings were not greater than the past savings. Therefore, no incremental savings were subtracted from the model results to account for the impact of the Company's energy efficiency on the forecasted volumes.

### **III.B.3 Final econometric models for the Company's demand forecast**

#### **III.B.3.a Residential Heating Class**

The residential heating class represents approximately 50 percent of the Company's total firm throughput. The Company prepared the demand forecast for the residential heating class by developing separate econometric models for numbers of customers and use per customer. The Company multiplied the results of the econometric number of customer equations by the results of the corresponding econometric use per customer equations to calculate total sales in Dth. Lastly, it analyzed the estimated impact of the Company-sponsored Energy Efficiency programs and determined that no further adjustment was need to derive the annual net sales volumes.

Residential heating deliveries are forecast to increase by an average of 120 BBtu per year or 0.7% per year over the forecast period, 2011/12 through 2015/16. The forecast results for the residential heating class are presented in Exhibit\_1.

The specific models for the Residential Heating class are presented in the Appendix to this filing. There is a model for the Residential Heating Class (rate codes 1247 and 1301). Annual customer counts for the Residential Heating Class were modeled as a function of time trends. The monthly variation in customer counts was modeled using logistic functions that capture the seasonal decline in customer counts that occurs during the summer months and the subsequent increase during the winter months. The annual and monthly customer count models were then reconciled to produce the forecast of monthly customer counts through 2016.

Use-per-customer for the Residential Heating class was modeled as a function of degree days and gas prices. To capture the non-linear nature of the relationship between monthly use-per-customer and heating degree days, the Company included monthly dummy variables for February, May, June, November and December to correct for the linear nature of the regressions.

The results of the customer count forecasts and the use-per-customer forecasts were then multiplied together to derive the volume delivery forecast presented in Exhibit\_1.

#### **III.B.3.b Residential Non-Heating Class**

The residential non-heating class represents approximately 2 percent of the Company's total firm throughput. The Company prepared the demand forecast for the residential non-heating class by developing separate econometric models for numbers of customers and use per customer. The Company multiplied the results of the econometric equations for the number of customers by the results of the corresponding econometric equations for use per customer to calculate total sales. Lastly, it analyzed the estimated impact of the Company-sponsored Energy

Efficiency programs and determined that no further adjustment was need to derive the annual net sales volumes.

Residential non-heating throughput is forecast to decline by an average of 20 BBTu per year, or -3.7%, per year over the forecast period 2011/12 through 2015/16, due to the decreasing numbers of customers due largely to the conversion of non-heating customers to gas heat. The forecast results for the residential non heating class are presented in Exhibit\_1.

The specific models for the Residential Non Heating class are presented in the Appendix to this filing. There is a separate model for the Residential Non Heating Class (rate codes 1012 and 1101). Annual customer counts for the Residential Non Heating class were modeled as a function of time trends. The monthly variation in customer counts was modeled using logistic functions that capture the seasonal decline in customer counts that occurs during the summer months and the subsequent increase during the winter months. The annual and monthly customer count models were then reconciled to produce the forecast of monthly customer counts through 2016.

Use-per-customer for the Residential Non Heating class was modeled as a function of degree days and use-per-customer lagged. To capture the non-linear nature of the relationship between monthly use-per-customer and heating degree days, the Company included monthly dummy variables for February, March, April, June, July, August, September, October and November to correct for the linear nature of the regressions.

The results of the customer count forecasts and the use-per-customer forecasts were then multiplied together to derive the volume delivery forecast presented in Exhibit\_1.

### ***III.B.3.c Commercial/Industrial Heating Class***

The commercial/industrial heating class represents approximately 30 percent of the Company's total firm throughput. The Company prepared the demand forecast for the commercial/industrial heating class by developing separate econometric models for numbers of customers and use per customer. The Company multiplied the results of the econometric equations for number of customer by the results of the corresponding econometric equations for use per customer to calculate total sales. Lastly, it analyzed the estimated impact of the Company-sponsored Energy Efficiency programs and determined that no further adjustment was need to derive the annual net sales volumes.

Commercial/industrial heating class demand is forecast to decrease by an average of 16 BBTu per year or -0.1% per year over the forecast period 2011/12 through 2015/16. The forecast results for the commercial/industrial heating class are presented Exhibit1.

The specific models for the Commercial/Industrial Heating class are presented in the Appendix to this testimony. There are separate models for the Commercial Heating Class (rate codes 2107, 2221, 2231, 2237, 3321, 3367, 33EN, 3421, 3496, and 34EN). The customer counts are modeled as a function of time trends.

Use-per-customer for the Commercial/Industrial Heating Class was modeled as two

components. The first component captures base load, or non heating load, per customer; and the second component captures the heating load per customer. The base load use-per-customer models for the Commercial/Industrial Heating Class were developed on annual data as a function of square footage of retail space, employment, multifamily housing starts, time trends and the gas-to-oil price ratio. The heating load component of the model captures the long term trend in use per customer and the seasonal fluctuation of gas demand for this class. The Company modeled the annual trend in heating loads as a function of square footage of retail space, employment, natural gas prices and time trends. It should be noted that except for time trends, the same variables were not used for the base load and heating load models for a specific class. The Company modeled monthly heating load use-per-customer as a function of heating degree days. Then to capture the non-linear nature of the relationship between monthly use-per-customer and heating degree days, the Company calculated “alpha factors” that are modeled as the ratio of the fitted values of the regression equations to the actual values to correct for the linear nature of regressions.

The results of the customer count forecasts and the use-per-customer forecasts were then multiplied together to derive the volume delivery forecast presented in Exhibit\_1.

### ***III.B.3.d Commercial/Industrial Non Heating Class***

The commercial/industrial non heating class represents approximately 19 percent of the Company's total firm throughput. The Company prepared the demand forecast for the commercial/industrial non heating class by developing separate econometric models for numbers of customers and use per customer. The Company multiplied the results of the econometric equations for number of customer by the results of the corresponding econometric equations for use per customer to calculate total sales. Lastly, it analyzed the estimated impact of the Company-sponsored Energy Efficiency programs and determined that no further adjustment was need to derive the annual net sales volumes.

Commercial/industrial heating class demand is forecast to increase by an average of 17 BBtu per year or 0.3% per year over the forecast period 2011/12 through 2015/16. The forecast results for the commercial/industrial heating class are presented Exhibit\_1.

The specific models for the Commercial/Industrial Non Heating class are presented in the Appendix to this testimony. There are separate models for the Commercial Non Heating Classes (rate codes 22EN, 2367, 23EN, 2321, 2496, 24EN, 2421). Customer counts were modeled as a function of time trends.

Use-per-customer for the Commercial/Industrial Non Heating classes was modeled as a single component. Use-per-customer was modeled on annual data as a function of multifamily housing starts, population, disposable personal income, oil prices and time trends. Then the Company developed an algorithm to determine the relationship between monthly consumption and heating degree days for this class to allocate the forecasted annual use per customer to monthly use per customer.

The results of the customer count forecasts and the use-per-customer forecasts were then multiplied together to derive the volume delivery forecast presented in Exhibit\_1.

### ***III.C. Translation of Customer Demand into Customer Requirements***

#### **III.C.1 Regression Equation**

In the second step of the Company's forecasting methodology, the Company uses linear regression equations of total daily sendout versus daily temperature for the most recent twelve months to calculate a reference-year "springboard" by division. This serves as the most accurate way for the Company to allocate its monthly demand forecast into its future daily customer requirements. This step is used to determine the Company's normal year forecast of customer requirements over the forecast period for gas cost recovery purposes and to determine the Company design year forecast of customer requirements over the forecast period for resource planning purposes. To perform its regression analysis, the Company used version 2.14.0 of the R statistical software package<sup>2</sup>.

To establish normal-year springboard sendout requirements, the Company developed a linear-regression equation for each of its four divisions (Providence, Westerly, Bristol & Warren Gas, and Valley Gas) using data for the reference-year period April 1, 2010 through March 31, 2011. Its regression equation uses sendout as its dependent variable and temperature as its independent variable<sup>3</sup>.

Through the use of the linear-regression equation, the Company is able to normalize total daily sendout. Specifically, the actual daily firm sendout is regressed against heating degree day ("HDD") data as provided by its weather service vendor WSI, HDD data lagged over two days, and a weekend dummy variable. These data elements were selected for the regression analysis since these elements have been, and continue to be, the major explanatory variables underlying the Company's daily sendout requirements.

The Company selected the T.F. Green International Airport weather station (KPVD) as the source of the weather data that is used as the principal explanatory variable in its regression equations. The KPVD weather station was selected because it is close to the center of the Company's service territory, on a load-weighted basis, and it is highly correlated with surrounding weather stations. Specifically, the Company used the HDD value for each 24-hour period of 10 a.m. to 10 a.m., which constitutes the gas day and therefore corresponds to the same

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2 "R is a language and environment for statistical computing and graphics. It is a GNU project which is similar to the S language and environment which was developed at Bell Laboratories (formerly AT&T, now Lucent Technologies). R can be considered as a different implementation of S. There are some important differences, but much code written for S runs unaltered under R. R is available as Free Software under the terms of the Free Software Foundation's GNU General Public License in source code form. It compiles and runs on a wide variety of UNIX platforms and similar systems (including FreeBSD and Linux), Windows and MacOS." (Source: The R Project for Statistical Computing)

3 Sendout includes both Sales and supplier service ("Customer Choice") customer requirements.

daily time period of observation of the sendout data.

Based on its observations of the relationship between total sendout and HDD over the split years 2007/08 through 2010/11, the Company chose to develop its regression equation as a segmented model, a *"regression model where the relationships between the response and one or more explanatory variables are piecewise linear, namely represented by two or more straight lines connected at unknown values: these values are usually referred as breakpoints."* (Source: "segmented: an R package to fit regression models with broken-line relationships," R News, Volume 8/1, May 2008, page 20). Since a significant portion of the Company's sendout is due to spaceheating usage and spaceheating only occurs when average air temperatures fall below a certain level, the segmented model serves as an excellent starting point for modeling the relationship between sendout and HDD.

The results of regressing Providence total sendout vs. HDD alone over the split years 2007/08 through 2010/11, in the table below, show how significant temperature is as an explanatory variable for Company sendout at Providence as R<sup>2</sup> values over the period are at a stable level of 0.97.

<b>Split Year</b>	<b>Intercept</b>	<b>Slope1</b>	<b>Slope2</b>	<b>Standard Error</b>	<b>Adjusted R<sup>2</sup></b>	<b>Breakpoint HDD</b>
2007/08	35,474.3	1,301.5	2,626.7	7,876	0.9751	8.068
2008/09	35,264.5	1,549.2	2,370.4	7,771	0.9785	9.146
2009/10	34,951.1	1,782.0	2,462.7	7,532	0.9776	10.410
2010/11	33,967.1	1,199.2	3,111.9	8,357	0.9787	8.361

*Segmented Regression Results for Providence sendout vs. HDD*

In the table above, Intercept is the MMBtu sendout predicted at HDD=0, Slope1 is the MMBtu/HDD usage below the Breakpoint HDD level, Slope2 is the incremental MMBtu/HDD usage above the Breakpoint HDD level, the Standard Error is expressed in MMBtus, and the Breakpoint HDD is the HDD value at which spaceheating equipment is observed to turn on. The signs of the Slope1 and Slope2 coefficients (positive) imply that as temperatures get colder and HDD increases in value, then sendout will increase, which agrees with what the Company observes.

Based on observations of daily sendout, the Company has observed that weekday and weekend sendout requirements are different at similar HDD levels. Examining the average of the Providence 2007/08 through 2010/11 residuals by day of the week, see table below, the Company added a second independent variable, a weekday/weekend dummy variable set to zero for Mondays through Thursdays, 1 on Fridays and Sundays, and 2 on Saturdays.

<u>Day of the Week</u>	<u>Residual</u>
Monday	159
Tuesday	-189
Wednesday	54
Thursday	-24
Friday	-2,176
Saturday	-3,651
Sunday	-1,275

*Average Providence Residual by Day of the Week (MMBtu/day)*

The introduction of the second independent variable added an incremental improvement in the adjusted  $R^2$  of the equations. The table below lists the Providence regression results after adding the weekend dummy variable. The sign of the coefficient (negative) implies that there is a reduction in sendout on weekend days versus weekday days at similar temperatures, as has been observed by the Company.

<b>Split Year</b>	<b>Intercept</b>	<b>Slope1</b>	<b>Slope2</b>	<b>Weekend</b>	<b>Standard Error</b>	<b>Adjusted <math>R^2</math></b>	<b>Breakpoint HDD</b>
2007/08	36,723.2	1,335.2	2,602.3	-2,290.8	7,706	0.9762	8.212
2008/09	36,144.1	1,546.7	2,373.1	-1,486.2	7,705	0.9789	9.161
2009/10	35,644.5	1,777.2	2,477.3	-1,090.1	7,501	0.9779	10.500
2010/11	35,296.9	1,221.9	3,082.0	-2,407.7	8,181	0.9796	8.363

*Segmented Regression Results for Providence sendout vs. HDD and Weekend*

Finally, the Company has observed a correlation between lagged temperature and the residuals of the above equation and it investigated adding a third independent variable. Its three choices were: (1) the difference between HDD on day t and HDD on day t-1, (2) the difference between HDD on day t and mean of the HDD on day t-1 and day t-2, or (3) the difference between HDD on day t and the mean of the HDD on day t-1 and day t-2 and day t-3. The differences were used in lieu of the actual lagged values to avoid correlation among the independent variables. The Company chose option (2) as the optimal additional independent variable. The underlying theory of this analysis is that heating requirements increase as two consecutive days of cold weather occur, which cools down structures to a greater degree than would be experienced on a single day. The introduction of the third independent variable added another incremental improvement in the adjusted  $R^2$  of the equations.

The table below lists the Providence regression results after adding the lagged HDD-difference variable. The sign of the coefficient (negative) implies that, if a day is colder than the average of the previous two days, the increase in sendout will be somewhat lower than what would be forecast without the coefficient, and vice versa.



<b>Split Year</b>	<b>Intercept</b>	<b>Slope1</b>	<b>Slope2</b>	<b>Weekend</b>	<b>Lagged Delta HDD</b>	<b>Standard Error</b>	<b>Adjusted R<sup>2</sup></b>	<b>Breakpoint HDD</b>
2007/08	35,937.9	1,590.1	2,553.1	-2,214.7	-699.9	6,743	0.9819	10.130
2008/09	35,544.7	1,556.0	2,564.9	-1,638.9	-744.0	6,017	0.9872	10.160
2009/10	35,189.5	1,454.3	2,858.8	-1,244.4	-823.1	6,114	0.9854	9.059
2010/11	34,509.5	1,369.5	3,079.7	-2,453.5	-904.3	6,524	0.9871	9.174

*Segmented Regression Results for Providence sendout vs. HDD and Weekend and Lagged Delta HDD*

Similarly, below are tables listing the coefficients for the final regression equation form for the Company's Westerly, Bristol & Warren, and Valley divisions.

<b>Split Year</b>	<b>Intercept</b>	<b>Slope1</b>	<b>Slope2</b>	<b>Weekend</b>	<b>Lagged Delta HDD</b>	<b>Standard Error</b>	<b>Adjusted R<sup>2</sup></b>	<b>Breakpoint HDD</b>
2007/08	1,082.23	17.53	62.42	-189.34	-10.39	257	0.9203	11.820
2008/09	1,120.39	31.83	43.20	-254.50	-10.65	189	0.9544	17.580
2009/10	993.35	35.05	51.37	-239.11	-13.99	181	0.9638	14.130
2010/11	1,091.83	11.08	71.96	-199.77	-13.54	169	0.9727	10.060

*Segmented Regression Results for Westerly sendout vs. HDD and Weekend and Lagged Delta HDD*

<b>Split Year</b>	<b>Intercept</b>	<b>Slope1</b>	<b>Slope2</b>	<b>Weekend</b>	<b>Lagged Delta HDD</b>	<b>Standard Error</b>	<b>Adjusted R<sup>2</sup></b>	<b>Breakpoint HDD</b>
2007/08	961.31	64.65	94.83	-158.12	-29.40	293	0.9755	11.900
2008/09	928.02	64.56	99.66	-133.25	-34.89	289	0.9798	12.670
2009/10	721.79	62.87	121.24	-106.46	-35.73	324	0.9739	12.520
2010/11	892.66	57.89	71.34	-132.21	-23.26	210	0.9847	10.240

*Segmented Regression Results for Bristol & Warren sendout vs. HDD and Weekend and Lagged Delta HDD*

<b>Split Year</b>	<b>Intercept</b>	<b>Slope1</b>	<b>Slope2</b>	<b>Weekend</b>	<b>Lagged Delta HDD</b>	<b>Standard Error</b>	<b>Adjusted R<sup>2</sup></b>	<b>Breakpoint HDD</b>
2007/08	10,517.90	166.12	987.24	-1,400.58	-231.95	2,646	0.9604	9.569
2008/09	8,921.12	311.81	737.02	-1,273.67	-195.24	2,434	0.9663	10.770
2009/10	8,630.45	242.93	870.36	-1,045.30	-265.33	2,202	0.9710	8.549
2010/11	11,232.42	143.43	791.11	-1,490.77	-143.16	2,861	0.9460	8.145

*Segmented Regression Results for Valley sendout vs. HDD and Weekend and Lagged Delta HDD*

The tables above set forth the 2010/11 springboard regression coefficients for the Company's four divisions. The functional form of the equation, in pseudo code, is then:

$$\begin{aligned} \text{Sendout} = & \text{Intercept Coefficient} + \\ & \text{Weekend Dummy Coefficient} * \text{Weekend Dummy Variable} + \\ & \text{Slope1 Coefficient} * \min(\text{HDD}_t, \text{Breakpoint HDD}) + \\ & \text{if}(\text{HDD}_t \leq \text{Breakpoint HDD}) \{0\} \text{ else } \{(\text{Slope1 Coefficient} + \text{Slope2 Coefficient}) * (\text{HDD}_t - \\ & \quad \text{Breakpoint HDD})\} + \\ & \text{Lagged Delta HDD Coefficient} * (\text{HDD}_t - \text{average}(\text{HDD}_{t-1}, \text{HDD}_{t-2})) \end{aligned}$$

As seen above, the adjusted R-squared values for all 2010/11 regressions are all in the range of 0.94 to 0.98, and all of the t-statistics of the independent variables are greater than 2.0, indicating that these variables are significant to the explanatory power of the equation, with the exception of the 2010/11 Slope1 variable in the Valley division where it is 1.642.

This regression equation captures the observed characteristics of the Company's sendout requirements. The observed characteristics include the following: (1) sendout requirements are directly related to HDD; (2) sendout requirements are affected by HDDs that occur over a multi-day period; and (3) sendout requirements differ by day of the week. Thus, the Company has developed a reliable regression equation to establish the basis upon which future sendout requirements can be forecast. Using its forecast of load additions and an appropriate set of daily HDD values for a design year, the Company can successfully plan its operational requirements to provide a low-cost, adequate and reliable supply of natural gas to its customers.

### ***III.D. Normalized Forecast of Customer Requirements***

#### **III.D.1 Defining Normal Year for Ratemaking Purposes**

To establish the normal year's daily heating degree day ("HDD") data for ratemaking purposes, the Company calculated the average annual number of HDD for the T.F. Green International Airport ("KPVD") weather station for the ten-year period ending 31 December 2011, with an average of 5,458 HDD.

The Company then prepared a "Typical Meteorological Year" by selecting, for each calendar month, the month in the KPVD weather database that most closely approximated the ten-year average HDD and standard deviation for each month. A summary of the monthly averages for the KPVD weather site is listed in the chart below.

<u>Month</u>	<u>HDD</u>	<u>Standard Deviation</u>
Jan	1,099	9.2
Feb	936	8.3
Mar	796	7.0
Apr	453	6.7
May	227	5.3
Jun	44	3.2
Jul	1	0.2
Aug	1	0.2
Sep	52	2.2
Oct	339	7.1
Nov	579	7.2
<u>Dec</u>	<u>931</u>	6.9
Total	5,458	

*Average Monthly HDD and Average of Monthly Standard Deviations for the T.F. Green International Airport Weather Station*

### **III.D.2. Defining Load Attributed to Customers Using Utility Capacity**

Above, the Company established the springboard regression equations for total throughput in its service territory. Prior to developing its resource plan, certain volumes attributed to non-firm customers as well as customers not relying on utility interstate pipeline capacity need to be removed from the springboard volumes. Through analysis of its billing records, the Company identified the following volumes needing to be removed from the springboard volumes:

<u>Month</u>	<u>Normal Year</u>
Nov	745,550
Dec	751,368
Jan	728,902
Feb	721,725
Mar	754,571
Apr	702,213
May	639,622
Jun	646,396
Jul	682,092
Aug	608,321
Sep	594,827
<u>Oct</u>	<u>688,259</u>
Total	8,263,846

*Volumes Associated with Zero Capacity and Non-Firm Customers (MMBtu)*

In the third step of the Company's forecasting methodology set forth in Section III.A,

above, the Company aligns the 2010/11 reference-year sendout for customers using utility capacity, which is derived from the regression analysis, with the demand forecast discussed in the section above (using normal year HDD), to yield the forecast of customer requirements under normal weather conditions for its demand forecast.

	<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
Heating Season	20,893	21,411	21,168	21,077	21,393
<u>Non-Heating Season</u>	<u>8,217</u>	<u>8,058</u>	<u>7,990</u>	<u>8,010</u>	<u>8,228</u>
Total	29,110	29,469	29,158	29,087	29,620
Per-Annum Growth		358	-311	-71	533
Per-Annum Growth %		1.2%	-1.1%	-0.2%	1.8%

*Normal Year Customer Requirements (BBtu)*

### **III.E. Planning Standards**

In the fourth step of the Company's forecasting methodology, the Company determines the appropriate design-day and design-year planning standards to develop a least-cost reliable supply portfolio over the forecast period. The Company evaluated its design standards using two methodologies it applies in other New England jurisdictions: a two-standard-deviation method and a cost/benefit method.

#### **III.E.1 Normal Year for Standards Purposes**

Underlying the statistical analysis necessary to identify the appropriate design standards, the Company used recorded daily temperature values based on observations at the T.F. Green airport ("KPVD") weather site for the period January 1977 through December 2010. Specifically, the Company used maximum and minimum temperatures (in °F) observed at KPVD. This data was available from the National Weather Service and Weather Underground, Inc. Average daily temperatures (from 12 midnight to 12 midnight) were calculated and rounded to one decimal place of precision.

The Company then used a Monte Carlo simulation method to generate synthetic daily temperature values for Providence, RI for purposes of determining its normal year for planning standards purposes. The application of this Monte Carlo method provides the Company with a much larger time series of daily temperature values on which to base its standards.

Since it is important to model resource utilization using realistic weather scenarios, the Company could not directly take the mean of the 4,096 Monte Carlo values for each calendar day to define its normal year. The Company needed to design a "Typical Meteorological Year" which would be actual observed weather patterns that would, on average, represent the normally-expected year. From the Monte Carlo dataset, the Company calculated for each calendar month the mean monthly air temperature as well as the mean of the monthly standard deviations of the air temperature within each calendar month. It then referred back to the 34 years of actual data on record and, for each calendar month, it selected the month in the Providence, RI weather database that most closely approximated the average temperature and standard deviation for each

month. Since the actual values never exactly equaled the target monthly value, the Company then scaled the actual daily values by the ratio of the target mean temperature from its Monte Carlo analysis to the actual mean temperature for each month. Lastly, the Company's Typical Meteorological Year was converted from temperature to HDD for modeling purposes. The normal year is defined as 5,645.3 HDD (rounded to 5,645 HDD) with a standard deviation of 261.59 HDD. Within the normal year, the coldest expected day is 56.3 HDD with a standard deviation of 5.08 HDD.

The Company then prepared a "Typical Meteorological Year" by selecting, for each calendar month, the month in the KPVD weather database that most closely approximated the average HDD and standard deviation for each month.

### **III.E.2. Design Year and Design Day Planning Standards**

The Company's planning standards represent the defined weather conditions and consequent sendout requirement that must be met by the Company's resource portfolio. The Company's design year and design day standards are listed in the chart below.

<u>Element</u>	<u>Value</u>
Design Year HDD	6,168
Frequency of Occurrence	1 / 43.76 years
Design Day HDD	66
Frequency of Occurrence	1 / 40.69 years

#### *Design Year and Design Day Criteria*

Because the Company must demonstrate that there are adequate resources available to meet design conditions, while minimizing costs in a normal year, the Company periodically reassesses the appropriateness of these standards. As described below, the Company's analysis of the design year and design day standards demonstrate that these standards are appropriate.

#### **III.E.2.a. Design Day Standard**

##### **III.E.2.a.1 Design Day Statistical Analysis**

The purpose of a design day standard is to establish the amount of system-wide throughput (interstate pipeline and underground-storage capacity plus local supplemental capacity) that is required to maintain the integrity of the distribution system. In this filing, the Company defines its design day standard at 66 HDD with a probability of occurrence of once in 40.69 years, as a result of its on-going review of planning standards.

The Company established its design day standard using a three-step process. First, the Company performed a statistical analysis of the coldest days recorded over a historical period. Second, the Company conducted a cost-benefit analysis to evaluate the cost of maintaining the resources necessary to meet design day demand versus the cost to customers of experiencing

service curtailments. Third, the Company identified a design-day standard that would maintain reliability at the lowest cost.

From its Monte Carlo analysis of normal weather conditions, the Company had determined that the coldest expected day in a normal year is 56.3 HDD with a standard deviation of 5.08 HDD. Defining the design day using the two standard deviation method, one would add two times 5.08 HDD to the 56.3 HDD mean and define the design day as 66.46 HDD (rounded to 66 HDD).

### III.E.2.a.2 Design Day Cost/Benefit Analysis

The Company then examined the cost of potential customer curtailments through a cost-benefit analysis. **Chart III-E-1** shows the cumulative probability distribution and the frequency of occurrence of HDD levels greater than the mean peak day. **Chart III-E-1** also shows, given the current peak period heating coefficient of 5,514.19 MMBtus/HDD, the supply ("Delta Supply") required at these levels. The Company then translated these supply levels into the "Equivalent Number of Customers" that would be represented by a shortfall at a given HDD level<sup>4</sup>.

In the event of a service disruption, there are several types of damages that customers could experience. For example, the Company's residential customers would potentially incur re-light costs and freeze-up damages. The Company's commercial/industrial customers would potentially incur economic damages associated with the loss of production on the day of the event (which is further documented in Section III.E.2.b - Design Year Standard).

For this filing, the Company reexamined and updated the potential re-light costs for its moderately congested area building density. The re-lighting cost per establishment rises as the building density decreases to account for the increased time that is required to travel between establishments. The cost estimate for moderately congested areas was chosen as representative for the Company's planning standards, and for this filing the value is \$86.57/customer.

For this filing, the Company updated its 2008 cost estimate for freeze-up damages from Marsh & McLennan. According to Marsh & McLennan, in 2008, the average cost estimate of remodeling is \$20,000/customer. The Company applied the 2010 U.S. Construction Price Deflator to this value to arrive at a new figure of \$18,283/customer. The Company has made the assumption that, in the event of freeze-up damages, only a portion of a residence would require remodeling and the Company's analysis considers three levels of resulting damages: 25%, 50%, and 75%. Accordingly, the Company multiplied the freeze-up damages figure by two to represent the cost of a full remodel, so that the midpoint of the damages would align with the average cost estimate of \$18,283/customer.

Given the ratio of commercial/industrial ("C&I") customers to the total number of customers at year-end 2010, the Company divided the "Equivalent Number of Customers" into the number of residential and C&I customers. For the C&I customers, the Company computed

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<sup>4</sup> The Company determined the equivalent number of customers using the following formula:  $\text{Delta Supply} / [(\text{Heating Increment} / \text{Number of Customers}) * \text{HDD}]$ .

the cost of the service disruption by multiplying the ratio of affected customers by the total number of C&I customers by the estimated cost of one day's service disruption to the Company's entire group of C&I customers. Since the actual number of residential customers that would suffer freeze-up damage in a real emergency is unknown, the Company analyzed three levels of damages assuming 25 percent, 50 percent, and 75 percent of potentially affected residential customers suffer damages (as mentioned in the previous paragraph). The computed values for these three scenarios of probability-weighted costs of damages are presented in **Chart III-E-2** and are shown graphically in **Chart III-E-3**.

**Chart III-E-4** takes the HDD levels and the associated Delta Supply to estimate the costs associated with maintaining adequate deliverability at the HDD levels. The low-upgrade cost scenario is based on the cost of adding LNG vaporization capacity and the high-upgrade cost scenario is based on the cost of adding 365-day interstate pipeline service (with many other potential options falling in between). This is shown graphically in **Chart III-E-5**.

### **III.E.2.a.3 Design Day Selection**

In **Chart III-E-5**, the cost of maintaining adequate throughput capacity and the benefit of avoiding damage costs that would be incurred in relation to customer premises are compared. The intersection of the curves sets a range for design day planning purposes from approximately 62.7 to 69.5 HDD with a midpoint of 65.6 HDD, which the Company has rounded to an even integer value of 66 HDD for consistency in its planning methodology. **Chart III-E-1** indicates that the frequency of occurrence of the Company's design day standard is once in 40.69 years. It should be noted that the 66 HDD design day was observed on January 4th, 1981, the coldest day in the KPVD weather-site data from 1977 to the present.

### **III.E.2.b. Design Year Standard**

In this filing, the Company defines its design year standard as 6,168 HDD with a probability of occurrence of once in 43.76 years, as a result of its on-going review of planning standards.

The Company maintains a design year standard for planning purposes to identify the amount of seasonal supplies of natural gas that will be required to provide continuous service under all reasonable weather conditions. If the Company were to have a shortfall in supply during the winter season, the amount of supply in deficit can be translated into an equivalent number of customers whose service would be disrupted for more than one day. For a supply disruption of a multi-day duration, service would be curtailed on a priority basis and would likely fall on commercial and industrial establishments before affecting the residential sector, since supply to the residential sector is more likely to involve health and personal safety. To establish an estimated annual level of HDD, for which it should plan, the Company compared the benefit of maintaining an adequate quantity of natural gas supply under all reasonable weather conditions to the probability-weighted cost of losses that might occur if supplies are not adequate.

The Company has established its design-year standard using a three-step process. First, the Company performed a statistical analysis of annual HDD data recorded over a historical period. Second, the Company conducted a cost-benefit analysis to evaluate the cost of maintaining the resources necessary to meet design-year demand versus the cost to customers of experiencing service curtailments. Third, the Company identified a design-year standard that would maintain reliability at the lowest cost.

### **III.E.2.b.1 Design Year Statistical Analysis**

From its Monte Carlo analysis of normal weather conditions, the Company had determined that the normal year contains 5,645.3 HDD with a standard deviation of 261.59 HDD. Defining the design year using the two standard deviation method, one would add two times 261.59 HDD to the 5,645.3 HDD mean and define the design year as 6,168.48 HDD (rounded to 6,168 HDD).

### **III.E.2.b.2 Design Year Cost/Benefit Analysis**

To complete the second step in the development of the design-year standard, the Company performed a cost-benefit analysis by examining the cost of potential customer curtailments in relation to the cost of maintaining adequate supplies to meet the design-year standard. Because a failure to perform on a seasonal basis would mean that adequate supplies were not available to meet customer needs, the Company views the cost of failure to deliver as the economic penalty within the service territory associated with the need to curtail gas sales for a period of time. Service would be rationed among the Company's customers for a number of days in order to husband any remaining gas supplies. The Company estimated the potential losses based on the product of the potential economic cost per day of interruption, times the number of days of interruption.

To calculate this estimate of potential losses, the Company determined the average Gross State Product per day (GSP/day) for 2010 from data from the Bureau of Economic Analysis. The economic cost to the Company's customer base per day was then calculated on the basis of the total GSP/day. First, the value for the GSP/day for the Company's service territory was estimated by multiplying the GSP/day by the ratio of the number of employees within the service territory to the total number of employees within the state, based on 2010 employment estimates from Moody's. Then, the value for the GSP/day for the Company's customer base was estimated by multiplying the GSP/day figure for its service territory by the 2009 U.S. Census estimated market share of natural gas in relation to all fuel types in its service territory.

To determine the number of days of interruption that a supply shortfall would represent, the Company analyzed its supply requirements at various HDD levels, assigned requirements to supply sources and, using 5,645 HDD as the baseline, estimated when supply sources would be in deficit, as well as the quantity and duration of such deficit.

The Company established a baseline of the normal annual HDD (5,645) and then determined sendout requirements for the split year 2010/11 by assigning all sendout requirements below 182,863 MMBtus/day to pipeline supply; all requirements between 182,863 and 221,543 MMBtus/day to underground storage supplies; and all requirements above 221,543



MMBtus/day to supplemental resources. The Company then analyzed the sendout requirements for HDD levels of 5,645 to 6,945 on 100 HDD increments. The Company computed these HDD scenarios by multiplying each of the days of its normal HDD days by the ratio of the desired annual total to 5,645 HDD. Using the same method of assignment of supply sources, the Company determined the annual shortfalls by supply source (**Chart III-E-6**).

**Chart III-E-7** shows that the timing of when the shortfalls occur varies among the supply sources. Pipeline shortfalls occur late in the heating season when alternative supplies would be fairly easy to arrange. The underground storage and supplemental-resource shortfalls occur during the heating season when arranging alternative supplies would be more difficult. **Chart III-E-8** summarizes the HDD levels, the probabilities of occurrence and the shortfall by supply type.

Analysis indicates that sendout for the Company during the heating season is 61 percent residential and 39 percent commercial and industrial. Therefore, the total daily shortfall of underground storage and supplemental supplies at all HDD levels in this study can be assigned to C&I customers. For each forecast day under each HDD scenario, the daily sendout requirement was multiplied by 39 percent to derive the C&I portion. If the day had a supply shortfall, the shortfall value was divided by the C&I requirement to derive that day's fractional amount of the Company's C&I customers that would suffer curtailment. Summing all of these values for a given HDD scenario, the Company determined the total number of day-equivalents of interruption. This value is less than or equal to the number of calendar days during which interruption occurred since not all days will have 100 percent interruption. Multiplying the number of day-equivalents by the GSP/day for the C&I customer base yields an estimate of the economic damage that would occur. **Chart III-E-9** lists the HDD levels, the probabilities of occurrence, the days of interruption, the cost of the interruption, the probability-weighted cost of the interruption and the quantity of interrupted winter supply (underground storage and supplemental resources).

There are two damages scenarios presented here: one where 25 percent of the C&I establishments are actually affected, and one where 75 percent of the establishments are affected. **Chart III-E-9** also sets forth two scenarios of capacity that the Company acquires on behalf of its customers to avoid such damages (traditional short-haul capacity plus market-area storage and traditional long-haul capacity). **Chart III-E-10** demonstrates that a planning range of 6,005 to 6,215 HDD is appropriate.

### **III.E.2.b.3. Design Year Selection**

As a result of this analysis, the Company has determined that a current design year standard of 6,168 HDD is an appropriate level. **Chart III-E-8** indicates that the frequency of occurrence of the Company's design-year standard is once in 43.76 years.

### **III.E.2.c. Specification of Daily Design Year HDD**

To generate the daily HDD values for its design year, the Company scaled the daily values for its normal year by the ratio of the annual normal year total to the annual design year total, making any minor adjustment necessary to ensure the peak day of the design year equaled

the Company's design day standard.

### **III.F. Forecast of Design Year Customer Requirements**

In the fifth and final step of the Company's forecasting methodology set forth in Section III.A, above, the Company uses the applicable design day and design-year planning standards to determine the design day and design-year sendout requirements. To accomplish this, the Company combines the 2010/11 springboard equations, which is derived from the sendout regression analysis, with its normal year daily HDD pattern and its design year daily HDD pattern to yield two springboard year estimates of normal year and design year daily customer requirements. Below are the resulting design year requirements for the demand forecast.

	<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
Heating Season	23,752	24,364	24,101	24,003	24,366
<u>Non-Heating Season</u>	<u>8,854</u>	<u>8,688</u>	<u>8,619</u>	<u>8,652</u>	<u>8,871</u>
Total	32,606	33,052	32,719	32,655	33,237
Per-Annum Growth		446	-333	-64	582
Per-Annum Growth %		1.4%	-1.0%	-0.2%	1.8%

*Design Year Customer Requirements (BBtu)*

## IV. Design of the Resource Portfolio

### IV.A. Portfolio Design

To meet load requirements under design weather conditions, the Company maintains a resource portfolio consisting of pipeline transportation, underground storage, and supplemental resources. By resource type, the Company's currently available resources to meet deliverability requirements on the peak day are as follows:

	<b>Available Resources (Citygate quantity in Dth)</b>
Pipeline Transportation	182,866
Underground Storage	38,677
<u>On-System LNG</u>	<u>145,000</u>
<b>TOTAL</b>	<b>366,543</b>

Having established its forecast of design year customer requirements, the Company evaluates its existing resource portfolio to determine if it has adequate resources over the forecast period. As part of this evaluation, the Company reviews the possible strategies for meeting customer requirements using the existing resource portfolio in a variety of circumstances. Using the SENDOUT<sup>®</sup> model (described below), the Company is able to (1) determine the least-cost portfolio that will meet forecasted customer demand, and (2) test the sensitivity of the portfolio to key inputs and assumptions, as well as its ability to meet all of the Company's planning standards and contingencies. Based on the results of this analysis, the Company is able to make preliminary decisions on the adequacy of the resource portfolio and its ability to meet system requirements over the longer term.

Since 1996, the Company has been using the SENDOUT<sup>®</sup> model developed by New Energy Associates, now Ventyx, as its primary analytical tool in the portfolio design process. The SENDOUT<sup>®</sup> model is a linear-programming optimization software tool used to assist in evaluating, selecting and explaining long-term portfolio strategies. SENDOUT<sup>®</sup> has several advantages over previous models. For instance, there is no limit to the number of resources that can be defined. This allows the Company to model its resources more realistically and to receive more meaningful output. Second, the model allows the Company to examine the effect of various contracts on the total portfolio cost.

In that regard, the Company utilizes the SENDOUT<sup>®</sup> model to determine the best use of a given portfolio of supply, capacity and storage contracts to meet a specified demand. That is, it can solve for the dispatch of resources that minimizes the cost of serving the specified demand given the existing resource and system-operating constraints. The model dispatches resources based on the lowest variable cost to meet demand, assuming that demand charges are fixed.

## ***IV.B Analytical Process and Assumptions***

For the purpose of preparing this Long Range Plan filing, the Company analyzed a design year and a normal year demand scenario as described in Section III. In addition, the Company analyzed a cold-snap scenario using the Company's existing resource portfolio. The examination of these various scenarios enables the Company to test the adequacy and flexibility of the resource portfolio.

To perform the analysis of these three scenarios, the Company incorporated several key assumptions. First, the Company assumed that, throughout the forecast period, there is no change in the Company's service obligation to plan for the capacity requirements of firm customers.<sup>5</sup> Therefore, for the purposes of this filing the Company has included both Firm Sales and Firm Transportation customers that utilize the Company's firm capacity in the SENDOUT<sup>®</sup> model. Second, the Company's analysis assumes that all contracts expiring during the forecast period are renewed at the same cost and with the same operating characteristics.

## ***IV.C. Expected Available Resources***

This section describes the Company's current resource portfolio and discusses any modifications that the Company anticipates making to the portfolio during the forecast period to meet sendout requirements. As discussed below, to meet design day and design-year sendout requirements, the Company's resource portfolio is composed of the following categories of available resources: (1) transportation contracts; (2) underground storage contracts; (3) supplemental resources; (4) market area supply purchases; and, (5) gas commodity contracts. Chart IV-C-1 is a schematic of the Company's transportation and underground storage contracts effective November 1, 2011. Chart IV-C-2 is a table listing and description of the Company's resource portfolio.

### **IV.C.1 Transportation Contracts**

The Company has capacity entitlements on multiple upstream pipelines that allow for the delivery of gas to its citygates in Rhode Island. These contracts provide access to domestic production fields as well as liquid trading points that afford the Company a level of operational flexibility to ensure the least-cost dispatch and reliable delivery of gas supplies. In general, the

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5 The Narragansett Electric Company d/b/a National Grid, RIPUC NG-GAS No. 101, at Section 6 Transportation Terms and Conditions Schedule C, Sheet 4 Third Revision (November 1, 2009), 1.02.1 Firm Transportation. The tariff states Customers not subject to Default Transportation Service in Item 2.04 below, may return to sales service with at least thirty (30) days advance notice, subject to availability, in the Company's sole discretion, of adequate gas transmission, gas supply and/or gas storage capability, and subject to the Company's Transitional Sales Service Rate, Section 5 Schedule H, of the Commercial and Industrial Services.

Company's transportation agreements provide: (a) transportation to the Company's citygates for Gulf Coast, Market Area and Canadian supplies; (b) transportation for underground storage withdrawal and injections; and, (c) the flexibility to meet any balancing and no-notice requirements.

The Company's pipeline capacity contracts fall into three primary categories. First, the Company has contract entitlements to long-haul capacity that is used to transport gas from production areas in the Gulf of Mexico to underground storage facilities located in central Pennsylvania, New York and West Virginia and to the Company's Rhode Island city gates. Second, the Company has contract entitlements to short-haul capacity that is used to transport gas from the underground storage fields to the Company's Rhode Island city gates. These short-haul capacity entitlements are also used to ensure the deliverability of non-storage supplies to the Company's city gates, when the capacity is not being used to transport underground storage supplies. Third, the Company has entitlements to short-haul capacity that is used to transport gas sourced in Canada to the Company's Rhode Island city gates. The Company's transportation contracts are described below:

**Algonquin Gas Transmission Company:** The Company has total firm capacity entitlements of 152,705 MMBtus/day on the Algonquin Gas Transmission ("Algonquin") pipeline system. Because Algonquin is not directly connected with any production or underground storage area, the Company also holds firm capacity entitlements on interstate pipelines that interconnect with the Algonquin system upstream of the Company's distribution system.

**Columbia Gas Transmission, LLC:** The Company has total firm capacity entitlements of 50,000 MMBtus/day on the Columbia Gas Transmission, LLC ("Columbia") pipeline system. The Columbia system is a large network stretching from the Gulf Coast to the Midwest, Mid-Atlantic and Northeast. The Company's contracts provide for specific entitlements at four different points within the system which interconnect with other major pipelines. The receipt point at Maumee, Ohio (30,000 MMBtus/day) interconnects with Western supply, Broad Run, West Virginia (10,000 MMBtus/day) interconnects with Tennessee Gas Pipeline ("Tennessee"), Eagle, Pennsylvania (3,600 MMBtus/day) interconnects with Texas Eastern Transmission, L.P. ("Texas Eastern"), and Downingtown, Pennsylvania (3,855 MMBtus/day) interconnects with Transcontinental Gas Pipe Line Company ("Transco"). All of the Company's transportation contracts with Columbia deliver into the interconnection with Algonquin at Hanover, New Jersey.

**Dominion Transmission Incorporated:** The Company has total firm capacity entitlements of 7,922 MMBtus/day on the Dominion Transmission Incorporation ("Dominion") pipeline system. A portion (537 MMBtu/day) of the capacity originates at the interconnection with Texas Eastern at Oakford, Pennsylvania and delivers into Texas

Eastern at Leidy, Pennsylvania. The remaining capacity (7,385 MMBtu/day) originates at Dominion storage fields and delivers into either the M3 Market Area on Texas Eastern or into the Zone 4 Market Area at Ellisburg, Pennsylvania into Tennessee.

**Iroquois Gas Transmission System:** The Company has total firm capacity entitlements of 1,012 MMBtus/day on the Iroquois Gas Transmission (“Iroquois”) pipeline system. Firm supplies from Dawn, Ontario are transported via the Iroquois system from the interconnect at Waddington, New York to the Tennessee interconnect at Wright, New York.

**National Fuel Gas Supply Corporation:** The Company has total firm capacity entitlements of 1,177 MMBtus/day on the National Fuel Gas Company (“National Fuel”) pipeline system. This firm capacity is used to transport gas from the Texas Eastern interconnect at Bristoria, Pennsylvania to the interconnection with Transcontinental Gas Pipe Line Company (“Transco”) at Wharton, Pennsylvania.

**Tennessee Gas Pipeline:** The Company has total firm capacity entitlements of 68,838 MMBtus/day on the Tennessee Gas Pipeline (“Tennessee”) system to its citygates. Tennessee originates in the Gulf of Mexico on three separate pipeline segments: the 100 leg, the 800 leg, and the 500 leg. In addition, the Tennessee system is divided into six market Zones, from Zone 0 and Zone 1 in Texas and Louisiana where the three legs merge into the Tennessee mainline to Zone 6 in New England. The Company’s contract entitlements consist of transport volumes from Zone 0 and Zone 1 of up to 40,935 MMBtus/day to the Company’s citygates located in Zone 6 and to the Company’s storage fields located in Zone 4. From the Zone 4 storage market area, the Company’s contract entitlements consist of transport volumes of up to 10,836 MMBtu/days to the Company’s citygates. From the interconnect at Niagara in Zone 5, the Company’s contract entitlements transport volumes of up to 1,067 MMBtus/day to the Company’s citygates. From the interconnect at Wright, New York with Iroquois in Zone 5, the Company’s contract entitlements transport volumes of up to 1,000 MMBtus/day to the Company’s citygates. Finally, the Company has contract entitlements of up to 15,000 MMBtus/day from Dracut, Massachusetts located in Zone 6 to the Company’s citygates.

**Texas Eastern Transmission, L.P.:** The Company has total firm contract entitlements of 64,975 MMBtus/day of capacity directly connected to supply and storage areas on the Texas Eastern Transmission, L.P. pipeline system (“Texas Eastern”). Texas Eastern is a large network stretching from South Texas to New Jersey, comprised of a production area and a market area. The production area, south of Arkansas and Kosciusko, Mississippi, is divided into four access areas: South Texas (STX), East Texas (ETX), West Louisiana

(WLA) and East Louisiana (ELA). The Company's contracts provide for specific entitlements within and through each access area. The market area is divided into three market zones beginning with the access-area boundary: Arkansas-Mississippi, north to the Tennessee-Kentucky border and the Ohio River (M1), continuing north to the Pennsylvania – New York storage fields (M2), and from storage fields to the eastern terminus in New Jersey (M3). Contract entitlements are expressed in terms of these market zones. All of the Company's transportation contracts with Texas Eastern deliver into Texas Eastern Market Areas or the interconnection with Algonquin at either Lambertville or Hanover, New Jersey.

**TransCanada Pipeline Ltd.:** The Company has total firm capacity entitlements of 1,012 MMBtus/day on the TransCanada Pipeline ("TransCanada") system. The capacity path originates at the interconnection with Union Gas Limited ("Union") at Parkway, Ontario and delivers into Iroquois at Waddington, New York.

**Transcontinental Gas Pipe Line Company, LLC:** The Company has total firm capacity entitlements of 1,381 MMBtus/day on the Transcontinental Gas Pipe Line Company, LLC ("Transco") pipeline system. Because Transco is not directly connected to the Company's citygates, the Company holds firm capacity entitlements on Algonquin in order to deliver to the Company's citygates.

**Union Gas Limited:** The Company has total firm capacity entitlements of 1,025 MMBtus/day on the Union Gas ("Union") pipeline system. The capacity path originates at Dawn, Ontario and delivers into TransCanada at Parkway, Ontario.

## **IV.C.2 Underground Storage Services**

Underground storage capacity plays a critical role in the Company's ability to minimize costs. The Company's underground storage assets provide the Company with the ability to meet winter-season loads, while avoiding the expense of adding 365-day long-haul transportation capacity. Underground storage supplies also allow the Company to serve peak-period requirements with off-peak priced gas supply in order to manage minimum-take requirements and short-term fluctuations in demand. Furthermore, by using long-haul capacity to fill storage, the Company is able to use those resources at a high load factor. A summary of the Company's storage services are provided in the table below:

<u>Pipeline Company</u>	<u>Rate Schedule</u>	<u>MDWQ</u>	<u>MSQ</u>	<u>MDIQ</u>
Columbia	FSS Storage	2,545	203,957	2,545
Dominion	GSS-TE Storage	14,337	1,376,324	7,646
Dominion	GSS Storage	11,403	1,039,304	5,774
Tennessee	FS-MA Storage	21,169	815,343	5,436
Texas Eastern	SS-1 Storage	14,802	1,240,023	6,374
Texas Eastern	FSS-1 Storage	944	56,640	291
<b>TOTAL</b>		<b>65,200</b>	<b>4,731,591</b>	<b>28,066</b>

One underground storage service of note within the Company’s portfolio is its storage swing service under Rate Schedule Firm Storage Market Area (“FSMA”) on Tennessee. This storage swing option is designed to allow a daily imbalance tolerance that is equal to the Maximum Daily Withdrawal Quantity (“MDWQ”) as stated in the customer’s storage contract. The imbalance is treated as an automatic storage injection or withdrawal under the specific contract and assessed applicable charges under the FSMA contract. The Company has elected one of its firm storage contracts (“FSMA #501”) as a storage swing option. This swing option provides vital flexibility to the Company’s portfolio in order to manage daily fluctuations in load and avoid imbalance charges and/or penalties.

### **IV.C.3 Supplemental Resources**

In addition to interstate pipeline and underground storage resources, the Company utilizes peaking supplies to meet its design requirements. Peaking supplies are a critical component of the resource mix in that these supplies provide the Company with the ability to respond to fluctuations in weather, economics and other factors driving the Company’s sendout requirements. The Company utilizes both on-system and off-system supplemental resources to meet system needs.



### **IV.C.3.a On-System Peaking Resources**

On-system supplemental resources are local production plants that store LNG until vaporized. It is the Company's practice to have its supplemental storage facilities full as of November 1<sup>st</sup> of each year. The Company's on-system supplemental facilities are distributed strategically across the service territory, which enhances service reliability and provides a source of supply for the entire distribution system. Chart IV-C-3 shows the location of these facilities. Because these resources can be brought on line quickly, these plants can be used to meet hourly fluctuations in demand, maintain deliveries to customers and balance pressures across portions of the distribution system during periods of high demand. These supplemental volumes are the supplies that must be available to the Company's distribution system to ensure service to customers when the Company has exhausted its available pipeline supplies.

The Company's on-system supplemental resources are listed below:

<u>Location</u>	<u>Facility Type</u>	<u>Maximum Vaporization</u> <u>[MMBtu/day]</u>	<u>Storage Capacity</u> <u>[MMBtu]</u>
Providence	LNG	95,000	600,000
Exeter	LNG	18,000	202,000
Cumberland	LNG	32,000	86,000

The Company's forecasted need for on-system supplemental supplies over the maximum pipeline availability is 878 BBtu for the 2011/12 design year peak season (see Chart IV-C-4, Page 1, Design Year Heating Season).

### **IV.C.3.b Off-System Peaking Resources**

The availability of liquid natural gas to refill the Company's local storage tanks throughout the winter season is a reoccurring necessity. The Company's GDF SUEZ Gas NA LLC ("GDF SUEZ") NAESB contract is currently the primary source of LNG refill. The Company is currently in negotiations for the 2012 off peak season. In addition, as it has for the last several years, the Company has contracted for trucking arrangements in order to guarantee the availability of both trailers and drivers to truck the LNG from the source point to the Company's facilities throughout the year.

Off system supplemental resources include the Company's contracts with GDF SEUZ

listed in the following table:

<u>Contract</u>	<u>Description</u>	<u>MDQ</u> <u>(MMBtus)</u>	<u>ACQ</u> <u>(MMBtus)</u>
GDF SUEZ NAESB	Firm Liquid Service (Peak Season)	2,850	125,000
GDF SUEZ NAESB	Firm Liquid Service (Off-Peak Season)	TBD	TBD

#### **IV.C.4. Changes to the Resource Portfolio**

##### ***IV.C.4.a. TransCanada Pipelines Ltd. Conversion***

The Company's latest capacity change occurred on November 1, 2011 with the conversion of the Company's TransCanada long-haul capacity being replaced with the Union Gas Limited ("Union") and TransCanada Pipelines Limited ("TransCanada") short-haul pipeline capacity path. By converting the long-haul capacity to short-haul capacity, the Company saves its customers approximately \$500,000 a year in pipeline demand charges.

As discussed above in Section IV.C.1, the Company has total firm capacity entitlements of 1,025 MMBtus/day on the Union Gas pipeline system. The capacity path originates at Dawn, Ontario, Canada and delivers into TransCanada at Parkway, Ontario. In addition, the Company has firm capacity entitlements of 1,012 MMBtus/day on the TransCanada pipeline system. The capacity path originates at the interconnection with Union Gas at Parkway and delivers into Iroquois Gas Transmission ("Iroquois") at Waddington, New York. This supply is delivered to the Company's distribution system on Company's existing transportation contracts on the Iroquois and Tennessee Gas Pipeline ("Tennessee").

##### ***IV.C.4.b. Algonquin East-to-West Capacity Addition***

In November 2010, the Company added new Algonquin pipeline capacity from the East to West Project to its portfolio in order to serve a number of constrained areas on its distribution system. This project provides an incremental 10,000 MMBtu/day of pipeline capacity from the interconnection with the Maritimes system at Beverly, Massachusetts to various delivery points on the Algonquin E and G Laterals to the Company's distribution system. The project has improved reliability and reduced reliance on LNG facilities and trucking.

In addition, this project has provided several benefits to the Company's distribution

system in Rhode Island. The project has provided for incremental deliveries to four stations: Montville, Portsmouth, Tiverton, and Warren. Three of the four stations feed isolated and constrained areas that have limited supply options. The project has improved reliability on two of these systems through reduced reliance on LNG facilities and trucking. In Westerly, RI the project has allowed for elimination of a temporary LNG site and associated trucking which was previously established in the area to support winter operations. In Portsmouth, RI, the project, coupled with an on-system distribution project in the Portsmouth area, has significantly reduced reliance on the LNG site in the Newport Navy Yard and limited the need for trucking to the site to under the very coldest conditions. In Docket No. 4199, the Company's 2010 GCR filing, the Company identified that acquisition of the East-to-West capacity eliminated the need for six trucks of LNG in the design winter, five of which would be required on the design day. Under the severe cold snap conditions, it was forecast to eliminate nineteen trucks of LNG to Newport.

Overall, this project has improved reliability on these systems, as well as enabling continued customer growth on these isolated systems.

## **IV.C.5. Gas Commodity**

### ***IV.C.5.a. Natural Gas Portfolio Management Plan***

With the approval of the Natural Gas Portfolio Management Plan ("NGPMP") approved in Docket 4283, the Company in-sourced its gas portfolio functions. Under the NGPMP, the Company performs a calculation of the monthly and daily supply requirements for baseload and daily nominations. Then, the Company procures, schedules and optimizes the resource portfolio in order to minimize cost to its sales customers and maximize the value of the resource portfolio.

Each day, the Company nominates volumes for delivery to its Tennessee and Algonquin citygates as needed to meet its customer requirements. To meet this need, the Company elects from one or any combination of the following available resources:

- (1) Interstate Pipeline Transportation
- (2) Underground Storage
- (3) Supplemental Resources

In the winter season, every dispatch decision that the Company makes takes into account design-forward planning. Simply put, this means that from each day forward, the Company assumes it will experience design weather. Thus, preserving its limited resources (storage and LNG) in the event of design weather.

### ***IV.C.5.b. Asset Management Arrangements***

#### ***IV.C.5.b.1. TransCanada Pipeline Ltd.***

Following the conversion of the Company's TransCanada Gas Pipeline ("TCPL") long-haul to short-haul capacity, the Company issued a request for Proposal ("RFP") on September 23, 2011 for an Asset Management and Gas Supply Agreement ("AMA") effective November 1, 2011 for a term of one year. With the utilization of the SENDOUT® Model, the appropriate resource mix was determined to establish volume requirements for the term of the agreement.

Subject to satisfying the gas supply requirements associated with the AMA, the seller has the right to utilize and optimize the transportation agreement for its own account. In exchange for such right, the seller pays the Company an optimization fee. BG Energy Merchants, LLC ("BG") was awarded the bid to manage the assets and provide the Company with deliveries at the Canadian-US border at Waddington, New York. The Company then transports these volumes on Iroquois and Tennessee to the Company's citygates. This AMA provides the opportunity to extract value from temporarily-unused assets, subject to market conditions.

#### ***IV.C.5.b.2. East-to-West Capacity***

For the 2011/12 split year, the Company issued a Request for Proposal ("RFP") on September 13, 2011 for an Asset Management and Gas Supply Agreement ("AMA") effective November 1, 2011 for a term of one year. With the utilization of the SENDOUT® Model, the appropriate resource mix was determined to set both the baseload and swing volume requirements by month. The RFP was also structured such that it complied with the Federal Energy Regulatory Commission ("FERC") Order 712 requirements.

Subject to satisfying the gas supply requirements associated with the AMA, the seller has the right to utilize and optimize the transportation agreement for its own account. In exchange for such right, the seller pays the Company an optimization fee. BG Energy Merchants, LLC ("BG") was awarded the bid to provide the asset management services for the 2011/12 season. This AMA provides the opportunity to extract value from temporarily-unused assets, subject to market conditions.

### ***IV.C.6. Future Portfolio Decisions***

Changes in the Company's resource needs are caused by changes in its firm demand, (i.e., load growth, load loss and changes in load shape). The Company differentiates incremental and replacement resource needs primarily in terms of how a need arises. The need to increase (or

decrease) resources arises when the capacity of the Company's resource portfolio is not substantially equivalent to its firm demand requirements. A replacement resource need occurs when the term of an existing resource comes up for expiration and the Company's firm demand requirements are substantially the same (i.e., the resource is not avoidable). The Company applies the same decision-making process to meet replacement needs as it applies to incremental needs.

A critical component of identifying a resource need is defining the load shape of the demand that needs to be met. "Shape" refers to the degree of uniformity that a resource requirement exhibits throughout the course of a year. In characterizing the shape of resource needs, three general terms are applied herein: "baseload," "seasonal," and "peaking". A need that is substantially uniform throughout the year is described as a "baseload" need; a need that is driven by temperature fluctuations, and is therefore concentrated in a finite portion of the year (i.e. 60-180 days), is described as a "seasonal" need; a need that is observed at the very upper limits of the demand profile (i.e., the coldest days of the year) is described as a "peaking" need. The Company notes specific resource needs do not necessarily fall discretely into one of these categories, but rather can exhibit characteristics of any or all of these classifications.

Determining the shape of a need is also important in terms of narrowing the range of possible resource options that may be able to satisfy the need. Baseload needs for example, tend to be best met through pipeline supply options. On the other hand, 365-day pipeline resources tend to be less efficient in meeting seasonal needs because the fixed capacity charges become concentrated across a relatively short demand period, which drives the unit cost up. Conversely, resources that can be inventoried and dispatched in response to temperature variations (such as underground storage and LNG) tend to be cost-effective in meeting seasonal demands. Finally, peaking demands are likely to be best met by on-system LNG facilities because of the flexibility with which these resources can be dispatched.

When a resource need arises, the Company attempts to identify all of the possible resource options that may be able to meet that need. The Company maintains continuous contact with suppliers, pipelines operators and other service providers. The Company keeps a listing of service provider contacts and when appropriate will use this list of potential service providers to whom Requests for Proposals ("RFPs") will be sent. The RFP process effectively generates tailored service bids from potential service providers at market prices. The responses to an RFP establish the set or "universe," of potential resource options available to meet a particular need at a given point in time. The Company then performs a preliminary review to narrow the set down to an appropriate range for further analysis. This preliminary screening is dictated in part by the nature of the demand (i.e., the size and shape of the need) and by the planning time horizon. The time horizon is also an important element because the availability of specific resource alternatives may not perfectly coincide with the initial timing of an identified need. For example, an incremental seasonal need arising four years into the future may be met best by a storage option that will become available in three years if no other storage alternatives are available until the fifth year.

During the forecast period, the Company will be faced with critical decisions regarding the expiration of a significant number of its transportation, underground storage, off-system

peaking and gas commodity contracts in its portfolio. As of January 1, 2012, the following contracts require a decision within the five-year term of this plan:

- Thirty-eight (38) of the Company's fifty-one (51) transportation contracts;
- Seven (7) of the Company's eleven (11) underground storage contracts;
- The Company's one (1) off-system peaking contract; and
- All of the Company's gas commodity contracts

Following the Company's planning process described above, during the forecast period, the Company will employ a three-step analysis to reach its conclusions on contract renewals, as well as the addition of new resources. First, the Company will evaluate the need to maintain the contracts as part of the resource portfolio. As part of this need analysis, the Company will consider the trends in transportation migration and the growth in transportation relating to new customers that have not previously been served by the Company, and therefore, are not subject to the assignment of capacity. If the Company determines that the resource is needed to meet firm sendout requirements, the Company will consult with competitive suppliers serving customers on its system to solicit their input on the Company's contract renewals.

Second, depending on the type of need, the Company will canvas the marketplace to determine the availability of a replacement or new resource. And, where appropriate, the Company will solicit competitive bids to determine the lowest-cost available resource.

Finally, the Company will evaluate non-price factors associated with the available replacement or new resource option. The Company will consider the flexibility, diversity, reliability and contract term to determine the least-cost, most reliable option to meet the Company's resource need.

Absent the development of new incremental capacity projects or upgrades to on-system facilities that present cost-effective alternatives to the existing resource portfolio, the Company expects to renew its contracts for an extended time period to maintain flexibility, diversity and reliability consistent with least-cost principles. Because legacy transportation capacity is fully subscribed, the only opportunity for the Company to replace these needed resources would be in the event that new capacity is constructed providing the same, firm, primary delivery capacity that the Company has available through these legacy contracts. However, new capacity projects are rare and, in addition, during the past 5-10 years, the new pipeline projects that have been built in the region have marginal-cost-based rates for the associated incremental pipeline capacity. Marginal-cost-based rates are higher than the rates for legacy capacity on the interstate pipelines that deliver to the Company's service territory. Pipeline rates for legacy capacity are advantaged by the significant depreciation of plant and rate base associated with legacy capacity, as well as by revenue requirement recovery at average cost-based rates. Moreover, the respective interstate pipelines flow natural gas at higher load factors (with greater billing determinants), which helps to maintain the low rates associated with these pipelines.

#### **IV.C.7. Current and Future Supply and Capacity Projects**

During the forecast period, the Company will need to continue to monitor the Northeast market, in particular, the effects of the Marcellus Shale gas on the overall supply dynamic. The shale formation, which extends from West Virginia northeast through Pennsylvania into southern New York to the western boundary in Ohio and to the base of the Appalachian Mountains in Pennsylvania, has a reserve base estimated somewhere between 200 Tcf to 500 Tcf. It is anticipated that the ramp up in supply from Marcellus will take place over the next three to five years, just as the Company will need to make several of its portfolio decisions.

To date, there are a significant number of projects proposed to bring the Marcellus gas to market. Construction of gathering systems by producers is progressing, and once these are fully developed, the additional production will create more liquidity in the Marcellus shale basin. The Company's Rhode Island portfolio is well situated to take advantage of opportunities with a good balance of economically priced existing market-area transportation on existing short-haul capacity, as well as the ability to segment long haul capacity. As the new supply side options develop, the Company will continue to evaluate the portfolio for opportunities to reduce costs. The portfolio planning process must also consider the ability to access gas supply in a way that enhances the stability of prices to customers. Some supply sourcing options have proven to be vulnerable to severe price spikes during peak demand periods over the last few years. While the Gas Purchase Incentive Plan (GPIP) and storage inventories provide significant protection from such spikes, the effectiveness of the GPIP can be enhanced through modifications to the portfolio. For example, The Rockies Express Pipeline ("REX") and the Marcellus Shale are providing increased supply that is keeping natural gas prices down and compelling producers to sign on for pipeline projects to move their gas to markets in the northeast. In the near term, supply from the Gulf of Mexico (GOM) enhanced by shale plays such as the Eagle Ford and other midcontinent sales continues to remain price competitive with the emerging Marcellus and Rockies supply.

Forecasts for growth in US gas demand show increased demand through 2030 with supplies more than meeting expected demand. The Company relies on the Wood Mackenzie consulting firm as a resource for research and long term forecasting. The table below provides a snapshot of their views for the long term:

<i>Long-term forecasts for key data</i>	2010	2011	2012	2013	2014	2015	2020	2025	2030
US gas demand (bcfd)	66	65.7	66.1	67.2	68.9	70.4	78.1	83.9	88.3
US power sector gas demand (bcfd)	20.2	19.8	20.2	20.4	21.5	22.5	27.6	31.5	34.3
US gas production (bcfd)	59	60.4	60.1	61.3	63.3	64.8	72.9	79.6	86.5
US shale gas production (bcfd)	11.7	17.1	19.9	22.9	25.9	28.1	35.2	39	42.2
Canada net exports to the US (bcfd)	7	6.3	6.1	5.6	5.9	6.3	8	8.6	7
Mexico net imports from the US (bcfd)	0.8	1	1	1.1	1.3	1.6	2.3	2.8	3.4
US LNG net imports (bcfd)	1.1	0.8	0.9	1	1	0.9	-0.2	-1.4	-1.4
Henry Hub price (2010 \$/mmbtu)		4.65	5.06	5.44	5.36	5.53	6.01	6.38	6.91
Henry Hub price (nominal \$/mmbtu)		4.71	5.29	5.91	6.12	6.44	7.73	9.05	10.83
AECO price (2010 \$/mmbtu)		4.21	4.63	4.99	4.88	4.97	5.13	5.34	6.04

Source: Wood Mackenzie (North America Gas Service)

Wood Mackenzie's forecast, while not the only source the Company considers, is a representative of what many expect for Natural Gas in the US to look like in the future. There are two interesting things that Wood Mackenzie states:

1. Canadian sales will allow gas supply in the Western Canadian Sedimentary Basin to make a comeback to 2010 levels by 2017, which is better than most other predictions; and,
2. Marcellus shale production will reach 10 Bcf per day by 2020, a 23% increase over last year's prediction.

Without the addition of major infrastructure projects into the northeast, there are two paths for Marcellus gas to flow. Southeastern Pennsylvania and northern West Virginia have seen tremendous drilling activity in the Marcellus. Gas from this region competes for pipeline space with Rockies gas from Clarington and Lebanon, Ohio, as well as supply from the Gulf of Mexico and midcontinent plays. The only paths to the northeast from here are Dominion, National Fuel multi-leg paths, and Texas Eastern.

Incremental capacity from REX and southeastern Pennsylvania to the downstream market has been constructed on a limited basis. TETCO's TEAM III and TEMAX projects were completed in the second half of 2010 and the second half of 2011, respectively. The last piece of this project is the lateral from Texas Eastern at Mariette, Pennsylvania to Station 195 on the Transco mainline. This will add approximately 455 MDth per day of incremental capacity into Transco. Interconnections will allow any incremental supply from Ohio to flow.

The other current path for the Marcellus gas is from northeastern Pennsylvania. Drilling activity in this area has grown considerably. The best path out of this region is Tennessee's 300 leg. The Tennessee 300 leg is in good position to receive gas, but with limited deliverability capability into New England, the pipeline is looking at back haul options to Leidy in the near term. The Transco Leidy Line is also in a position to move Marcellus gas. Gathering systems are being built to bring supply to different locations along the pipe. Millennium Pipeline Company, LLC, ("Millennium") has several projects to bring Marcellus supply to the pipe that are scheduled for this year. The Company is evaluating all of these options.



All signs point to a large increase in supply in the northeast, which for now is exceeding demand growth. Supply in the short term has continued to grow at Leidy, Pennsylvania. Leidy has traditionally been a point that seemed to make sense as a liquid point (multiple pipelines, access to large amounts of underground storage, good takeaway capability). However, not many deals were done there and the Platts Gas Daily index was published irregularly. During the 2010/11 heating season, that started to change. From November 1 through the end of March, the Leidy Gas Daily index was published every day. Gas was available and, when it made economic sense, the Company purchased at Leidy for our New York portfolios. Recently, Platts Gas Daily/Inside FERC announced that they will bring back the Leidy monthly index. This is a sure sign in the rise of liquidity at Leidy.

The Company's views are the same as many others: gas supply will continue to be plentiful, prices will, in the short term, remain stable and the Company will make best efforts to optimize those supply opportunities to keep prices down for customers. However, the Company will keep existing pipeline capacity to ensure a diverse portfolio of assets so that customers will not be exposed to the risks of a blowout in price in one region.

As discussed earlier, Gulf of Mexico supplies augmented by shale gas from Texas and the midcontinent remained competitively priced with Marcellus and Rockies supplies. The Company will continue to monitor the relationship in price to see if these trends continue. When upstream contracts are due to expire, the Company will have more data to make the appropriate renewal decisions.

The Company will continue to maintain a diverse portfolio of assets that allow it to be in a position to purchase gas on a least cost basis. The Company will continue to evaluate the pipeline assets in its portfolio. As little as four years ago, most of the industry touted the need for local distribution companies to contract for capacity back to Clarington to secure Rockies supply. This proved not to be true. The Company's forecasted stable demand will allow it time to select projects that match up well with producers and bring supply to where it is needed on the its distribution system.

The Company remains committed to a diverse portfolio of assets and supplies and will continue to monitor the Marcellus supply and related pipeline transportation development, and it will participate when it make sense to do so.

#### **IV.C.8. Northeast Gas Supply and Infrastructure**

There have been a number of major supply and infrastructure additions that have gone into service in the Northeast since the Company's last filing in 2007. This trend is expected to continue and possibly accelerate over the forecast period.

The following projects providing additional gas and/or infrastructure to the Northeast have commenced service since the Company's last filing in 2007:

- Union/TransCanada Expansions from Dawn to Waddington (ANE II):

This project provided for gas supplies to be purchased at Dawn, Ontario and be transported on Union from Dawn to an interconnection with TransCanada at Parkway and then transported by TransCanada from Parkway to Waddington, New York. The capacity path originating at Dawn provided customers in the Northeast access to a liquid trading hub as well as access to underground storage fields and diverse supply sources including Western Canada, Rockies, Mid-Continent, Gulf Coast, and the Chicago hub. This project went into service in November 2006 with an initial volume of 181,000/dth per day. Similar expansion projects in 2007 and 2008, have increased the total volumes sourced Dawn up to almost 312,000 MMBtu/day.

- Tennessee ConneXion Project:

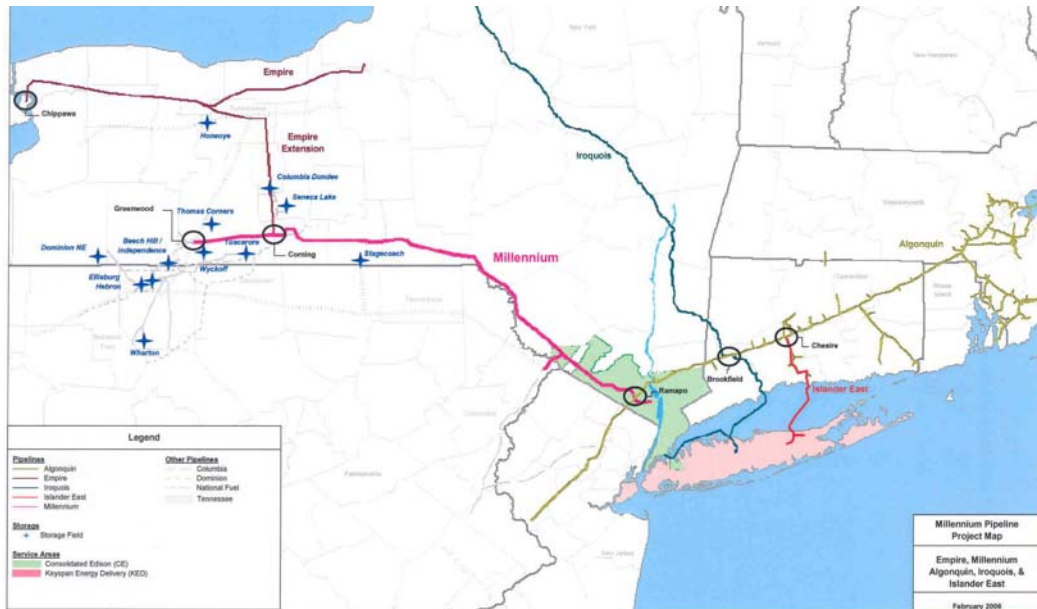
This project provided an incremental 136,300/dth per day transported on Tennessee from points in the Gulf of Mexico to various delivery points throughout New England, located in Zone 6. This project went into service in November 2007.

- Northeast Gateway:

This off-shore LNG facility operated by Excelerate Energy, and located offshore Cape Ann, MA, became fully operational in early 2008, receiving its first shipment of LNG in May. The facility is capable of delivering approximately 400,000 MMBtu/day into Algonquin's offshore HubLine system.

- Millennium Pipeline Company LLC:

This new pipeline commenced service in December 2008. The pipeline originates at the Independence interconnect with National Fuel and terminates at Ramapo, New Jersey at the interconnect with Algonquin and can move approximately 500,000 MMBtu/day. The original supply source was expected to be predominantly Canada; however Millennium also interconnects with Tennessee, Columbia, Empire State Pipeline and Stagecoach Storage. In addition, this pipeline well is positioned to access other Marcellus Shale supplies going forward. In fact, the Laser PA-NY Gathering Line is a project which gathers natural gas from wells tapping the Marcellus Shale formation to where it interconnects with Millennium to transport natural gas throughout the country. The first phase of the Susquehanna gathering system came into service during the fourth quarter of 2011. It consists of 39 miles of 16-inch pipeline from central Susquehanna County to Millennium in Broome County, New York. The second phase of the project began in the fourth quarter of 2011 and will continue throughout 2012. It consists of the Montrose Extension, nine miles of 16-inch pipeline from Phase 1 to the Tennessee interconnect.



- Maritimes and Northeast Pipeline Phase IV Project:

This project commenced service in January 2009. The project included five new compressor stations, two compressor station upgrades and two miles of 30-inch looping of pipe. The project provided an incremental 833,000 MMBtu/day of capacity delivered to the Dracut interconnect with Tennessee or the Beverly interconnect with Algonquin. Under a twenty-five year deal, Repsol contracted for 735,000 MMBtu/day of this capacity.

- Canaport LNG:

Owned and operated by Repsol and Irving Oil, this new LNG facility became operational in mid-2009. It is located roughly sixty miles from the Maine border in New Brunswick, Canada. The facility includes three storage tanks for storage for a total of 10 Bcf of on-site storage. The facility is capable of delivering up to 1.2 Bcf/day of gas into the Brunswick Pipeline (owned by Emera), which connects with the Maritimes & Northeast Pipeline. Gas is sourced principally from Trinidad. However, in 2010, Repsol signed a multiyear LNG agreement with Qatargas. The new LNG supply from Qatar strengthens Repsol position in the Canadian and Northeast US markets.



## ***IV.D. Adequacy of the Resource Portfolio***

### **IV.D.1. The Design Year Forecast**

As demonstrated in Chart IV-C-4, the Company's resource plan is sufficient to meet the forecasted design-year load requirements throughout the forecast period.

For the design days, the Company's forecast demonstrates that it relies on its pipeline and underground storage transportation contracts to meet the bulk of its customer requirements. LNG serves as the swing supply. The forecast shows that the Company would use between 105 and 115 BBtu of its 145 BBtu/day vaporization capacity to meet supply requirements. The additional vaporization capacity allows the Company flexibility in dispatching additional LNG if price-advantageous as well as providing reliability and diversity to its supply portfolio.

Over the design heating season, the Company's forecasted customer requirements over and above its total citygate deliverability ranges between 400 and 550 BBtu/year which needs to be met by LNG resources, while the total LNG storage capacity is currently 888 BBtu. By division, the Company requires more LNG in its Valley division than the capacity of the Valley LNG facility in Cumberland, RI. To provide for LNG supply needs and manage its boil-off losses, it has acquired its peak period LNG contract with GDF-Suez and associated LNG trucking. This liquid contract provides flexibility to refill storage at any of the Company's LNG facilities. The Company's Providence division has adequate LNG storage capacity to meet forecasted requirements. However, the Company's design winter weather is only one of many possible weather scenarios which could occur and therefore the flexibility in its LNG resources has great value. Having an asset like LNG under the Company's control, readily dispatchable, and located in the Company's service territory provides reliability and diversity to the entire Company resource portfolio.

### **IV.D.2. Cold Snap Analysis**

In addition to the design-year, design-day and normal-year planning standards, the Company also evaluates the capability of the resource portfolio to meet sendout requirements during a protracted period of very cold weather, which is referred to as a "cold snap." The cold snap evaluation is performed by modeling daily sendout and observing the predicted resource usage over a specified set of HDD. For its current filing, the Company has used a 14-day cold snap occurring in the coldest 14-day period of the Company's normal year (9 Jan - 22 Jan) to test the adequacy of inventories and refill requirements.

From the evaluation of January weather data from 1972 - 2011, the mean total HDD for the period 8 Jan - 21 Jan is 520 HDD with a standard deviation of 92.7 HDD. Selecting a test value of the mean plus 2.06 times the standard deviation for a once-in-50 year occurrence yields

a 14-day cold snap total of 711 HDD, just 7 HDD less than the Jan 1982 figure of 718 HDD. For its current cold snap HDD pattern, the Company took the HDD data for 9 Jan - 22 Jan 1982, removing 7 HDD from the actual data to arrive at its cold snap weather pattern. The Company then assumed normal weather up until 9 Jan, followed by the cold snap period data, then followed by normal weather after the cold snap interval.

The results of the simulation using the SENDOUT<sup>®</sup> model, found in Chart IV-C-4, show that the Company's portfolio can meet the cold snap requirement in all years of the forecast without additional resources, and therefore, is adequate to meet sustained, cold weather in each year of the forecast.

For the cold snap year, the Company's forecasted customer requirements over and above its total citygate deliverability ranges between 740 and 860 BBtu/year which needs to be met with LNG resources while the total LNG storage capacity is currently 888 BBtu. With the addition of the Company's peak period LNG liquid contract, the Company has sufficient liquid to meet customer requirements and the associated boil-off.

## **V. Gas Resource Portfolio Recommendations**

### ***V.A. Customer Choice Program***

#### **V.A.1. Background**

The Company is responsible for planning its gas supply portfolio in order to serve customer requirements for all firm customers, both sales and transportation, with the exception of those customers who are grandfathered and not required to take mandatory assignment of capacity. Thus, the Company must plan for firm sales customers, FT-1 and FT-2 transportation customers.

Under the Company's Customer Choice Program, marketers are required to accept mandatory capacity assignment on behalf of customers. FT-1 customers are assigned an allocation of their peak day usage of pipeline assets only, whereas FT-2 customers are assigned an allocation of their peak day usage, including pipeline, storage and peaking assets.

In the Company's Gas Cost Recovery ("GCR") filing each year, the Company attempts to account for customer choice migration by subtracting the load associated with FT-1 and FT-2 customers, while also reflecting the capacity that has been released to marketers as of a certain point in time. By eliminating the load and capacity, the GCR rates can then be calculated for remaining sales customers only. While this process has worked successfully in the past, as more customers migrate to transportation, it has become apparent that there is a disconnect between the Company's resource requirements for which it needs to plan and the way the cost of those resources are recovered through its GCR. The disconnect is a direct result of the manipulation of

the GCR calculations in the attempt to exclude customer choice activity. The entire FT-1 load is excluded, yet these customers are only released a portion of their peak day usage made up of pipeline assets.

## V.A.2. Company Recommendations

First, the Company would recommend a review of the Customer Choice program to determine the need for any adjustments to the overall program. Also, the Company would recommend a review of the current GCR Filing Requirements for consideration of the need for any adjustments to the filing.

## V.B. LNG Pressure Factor and the Allocation of LNG Costs

### V.B.1. Background

In the Company’s 2011/12 Distribution Adjustment Charge (“DAC”) filing, the Company proposed an updated factor for the allocation of LNG costs to the DAC (see table below).

<b>LNG REQUIREMENTS FOR PEAK-HOUR PRESSURE SUPPORT IN RHODE ISLAND</b>		
<b>2010-11 Total Utility &amp; Non-Utility Customer System Sendout (68 HDD) = 18,820 Dth/hr</b>		
<b>LNG Facility</b>	<b>Vaporization Capacity (Dth/hr)</b>	<b>LNG Required for Pressure Support (Dth/hr)</b>
Cumberland (Scott Rd)	1,333	0
Providence (Allen's Av)	6,000	2,999
Exeter	750	411
Portsmouth (Navy Base)	325	0
<b>Total</b>	<b>8,408</b>	<b>3,410</b>
<b>LNG Component of Total Peak-Hour Sendout</b>		<b>18.12%</b>

**Notes:**

1. The analysis is based on the July 2010 Gas Supply Utility Customer Sendout Forecast for the 2010-11 Heating Season (68 Heating Degree Day) and the projected usage for Non-Utility customers.
2. The analysis does not take into account LNG that is needed for gas supply purposes.
3. In the analysis, LNG was utilized to just maintain a 10 psig differential at the Allen's Ave 99 psig regulators in Providence and the Waites Corner 35 psig regulator in South Kingstown.
4. While the LNG vaporization capacity at Providence is 6,000 dth/hr, the National Grid contract amount is only 3,958 dth/hr.

The Division was not satisfied with the results of the new factor for the long-term and wanted to further examine those results.

## **V.B.2. Company Recommendation**

The Company would recommend a discussion to determine the appropriate LNG Factor in the context of this filing with the objective of finalizing a decision for implementation in the Company's 2012/13 DAC filing.



**Narragansett Electric Company d/b/a NATIONAL GRID**  
**Plan-Year Forecasted Gas Deliveries by Rate Class in Dth (2012 - 2016)**

	2012	2013	2014	2015	2016
Residential non-heat (1012)	553,212	532,644	510,884	494,969	475,959
Residential non-heat Low Income (1101)	18,054	18,079	17,056	16,521	15,934
Residential heat (1247)	15,224,854	15,301,102	15,177,877	15,270,804	15,597,259
Residential heat Low Income (1301)	1,761,730	1,875,748	1,805,162	1,825,568	1,868,843
C & I small (2107)	2,384,514	2,466,997	2,515,942	2,515,959	2,523,717
C & I medium sales (2237+2231)	3,120,859	3,162,177	3,112,343	3,108,379	3,115,510
C & I medium FT-1 (22EN)	797,546	810,046	742,289	717,552	715,055
C & I medium FT-2 (2221)	1,184,118	1,288,364	1,352,932	1,382,278	1,438,806
LLF large sales (3367)	662,747	698,401	769,437	822,037	863,212
LLF large FT-1 (33EN)	1,062,354	979,716	918,748	876,785	852,057
LLF large FT-2 (3321)	940,010	947,757	842,965	797,225	787,186
HLF large sales (2367)	270,540	275,867	278,908	279,303	279,405
HLF large FT-1 (23EN)	555,657	646,592	638,657	653,586	665,217
HLF large FT-2 (2321)	270,279	309,564	314,486	321,062	323,985
LLF XL sales (3496)	46,558	38,220	36,957	41,480	40,980
LLF XL FT-1 (34EN)	792,740	700,312	636,900	551,528	514,891
LLF XL FT-2 (3421)	95,105	120,179	90,109	82,486	89,934
HLF XL sales (2496)	177,492	181,248	183,182	179,954	184,506
HLF XL FT-1 (24EN)	4,086,277	3,980,270	4,003,238	4,013,962	4,023,420
HLF XL FT-2 (2421)	185,415	205,698	219,569	219,018	221,186
<b>Total</b>	<b>34,190,063</b>	<b>34,538,981</b>	<b>34,167,640</b>	<b>34,170,454</b>	<b>34,597,062</b>

						% of 2012
						<b>TOTAL</b>
Residential Non-Heat	571,267	550,723	527,940	511,490	491,893	2%
Residential Heating	16,986,584	17,176,850	16,983,040	17,096,372	17,466,102	50%
C&I Non-Heat	6,343,205	6,409,285	6,380,328	6,384,436	6,412,775	19%
C&I Heating	10,289,006	10,402,122	10,276,332	10,178,156	10,226,293	30%
<b>Total</b>	<b>34,190,063</b>	<b>34,538,981</b>	<b>34,167,640</b>	<b>34,170,454</b>	<b>34,597,062</b>	<b>100%</b>

Annual Change					
Residential Non-Heat		(20,543)	(22,783)	(16,451)	(19,597)
Residential Heating		190,266	(193,810)	113,333	369,730
C&I Non-Heat		66,080	(28,957)	4,108	28,339
C&I Heating		113,116	(125,790)	(98,176)	48,137
<b>Total</b>		<b>348,918</b>	<b>(371,340)</b>	<b>2,814</b>	<b>426,608</b>

Average Annual Change					
Residential Non-Heat					(19,844)
Residential Heating					119,879
C&I Non-Heat					17,392
C&I Heating					(15,678)
<b>Total</b>					<b>101,750</b>

Annual Percentage Change					
Residential Non-Heat		-3.6%	-4.1%	-3.1%	-3.8%
Residential Heating		1.1%	-1.1%	0.7%	2.2%
C&I Non-Heat		1.0%	-0.5%	0.1%	0.4%
C&I Heating		1.1%	-1.2%	-1.0%	0.5%
<b>Total</b>		<b>1.0%</b>	<b>-1.1%</b>	<b>0.0%</b>	<b>1.2%</b>

Average Annual Percentage Change					
Residential Non-Heat					-3.7%
Residential Heating					0.7%
C&I Non-Heat					0.3%
C&I Heating					-0.1%
<b>Total</b>					<b>0.3%</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**Fiscal-Year-End Forecasted Number of Customers by Rate Class (2012 - 2016)**

	2012	2013	2014	2015	2016
Residential non-heat (1012)	25,820	24,906	23,996	23,080	22,162
Residential non-heat Low Income (1101)	333	322	310	298	286
Residential heat (1247)	178,348	179,934	181,518	183,106	184,698
Residential heat Low Income (1301)	20,971	21,157	21,344	21,530	21,717
C & I small (2107)	18,204	18,205	18,192	18,159	18,135
C & I medium sales (2237+2231)	2,838	2,832	2,831	2,830	2,830
C & I medium FT-1 (22EN)	429	431	432	434	436
C & I medium FT-2 (2221)	1,022	1,032	1,037	1,041	1,046
LLF large sales (3367)	126	126	126	126	126
LLF large FT-1 (33EN)	149	149	150	151	152
LLF large FT-2 (3321)	133	135	136	137	138
HLF large sales (2367)	46	46	46	46	45
HLF large FT-1 (23EN)	68	69	69	69	69
HLF large FT-2 (2321)	44	44	44	44	44
LLF XL sales (3496)	2	2	2	2	2
LLF XL FT-1 (34EN)	24	24	24	24	24
LLF XL FT-2 (3421)	5	5	5	5	5
HLF XL sales (2496)	6	6	6	6	6
HLF XL FT-1 (24EN)	50	50	50	50	50
HLF XL FT-2 (2421)	8	8	8	8	8
<b>Total</b>	<b>248,626</b>	<b>249,483</b>	<b>250,326</b>	<b>251,146</b>	<b>251,979</b>
Residential Non-Heat	26,153	25,228	24,306	23,378	22,448
Residential Heating	199,319	201,091	202,862	204,636	206,415
C&I Non-Heat	651	654	655	657	658
C&I Heating	22,503	22,510	22,503	22,475	22,458
<b>Total</b>	<b>248,626</b>	<b>249,483</b>	<b>250,326</b>	<b>251,146</b>	<b>251,979</b>
Annual Change					
Residential Non-Heat		(925)	(922)	(928)	(930)
Residential Heating		1,772	1,771	1,774	1,779
C&I Non-Heat		3	1	2	1
C&I Heating		7	(7)	(28)	(17)
<b>Total</b>		<b>857</b>	<b>843</b>	<b>820</b>	<b>833</b>
Average Annual Change					
Residential Non-Heat					(926)
Residential Heating					1,774
C&I Non-Heat					2
C&I Heating					(11)
<b>Total</b>					<b>838</b>
Annual Percentage Change					
Residential Non-Heat		-3.5%	-3.7%	-3.8%	-4.0%
Residential Heating		0.9%	0.9%	0.9%	0.9%
C&I Non-Heat		0.5%	0.2%	0.3%	0.2%
C&I Heating		0.0%	0.0%	-0.1%	-0.1%
<b>Total</b>		<b>0.3%</b>	<b>0.3%</b>	<b>0.3%</b>	<b>0.3%</b>
Average Annual Percentage Change					
Residential Non-Heat					-3.7%
Residential Heating					0.9%
C&I Non-Heat					0.3%
C&I Heating					-0.1%
<b>Total</b>					<b>0.3%</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**Fiscal-Year-End Forecasted Use Per Customer by Rate Class (2012 - 2016)**  
**(Dth/customer)**

	2012	2013	2014	2015	2016
Residential non-heat (1012)	21.43	21.39	21.29	21.45	21.48
Residential non-heat Low Income (1101)	54.17	56.23	55.06	55.45	55.70
Residential heat (1247)	85.37	85.04	83.62	83.40	84.45
Residential heat Low Income (1301)	84.01	88.66	84.58	84.79	86.05
C & I small (2107)	130.99	135.51	138.30	138.55	139.16
C & I medium sales (2237+2231)	1,099.67	1,116.59	1,099.38	1,098.37	1,100.89
C & I medium FT-1 (22EN)	1,859.08	1,879.46	1,718.26	1,653.34	1,640.04
C & I medium FT-2 (2221)	1,158.63	1,248.41	1,304.66	1,327.84	1,375.53
LLF large sales (3367)	5,259.90	5,542.86	6,106.64	6,524.10	6,850.89
LLF large FT-1 (33EN)	7,129.89	6,575.27	6,124.99	5,806.52	5,605.64
LLF large FT-2 (3321)	7,067.75	7,020.43	6,198.27	5,819.16	5,704.25
HLF large sales (2367)	5,881.31	5,997.10	6,063.21	6,071.80	6,209.01
HLF large FT-1 (23EN)	8,171.43	9,370.89	9,255.90	9,472.26	9,640.83
HLF large FT-2 (2321)	6,142.71	7,035.55	7,147.40	7,296.87	7,363.30
LLF XL sales (3496)	23,279.11	19,109.88	18,478.60	20,739.84	20,489.76
LLF XL FT-1 (34EN)	33,030.85	29,179.65	26,537.50	22,980.32	21,453.81
LLF XL FT-2 (3421)	19,020.91	24,035.81	18,021.79	16,497.23	17,986.78
HLF XL sales (2496)	29,581.96	30,208.02	30,530.37	29,992.28	30,750.96
HLF XL FT-1 (24EN)	81,725.54	79,605.40	80,064.76	80,279.23	80,468.40
HLF XL FT-2 (2421)	23,176.84	25,712.31	27,446.15	27,377.30	27,648.19
<b>Total</b>	<b>137.52</b>	<b>138.44</b>	<b>136.49</b>	<b>136.06</b>	<b>137.30</b>
Residential Non-Heat	21.84	21.83	21.72	21.88	21.91
Residential Heating	85.22	85.42	83.72	83.55	84.62
C&I Non-Heat	9,743.79	9,800.13	9,740.96	9,717.56	9,745.86
C&I Heating	457.23	462.11	456.66	452.87	455.35
<b>Total</b>	<b>137.52</b>	<b>138.44</b>	<b>136.49</b>	<b>136.06</b>	<b>137.30</b>
Annual Change					
Residential Non-Heat		(0.01)	(0.11)	0.16	0.03
Residential Heating		0.20	(1.70)	(0.17)	1.07
C&I Non-Heat		56.34	(59.17)	(23.40)	28.30
C&I Heating		4.88	(5.45)	(3.80)	2.49
<b>Total</b>		<b>0.93</b>	<b>(1.95)</b>	<b>(0.43)</b>	<b>1.24</b>
Average Annual Change					
Residential Non-Heat					0.02
Residential Heating					(0.15)
C&I Non-Heat					0.52
C&I Heating					(0.47)
<b>Total</b>					<b>(0.05)</b>
Annual Percentage Change					
Residential Non-Heat		-0.1%	-0.5%	0.7%	0.2%
Residential Heating		0.2%	-2.0%	-0.2%	1.3%
C&I Non-Heat		0.6%	-0.6%	-0.2%	0.3%
C&I Heating		1.1%	-1.2%	-0.8%	0.5%
<b>Total</b>		<b>0.7%</b>	<b>-1.4%</b>	<b>-0.3%</b>	<b>0.9%</b>
Average Annual Percentage Change					
Residential Non-Heat					0.1%
Residential Heating					-0.2%
C&I Non-Heat					0.0%
C&I Heating					-0.1%
<b>Total</b>					<b>0.0%</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**Plan Year Actual Gas Deliveries by Rate Class in Dth (2005 - 2011)**

	2005	2006	2007	2008	2009	2010	2011	Change 2005-2011	% Change 2005-2011
Residential non-heat (1012)	661,242	629,795	612,816	651,551	748,916	646,551	585,039	(53,611)	-8.1%
Residential non-heat Low Income (1101)	-	-	-	-	15,493	21,950	22,592		
Residential heat (1247)	18,981,465	17,238,652	17,223,274	17,451,889	16,376,005	14,709,569	16,174,218	(1,038,844)	-5.5%
Residential heat Low Income (1301)	-	-	-	-	1,376,833	1,750,443	1,768,404		
C & I small (2107)	2,449,638	2,242,995	2,228,194	2,267,319	2,354,619	2,233,285	2,460,705	11,067	0.5%
C & I medium sales (2237+2231)	4,310,610	4,002,772	3,880,513	3,882,362	3,716,661	3,268,019	3,233,924	(1,076,686)	-25.0%
C & I medium FT-1 (22EN)	704,712	657,117	642,637	687,890	628,743	708,361	761,810	57,098	8.1%
C & I medium FT-2 (2221)	404,541	372,967	493,838	591,413	618,454	908,988	1,269,873	865,332	213.9%
LLF large sales (3367)	1,424,082	1,361,680	1,291,874	1,132,685	1,104,366	718,288	696,758	(727,324)	-51.1%
LLF large FT-1 (33EN)	1,002,642	998,781	1,086,586	1,082,405	1,019,457	959,280	1,078,897	76,255	7.6%
LLF large FT-2 (3321)	176,553	151,302	261,061	410,195	532,297	670,385	765,185	588,632	333.4%
HLF large sales (2367)	545,105	506,542	413,541	488,450	428,325	329,126	273,513	(271,592)	-49.8%
HLF large FT-1 (23EN)	449,362	411,987	475,526	431,335	391,982	565,614	511,598	62,236	13.8%
HLF large FT-2 (2321)	52,710	64,113	76,504	85,291	113,125	199,654	246,178	193,467	367.0%
LLF XL sales (3496)	222,221	170,236	100,120	170,713	239,849	77,288	35,493	(186,728)	-84.0%
LLF XL FT-1 (34EN)	699,609	566,624	611,636	884,467	580,067	530,389	943,536	243,927	34.9%
LLF XL FT-2 (3421)	2,669	19,892	13,819	11,548	14,667	55,358	73,832	71,163	2666.3%
HLF XL sales (2496)	365,925	415,400	399,510	303,702	339,725	229,923	220,229	(145,696)	-39.8%
HLF XL FT-1 (24EN)	3,708,892	3,012,948	3,724,340	4,690,434	4,624,556	4,663,953	4,868,321	1,159,429	31.3%
HLF XL FT-2 (2421)	-	6,445	20,269	28,638	77,731	86,479	176,358	176,358	
<b>Total</b>	<b>36,161,978</b>	<b>32,830,248</b>	<b>33,556,058</b>	<b>35,252,287</b>	<b>35,301,873</b>	<b>33,332,903</b>	<b>36,166,463</b>	<b>4,485</b>	<b>0.0%</b>
<b>Residential Non-Heat</b>	661,242	629,795	612,816	651,551	764,410	668,502	607,631	(53,611)	-8.1%
<b>Residential Heating</b>	18,981,465	17,238,652	17,223,274	17,451,889	17,752,838	16,460,012	17,942,621	(1,038,844)	-5.5%
<b>C&amp;I Non-Heat</b>	5,826,706	5,074,552	5,752,327	6,715,740	6,604,186	6,783,110	7,058,007	1,231,301	21.1%
<b>C&amp;I Heating</b>	10,692,565	9,887,249	9,967,641	10,433,107	10,180,438	9,421,280	10,558,203	(134,362)	-1.3%
<b>Total</b>	<b>36,161,978</b>	<b>32,830,248</b>	<b>33,556,058</b>	<b>35,252,287</b>	<b>35,301,873</b>	<b>33,332,903</b>	<b>36,166,463</b>	<b>4,485</b>	<b>0.0%</b>
<b>Annual Change</b>									
Residential Non-Heat		(31,447)	(16,979)	38,735	112,859	(95,908)	(60,871)		
Residential Heating		(1,742,813)	(15,378)	228,615	300,949	(1,292,826)	1,482,610		
C&I Non-Heat		(752,154)	677,775	963,413	(111,553)	178,923	274,897		
C&I Heating		(805,316)	80,392	465,466	(252,669)	(759,158)	1,136,923		
<b>Total</b>		<b>(3,331,730)</b>	<b>725,810</b>	<b>1,696,229</b>	<b>49,586</b>	<b>(1,968,970)</b>	<b>2,833,560</b>		
<b>Average Annual Change</b>									
Residential Non-Heat							(8,935)		
Residential Heating							(173,141)		
C&I Non-Heat							205,217		
C&I Heating							(22,394)		
<b>Total</b>							<b>747</b>		
<b>Annual Percentage Change</b>									
Residential Non-Heat		-4.8%	-2.7%	6.3%	17.3%	-12.5%	-9.1%		
Residential Heating		-9.2%	-0.1%	1.3%	1.7%	-7.3%	9.0%		
C&I Non-Heat		-12.9%	13.4%	16.7%	-1.7%	2.7%	4.1%		
C&I Heating		-7.5%	0.8%	4.7%	-2.4%	-7.5%	12.1%		
<b>Total</b>		<b>-9.2%</b>	<b>2.2%</b>	<b>5.1%</b>	<b>0.1%</b>	<b>-5.6%</b>	<b>8.5%</b>		
<b>Average Annual Percentage Change</b>									
Residential Non-Heat							-0.9%		
Residential Heating							-0.7%		
C&I Non-Heat							3.7%		
C&I Heating							0.0%		
<b>Total</b>							<b>0.2%</b>		

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**Plan Year Normalized Gas Deliveries by Rate Class in Dth (2005 - 2011)**

	2005	2006	2007	2008	2009	2010	2011	Change 2005-2011	% Change 2005-2011
Residential non-heat (1012)	672,457	659,330	616,765	651,551	748,916	646,551	585,039	(64,826)	-9.6%
Residential non-heat Low Income (1101)	-	-	-	-	15,493	21,950	22,592		
Residential heat (1247)	18,712,407	18,311,088	17,690,813	17,542,543	16,331,244	14,882,573	16,124,484	(824,275)	-4.4%
Residential heat Low Income (1301)	-	-	-	-	1,373,400	1,772,744	1,763,648		
C & I small (2107)	2,437,675	2,409,235	2,297,511	2,275,909	2,339,947	2,268,256	2,453,199	15,524	0.6%
C & I medium sales (2237+2231)	4,306,383	4,190,302	3,974,283	3,893,828	3,700,382	3,308,671	3,228,256	(1,078,127)	-25.0%
C & I medium FT-1 (22EN)	891,264	689,632	668,258	687,890	628,743	708,361	761,810	(129,454)	-14.5%
C & I medium FT-2 (2221)	403,454	379,761	500,694	593,973	616,616	925,355	1,267,220	863,766	214.1%
LLF large sales (3367)	1,434,341	1,405,762	1,330,496	1,138,497	1,100,393	729,281	695,150	(739,192)	-51.5%
LLF large FT-1 (33EN)	1,002,540	1,033,091	1,135,194	1,114,478	901,830	1,154,687	991,648	(10,892)	-1.1%
LLF large FT-2 (3321)	153,155	160,043	267,794	412,870	530,059	680,250	763,112	609,957	398.3%
HLF large sales (2367)	614,246	506,785	417,727	488,450	428,325	329,126	273,513	(340,733)	-55.5%
HLF large FT-1 (23EN)	440,011	413,096	482,850	431,335	391,982	565,614	511,598	71,587	16.3%
HLF large FT-2 (2321)	52,109	64,049	77,386	85,291	113,125	199,654	246,178	194,069	372.4%
LLF XL sales (3496)	202,276	174,704	104,464	172,384	236,332	79,008	36,604	(165,672)	-81.9%
LLF XL FT-1 (34EN)	695,445	585,252	630,282	974,897	534,386	642,898	905,927	210,482	30.3%
LLF XL FT-2 (3421)	1,179	20,558	14,369	11,619	14,570	56,161	74,946	73,767	6255.9%
HLF XL sales (2496)	328,901	415,400	399,510	303,702	339,725	229,923	220,229	(108,672)	-33.0%
HLF XL FT-1 (24EN)	3,482,804	3,012,948	3,724,340	4,690,434	4,624,556	4,663,953	4,868,321	1,385,518	39.8%
HLF XL FT-2 (2421)	-	6,445	20,269	28,638	77,731	86,479	176,358	176,358	
<b>Total</b>	<b>35,830,647</b>	<b>34,437,481</b>	<b>34,353,005</b>	<b>35,498,289</b>	<b>35,047,755</b>	<b>33,951,495</b>	<b>35,969,831</b>	<b>139,184</b>	<b>0.4%</b>
<b>Residential Non-Heat</b>	672,457	659,330	616,765	651,551	764,410	668,502	607,631	(64,826)	-9.6%
<b>Residential Heating</b>	18,712,407	18,311,088	17,690,813	17,542,543	17,704,644	16,655,317	17,888,132	(824,275)	-4.4%
<b>C&amp;I Non-Heat</b>	4,918,071	4,418,723	5,122,082	6,027,850	5,975,443	6,074,749	6,296,197	1,378,126	28.0%
<b>C&amp;I Heating</b>	11,527,712	11,048,341	10,923,345	11,276,345	10,603,258	10,552,928	11,177,871	(349,841)	-3.0%
<b>Total</b>	<b>35,830,647</b>	<b>34,437,481</b>	<b>34,353,005</b>	<b>35,498,289</b>	<b>35,047,755</b>	<b>33,951,495</b>	<b>35,969,831</b>	<b>139,184</b>	<b>0.4%</b>
<b>Annual Change</b>									
Residential Non-Heat		(13,127)	(42,565)	34,786	112,859	(95,908)	(60,871)		
Residential Heating		(401,319)	(620,274)	(148,270)	162,101	(1,049,327)	1,232,815		
C&I Non-Heat		(499,347)	703,359	905,768	(52,406)	99,305	221,448		
C&I Heating		(479,372)	(124,996)	353,000	(673,087)	(50,330)	624,944		
<b>Total</b>		<b>(1,393,165)</b>	<b>(84,477)</b>	<b>1,145,284</b>	<b>(450,534)</b>	<b>(1,096,260)</b>	<b>2,018,336</b>		
<b>Average Annual Change</b>									
Residential Non-Heat							(10,804)		
Residential Heating							(137,379)		
C&I Non-Heat							229,688		
C&I Heating							(58,307)		
<b>Total</b>							<b>23,197</b>		
<b>Annual Percentage Change</b>									
Residential Non-Heat		-2.0%	-6.5%	5.6%	17.3%	-12.5%	-9.1%		
Residential Heating		-2.1%	-3.4%	-0.8%	0.9%	-5.9%	7.4%		
C&I Non-Heat		-10.2%	15.9%	17.7%	-0.9%	1.7%	3.6%		
C&I Heating		-4.2%	-1.1%	3.2%	-6.0%	-0.5%	5.9%		
<b>Total</b>		<b>-3.9%</b>	<b>-0.2%</b>	<b>3.3%</b>	<b>-1.3%</b>	<b>-3.1%</b>	<b>5.9%</b>		
<b>Average Annual Percentage Change</b>									
Residential Non-Heat							-1.2%		
Residential Heating							-0.7%		
C&I Non-Heat							4.6%		
C&I Heating							-0.4%		
<b>Total</b>							<b>0.1%</b>		

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**Plan Year End Number of Customers by Rate Class (2005 - 2011)**

	2005	2006	2007	2008	2009	2010	2011	Change 2005-2011	% Change 2005-2011
Residential non-heat (1012)	33,564	32,693	31,991	31,308	29,718	27,304	26,182	(7,044)	-21.0%
Residential non-heat Low Income (1101)	-	-	-	-	328	356	338		
Residential heat (1247)	186,358	188,985	190,389	191,776	174,750	175,754	176,523	11,198	6.0%
Residential heat Low Income (1301)	-	-	-	-	19,232	20,273	21,033		
C & I small (2107)	17,598	17,648	17,736	17,877	18,093	18,052	18,061	463	2.6%
C & I medium sales (2237+2231)	3,689	3,605	3,611	3,508	3,254	2,984	2,928	(761)	-20.6%
C & I medium FT-1 (22EN)	413	394	394	406	427	419	433	20	4.8%
C & I medium FT-2 (2221)	280	352	393	399	602	848	1,014	734	262.1%
LLF large sales (3367)	238	242	215	221	146	126	123	(115)	-48.3%
LLF large FT-1 (33EN)	161	173	170	152	145	156	166	5	3.1%
LLF large FT-2 (3321)	27	30	54	68	104	132	147	120	444.4%
HLF large sales (2367)	83	80	85	83	64	48	45	(38)	-45.8%
HLF large FT-1 (23EN)	59	62	63	70	70	70	65	6	10.2%
HLF large FT-2 (2321)	12	13	18	16	31	41	40	28	233.3%
LLF XL sales (3496)	11	7	7	9	8	2	5	(6)	-54.5%
LLF XL FT-1 (34EN)	23	24	26	22	19	23	27	4	17.4%
LLF XL FT-2 (3421)	1	1	1	1	3	5	3	2	200.0%
HLF XL sales (2496)	17	15	12	15	9	9	7	(10)	-58.8%
HLF XL FT-1 (24EN)	41	47	57	60	62	67	64	23	56.1%
HLF XL FT-2 (2421)	-	1	2	2	3	6	6	6	
<b>Total</b>	<b>242,575</b>	<b>244,372</b>	<b>245,224</b>	<b>245,993</b>	<b>247,068</b>	<b>246,675</b>	<b>247,210</b>	<b>4,635</b>	<b>1.9%</b>
<b>Residential Non-Heat</b>	33,564	32,693	31,991	31,308	30,046	27,660	26,520	(7,044)	-21.0%
<b>Residential Heating</b>	186,358	188,985	190,389	191,776	193,982	196,027	197,556	11,198	6.0%
<b>C&amp;I Non-Heat</b>	625	612	631	652	666	660	660	35	5.6%
<b>C&amp;I Heating</b>	22,028	22,082	22,213	22,257	22,374	22,328	22,474	446	2.0%
<b>Total</b>	<b>242,575</b>	<b>244,372</b>	<b>245,224</b>	<b>245,993</b>	<b>247,068</b>	<b>246,675</b>	<b>247,210</b>	<b>4,635</b>	<b>1.9%</b>
<b>Annual Change</b>									
Residential Non-Heat		(871)	(702)	(683)	(1,262)	(2,386)	(1,140)		
Residential Heating		2,627	1,404	1,387	2,206	2,045	1,529		
C&I Non-Heat		(13)	19	21	14	(6)	-		
C&I Heating		54	131	44	117	(46)	146		
<b>Total</b>		<b>1,797</b>	<b>852</b>	<b>769</b>	<b>1,075</b>	<b>(393)</b>	<b>535</b>		
<b>Average Annual Change</b>									
Residential Non-Heat							(1,174)		
Residential Heating							1,866		
C&I Non-Heat							6		
C&I Heating							74		
<b>Total</b>							<b>773</b>		
<b>Annual Percentage Change</b>									
Residential Non-Heat		-2.6%	-2.1%	-2.1%	-4.0%	-7.9%	-4.1%		
Residential Heating		1.4%	0.7%	0.7%	1.2%	1.1%	0.8%		
C&I Non-Heat		-2.1%	3.1%	3.3%	2.1%	-0.9%	0.0%		
C&I Heating		0.2%	0.6%	0.2%	0.5%	-0.2%	0.7%		
<b>Total</b>		<b>0.7%</b>	<b>0.3%</b>	<b>0.3%</b>	<b>0.4%</b>	<b>-0.2%</b>	<b>0.2%</b>		
<b>Average Annual Percentage Change</b>									
Residential Non-Heat							-3.8%		
Residential Heating							1.0%		
C&I Non-Heat							0.9%		
C&I Heating							0.3%		
<b>Total</b>							<b>0.3%</b>		

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**Plan Year Normal Use Per Customer by Rate Class (2005 - 2011)**  
(Dth/Customer)

	2005	2006	2007	2008	2009	2010	2011	Change 2005-2011	% Change 2005-2011
Residential non-heat (1012)	20.04	20.17	19.28	20.81	25.20	23.68	22.35	69	345.2%
Residential non-heat Low Income (1101)					47.24	61.66	66.84		
Residential heat (1247)	100.41	96.89	92.92	91.47	93.45	84.68	91.34	75	74.5%
Residential heat Low Income (1301)					71.41	87.44	83.85		
C & I small (2107)	138.52	136.52	129.54	127.31	129.33	125.65	135.83	(3)	-1.9%
C & I medium sales (2237+2231)	1,167.36	1,162.36	1,100.60	1,109.99	1,137.18	1,108.80	1,102.55	(65)	-5.6%
C & I medium FT-1 (22EN)	2,158.02	1,750.33	1,696.09	1,694.31	1,472.47	1,690.60	1,759.38	(399)	-18.5%
C & I medium FT-2 (2221)	1,440.91	1,078.87	1,274.03	1,488.65	1,024.28	1,091.22	1,249.72	(191)	-13.3%
LLF large sales (3367)	6,026.64	5,808.93	6,188.35	5,151.57	7,536.94	5,787.95	5,651.62	(375)	-6.2%
LLF large FT-1 (33EN)	6,226.96	5,971.63	6,677.61	7,332.09	6,219.52	7,401.84	5,973.78	(253)	-4.1%
LLF large FT-2 (3321)	5,672.41	5,334.77	4,959.15	6,071.62	5,096.72	5,153.41	5,191.24	(481)	-8.5%
HLF large sales (2367)	7,400.55	6,334.81	4,914.44	5,884.94	6,692.58	6,856.79	6,078.06	(1,322)	-17.9%
HLF large FT-1 (23EN)	7,457.82	6,662.83	7,664.29	6,161.93	5,599.74	8,080.20	7,870.74	413	5.5%
HLF large FT-2 (2321)	4,342.41	4,926.88	4,299.20	5,330.69	3,649.19	4,869.60	6,154.44	1,812	41.7%
LLF XL sales (3496)	18,388.72	24,957.71	14,923.49	19,153.74	29,541.49	39,504.19	7,320.73	(11,068)	-60.2%
LLF XL FT-1 (34EN)	30,236.74	24,385.51	24,241.63	44,313.51	28,125.57	27,952.09	33,552.84	3,316	11.0%
LLF XL FT-2 (3421)	1,179.16	20,558.40	14,368.52	11,619.21	4,856.63	11,232.21	24,981.97	23,803	2018.6%
HLF XL sales (2496)	19,347.12	27,693.33	33,292.50	20,246.80	37,747.23	25,547.00	31,461.32	12,114	62.6%
HLF XL FT-1 (24EN)	84,946.43	64,105.28	65,339.30	78,173.90	74,589.61	69,611.24	76,067.52	(8,879)	-10.5%
HLF XL FT-2 (2421)		6,445.00	10,134.35	14,319.00	25,910.30	14,413.17	29,393.02	29,393	
<b>Total</b>	<b>147.71</b>	<b>140.92</b>	<b>140.09</b>	<b>144.31</b>	<b>141.85</b>	<b>137.64</b>	<b>145.50</b>	<b>(2.21)</b>	<b>-1.5%</b>
<b>Residential Non-Heat</b>	20.04	20.17	19.28	20.81	25.44	24.17	22.91	2.88	14.4%
<b>Residential Heating</b>	100.41	96.89	92.92	91.47	91.27	84.96	90.55	(9.86)	-9.8%
<b>C&amp;I Non-Heat</b>	7,868.91	7,220.14	8,117.40	9,245.17	8,972.14	9,204.16	9,539.69	1,670.78	21.2%
<b>C&amp;I Heating</b>	523.32	500.33	491.75	506.64	473.91	472.63	497.37	(25.95)	-5.0%
<b>Total</b>	<b>147.71</b>	<b>140.92</b>	<b>140.09</b>	<b>144.31</b>	<b>141.85</b>	<b>137.64</b>	<b>145.50</b>	<b>(2.21)</b>	<b>-1.5%</b>
<b>Annual Change</b>									
Residential Non-Heat		0.13	(0.89)	1.53	4.63	(1.27)	(1.26)		
Residential Heating		(3.52)	(3.97)	(1.45)	(0.20)	(6.31)	5.58		
C&I Non-Heat		(648.78)	897.27	1,127.76	(273.03)	232.03	335.53		
C&I Heating		(22.99)	(8.58)	14.89	(32.73)	(1.28)	24.74		
<b>Total</b>		(6.79)	(0.83)	4.22	(2.45)	(4.22)	7.87		
<b>Average Annual Change</b>									
Residential Non-Heat							0.48		
Residential Heating							(1.64)		
C&I Non-Heat							278.46		
C&I Heating							(4.33)		
<b>Total</b>							(0.37)		
<b>Annual Percentage Change</b>									
Residential Non-Heat		0.7%	-4.4%	7.9%	22.2%	-5.0%	-5.2%		
Residential Heating		-3.5%	-4.1%	-1.6%	-0.2%	-6.9%	6.6%		
C&I Non-Heat		-8.2%	12.4%	13.9%	-3.0%	2.6%	3.6%		
C&I Heating		-4.4%	-1.7%	3.0%	-6.5%	-0.3%	5.2%		
<b>Total</b>		-4.6%	-0.6%	3.0%	-1.7%	-3.0%	5.7%		
<b>Average Annual Percentage Change</b>									
Residential Non-Heat							2.7%		
Residential Heating							-1.6%		
C&I Non-Heat							3.6%		
C&I Heating							-0.8%		
<b>Total</b>							-0.2%		

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**Economic Datasets**

Year	FEMF EMPM	FET EMP	FGDPQ GMP	FHHOLDCA HH	FHST1Q HSF	FHSTMFQ HMF	FHSTQ HTT	FLBR UEMR	FLBU UEM	FO
2004	94.31	713.13	61.52	627.14	3,270.16	660.97	3,931.13	5.6%	46.80	81.86
2005	89.46	716.32	63.27	624.29	3,412.28	773.65	4,185.93	5.4%	45.60	128.18
2006	85.80	719.16	66.35	621.85	3,183.83	815.35	3,999.18	5.4%	46.18	118.16
2007	82.00	717.87	67.94	619.78	2,479.74	576.96	3,056.70	5.4%	46.86	187.88
2008	77.35	703.85	68.60	619.10	1,450.02	207.93	1,657.94	7.4%	63.92	125.18
2009	67.43	670.23	68.43	618.20	1,064.03	196.78	1,260.81	11.1%	95.97	192.03
2010	64.73	657.79	69.49	618.06	1,267.72	150.95	1,418.68	11.8%	102.85	203.05
2011	65.11	665.74	72.00	619.27	1,514.59	467.13	1,981.72	11.1%	96.33	198.67
2012	66.55	684.84	75.89	619.80	2,821.14	785.25	3,606.39	10.6%	92.86	182.35
2013	65.98	697.95	80.16	620.44	3,608.07	869.25	4,477.33	9.6%	84.48	192.36
2014	66.21	718.51	83.74	622.90	3,782.89	859.39	4,642.28	7.5%	66.38	201.86
2015	66.44	735.11	87.04	625.67	3,754.06	900.36	4,654.42	6.4%	56.01	211.21
2016	65.83	744.69	90.38	627.98	3,962.36	970.22	4,932.58	5.7%	50.67	226.58
<b>Annual Growth Rates</b>										
2005	-5.1%	0.4%	2.8%	-0.5%	4.3%	17.0%	6.5%	-3.6%	-2.6%	56.6%
2006	-4.1%	0.4%	4.9%	-0.4%	-6.7%	5.4%	-4.5%	-0.2%	1.3%	-7.8%
2007	-4.4%	-0.2%	2.4%	-0.3%	-22.1%	-29.2%	-23.6%	1.2%	1.5%	59.0%
2008	-5.7%	-2.0%	1.0%	-0.1%	-41.5%	-64.0%	-45.8%	36.9%	36.4%	-33.4%
2009	-12.8%	-4.8%	-0.3%	-0.1%	-26.6%	-5.4%	-24.0%	50.2%	50.1%	53.4%
2010	-4.0%	-1.9%	1.6%	0.0%	19.1%	-23.3%	12.5%	6.2%	7.2%	5.7%
2011	0.6%	1.2%	3.6%	0.2%	19.5%	209.5%	39.7%	-6.3%	-6.3%	-2.2%
2012	2.2%	2.9%	5.4%	0.1%	86.3%	68.1%	82.0%	-4.3%	-3.6%	-8.2%
2013	-0.9%	1.9%	5.6%	0.1%	27.9%	10.7%	24.1%	-9.5%	-9.0%	5.5%
2014	0.3%	2.9%	4.5%	0.4%	4.8%	-1.1%	3.7%	-21.5%	-21.4%	4.9%
2015	0.4%	2.3%	4.0%	0.4%	-0.8%	4.8%	0.3%	-15.7%	-15.6%	4.6%
2016	-0.9%	1.3%	3.8%	0.4%	5.5%	7.8%	6.0%	-9.6%	-9.5%	7.3%
<b>Compound Annual Growth Rates</b>								<b><u>AVERAGE</u></b>		
2006-2011	-5.4%	-1.5%	1.6%	-0.1%	-13.8%	-10.5%	-13.1%	8.71%	15.8%	11.0%
2011-2016	0.2%	2.3%	4.7%	0.3%	21.2%	15.7%	20.0%	8.49%	-12.1%	2.7%



**Narragansett Electric Company d/b/a NATIONAL GRID**  
**Economic Datasets**

Year	FPOP2544Q POP25-44	FPOPCA POP	FRTFSQ RSL	FYHHAQG INC	FYPCPIQ PIP	FYPDPI\$Q PIDR	Lagged_FO	Lagged_NG	NG	NGdivFO	Pop* DisPersInc
2004	458.46	1,616.87	22.33	88,874.62	34,471.86	50,808.58	128.18	16.95	13.75	0.13	82,151.08
2005	449.52	1,609.68	23.44	92,010.11	35,683.60	50,416.76	118.16	16.54	16.95	0.14	81,154.71
2006	440.53	1,603.83	24.33	97,708.56	37,881.52	51,728.70	187.88	16.22	16.54	0.09	82,964.04
2007	432.65	1,599.50	24.57	102,845.13	39,845.55	52,092.52	125.18	17.00	16.22	0.14	83,321.77
2008	425.99	1,599.31	23.45	106,456.90	41,191.54	52,392.21	192.03	16.43	17.00	0.09	83,791.49
2009	419.18	1,600.64	22.11	106,113.78	40,986.79	53,982.05	203.05	17.34	16.43	0.09	86,405.94
2010	413.66	1,600.08	22.96	109,547.45	42,323.43	54,266.02	198.67	16.21	17.34	0.08	86,829.92
2011	410.02	1,598.90	24.09	114,437.50	44,320.99	54,704.92	182.35	16.14	16.21	0.09	87,467.69
2012	408.83	1,600.88	24.27	118,615.25	45,890.28	54,368.53	192.36	16.87	16.14	0.09	87,037.66
2013	409.68	1,607.75	24.31	124,103.90	47,883.02	54,291.72	201.86	17.47	16.87	0.09	87,287.62
2014	411.17	1,614.23	24.44	127,953.55	49,381.85	53,861.59	211.21	17.82	17.47	0.08	86,944.72
2015	412.91	1,619.68	24.72	131,609.77	50,841.43	53,733.52	226.58	18.33	17.82	0.08	87,031.33
2016	415.56	1,625.22	25.08	135,904.73	52,521.06	53,789.77	242.14	19.21	18.33	0.08	87,420.26
<b>Annual Growth R:</b>											
2005	-2.0%	-0.4%	5.0%	3.5%	3.5%	-0.8%	-7.8%	-2.4%	23.3%	5.9%	-1.2%
2006	-2.0%	-0.4%	3.8%	6.2%	6.2%	2.6%	59.0%	-1.9%	-2.4%	-38.3%	2.2%
2007	-1.8%	-0.3%	1.0%	5.3%	5.2%	0.7%	-33.4%	4.8%	-1.9%	57.3%	0.4%
2008	-1.5%	0.0%	-4.6%	3.5%	3.4%	0.6%	53.4%	-3.4%	4.8%	-37.0%	0.6%
2009	-1.6%	0.1%	-5.7%	-0.3%	-0.5%	3.0%	5.7%	5.5%	-3.4%	-0.2%	3.1%
2010	-1.3%	0.0%	3.8%	3.2%	3.3%	0.5%	-2.2%	-6.5%	5.5%	-4.5%	0.5%
2011	-0.9%	-0.1%	4.9%	4.5%	4.7%	0.8%	-8.2%	-0.4%	-6.5%	8.5%	0.7%
2012	-0.3%	0.1%	0.8%	3.7%	3.5%	-0.6%	5.5%	4.5%	-0.4%	-0.9%	-0.5%
2013	0.2%	0.4%	0.2%	4.6%	4.3%	-0.1%	4.9%	3.6%	4.5%	-1.3%	0.3%
2014	0.4%	0.4%	0.5%	3.1%	3.1%	-0.8%	4.6%	2.0%	3.6%	-2.5%	-0.4%
2015	0.4%	0.3%	1.2%	2.9%	3.0%	-0.2%	7.3%	2.9%	2.0%	-4.1%	0.1%
2016	0.6%	0.3%	1.4%	3.3%	3.3%	0.1%	6.9%	4.8%	2.9%	-1.9%	0.4%
<b>Compound Annu:</b>											
2006-2011	-1.4%	-0.1%	-0.2%	3.2%	3.2%	1.1%	-0.6%	-0.1%	-0.4%	0.5%	1.1%
2011-2016	0.3%	0.3%	0.8%	3.5%	3.5%	-0.3%	5.8%	3.5%	2.5%	-2.2%	0.0%

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Actual Volumes by Month (Dth)**

	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	PY2005
Residential non-heat (1012)	54,361	61,742	73,390	74,399	68,813	65,782	56,158	48,869	43,157	35,814	40,706	38,051	661,242
Residential non-heat Low Income (1101)	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential heat (1247)	1,341,269	2,111,280	3,130,420	3,480,195	3,008,844	2,207,944	1,131,290	800,230	472,099	384,501	432,795	480,598	18,981,465
Residential heat Low Income (1301)	-	-	-	-	-	-	-	-	-	-	-	-	-
C & I small (2107)	148,587	274,527	415,705	497,283	420,116	288,221	119,044	85,244	46,754	43,762	50,918	59,477	2,449,638
C & I medium sales (2237+2231)	321,599	462,124	681,459	728,514	666,901	479,415	260,581	196,901	132,349	113,214	129,282	138,271	4,310,610
C & I medium FT-1 (22EN)	50,637	94,339	113,086	93,212	95,322	55,375	48,697	28,606	25,822	24,036	27,896	47,684	704,712
C & I medium FT-2 (2221)	28,799	40,249	55,252	57,364	56,904	45,373	29,620	24,525	17,795	16,221	16,089	16,350	404,541
LLF large sales (3367)	97,454	163,139	237,894	254,458	233,288	181,134	92,439	54,147	32,389	18,379	22,147	37,214	1,424,082
LLF large FT-1 (33EN)	101,976	152,511	192,304	154,920	155,739	75,685	58,197	19,870	16,991	16,071	15,930	42,448	1,002,642
LLF large FT-2 (3321)	10,315	21,645	33,502	33,331	32,278	18,270	12,268	6,213	2,602	1,502	829	3,798	176,553
HLF large sales (2367)	42,320	55,628	69,875	59,843	62,045	50,456	40,130	43,809	29,904	29,542	30,487	31,066	545,105
HLF large FT-1 (23EN)	41,089	51,479	56,870	46,951	48,597	33,800	32,997	30,018	25,506	28,744	27,790	25,521	449,362
HLF large FT-2 (2321)	3,093	3,839	4,664	5,301	5,400	4,679	3,250	5,236	4,328	4,533	4,509	3,878	52,710
LLF XL sales (3496)	23,343	30,935	43,034	37,951	45,567	19,787	8,946	4,710	1,849	1,451	1,551	3,097	222,221
LLF XL FT-1 (34EN)	66,041	98,255	124,842	111,639	101,744	58,217	41,666	16,988	13,830	14,255	17,568	34,564	699,609
LLF XL FT-2 (3421)	-	-	-	-	-	-	2,087	481	93	3	-	5	2,669
HLF XL sales (2496)	28,113	30,584	35,178	33,994	38,420	33,286	29,934	27,396	22,400	25,295	30,612	30,713	365,925
HLF XL FT-1 (24EN)	450,990	170,103	418,049	382,010	386,512	524,225	264,670	228,915	215,962	203,300	218,904	245,252	3,708,892
HLF XL FT-2 (2421)	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>2,809,986</b>	<b>3,822,379</b>	<b>5,685,524</b>	<b>6,051,365</b>	<b>5,426,490</b>	<b>4,141,649</b>	<b>2,231,974</b>	<b>1,622,158</b>	<b>1,103,830</b>	<b>960,623</b>	<b>1,068,013</b>	<b>1,237,987</b>	<b>36,161,978</b>
<b>Residential Non-Heat</b>	54,361	61,742	73,390	74,399	68,813	65,782	56,158	48,869	43,157	35,814	40,706	38,051	661,242
<b>Residential Heating</b>	1,341,269	2,111,280	3,130,420	3,480,195	3,008,844	2,207,944	1,131,290	800,230	472,099	384,501	432,795	480,598	18,981,465
<b>C&amp;I Non-Heat</b>	616,242	405,972	697,722	621,311	636,296	701,821	419,678	363,980	323,922	315,450	340,198	384,114	5,826,706
<b>C&amp;I Heating</b>	798,114	1,243,385	1,783,992	1,875,460	1,712,537	1,166,102	624,848	409,079	264,652	224,858	254,314	335,224	10,692,565
<b>Total</b>	<b>2,809,986</b>	<b>3,822,379</b>	<b>5,685,524</b>	<b>6,051,365</b>	<b>5,426,490</b>	<b>4,141,649</b>	<b>2,231,974</b>	<b>1,622,158</b>	<b>1,103,830</b>	<b>960,623</b>	<b>1,068,013</b>	<b>1,237,987</b>	<b>36,161,978</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Actual Volumes by Month (Dth)**

	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	PY2006
Residential non-heat	48,719	63,222	73,064	58,207	64,436	61,865	56,931	50,751	40,909	33,240	38,870	39,581	629,795
Residential non-heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential heat	1,110,436	2,283,820	2,916,973	2,299,220	2,781,742	2,086,352	1,186,842	724,445	461,814	379,546	444,785	562,677	17,238,652
Residential heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
C & I small (2107)	125,274	297,039	406,650	325,158	394,965	267,802	130,176	80,136	52,958	45,752	49,076	68,009	2,242,995
C & I medium sales (2237+2231)	265,941	509,922	638,609	540,502	634,578	450,847	277,533	177,687	122,593	108,726	124,103	151,731	4,002,772
C & I medium FT-1 (22EN)	57,290	102,967	90,411	93,121	86,590	51,254	41,226	29,763	23,789	20,691	31,123	28,892	657,117
C & I medium FT-2 (2221)	24,800	40,403	49,051	39,942	48,836	40,051	31,948	24,040	18,967	15,205	19,576	20,148	372,967
LLF large sales (3367)	100,914	185,370	225,732	211,035	255,510	136,529	81,710	44,107	25,183	19,301	31,348	44,941	1,361,680
LLF large FT-1 (33EN)	109,153	163,661	155,859	155,825	144,820	81,846	55,970	22,697	17,126	16,058	29,023	46,743	998,781
LLF large FT-2 (3321)	10,336	20,850	28,544	18,225	26,398	19,341	10,305	5,939	2,421	1,903	2,515	4,525	151,302
HLF large sales (2367)	39,326	55,693	56,385	45,443	60,408	54,269	40,663	37,138	25,538	21,869	38,690	31,120	506,542
HLF large FT-1 (23EN)	43,263	38,052	37,731	43,145	45,983	31,000	31,110	27,941	24,658	26,463	36,887	25,754	411,987
HLF large FT-2 (2321)	4,959	5,917	6,900	5,722	7,290	6,547	5,545	4,762	4,150	3,947	4,254	4,120	64,113
LLF XL sales (3496)	13,712	31,134	29,003	23,799	34,521	18,412	9,134	3,609	1,188	1,010	1,408	3,306	170,236
LLF XL FT-1 (34EN)	58,653	95,281	90,021	91,835	75,994	48,316	27,169	13,877	11,900	12,451	17,919	23,208	566,624
LLF XL FT-2 (3421)	954	3,373	4,526	2,615	3,885	2,734	1,160	639	-	-	6	-	19,892
HLF XL sales (2496)	35,348	46,029	34,594	48,358	42,050	33,377	27,740	35,697	24,486	26,459	31,804	29,458	415,400
HLF XL FT-1 (24EN)	246,982	287,655	287,743	277,432	288,075	228,877	233,878	214,392	255,986	198,304	284,059	209,565	3,012,948
HLF XL FT-2 (2421)	-	-	-	-	-	-	-	1,536	1,138	1,210	1,314	1,247	6,445
<b>Total</b>	<b>2,296,060</b>	<b>4,230,388</b>	<b>5,131,796</b>	<b>4,279,584</b>	<b>4,996,081</b>	<b>3,619,419</b>	<b>2,249,040</b>	<b>1,499,156</b>	<b>1,114,804</b>	<b>932,135</b>	<b>1,186,760</b>	<b>1,295,025</b>	<b>32,830,248</b>
Residential Non-Heat	48,719	63,222	73,064	58,207	64,436	61,865	56,931	50,751	40,909	33,240	38,870	39,581	629,795
Residential Heating	1,110,436	2,283,820	2,916,973	2,299,220	2,781,742	2,086,352	1,186,842	724,445	461,814	379,546	444,785	562,677	17,238,652
C&I Non-Heat	427,168	536,313	513,764	513,221	530,396	405,324	380,162	351,229	359,745	298,943	428,131	330,156	5,074,552
C&I Heating	709,737	1,347,033	1,627,995	1,408,936	1,619,507	1,065,878	625,105	372,731	252,336	220,406	274,974	362,611	9,887,249
<b>Total</b>	<b>2,296,060</b>	<b>4,230,388</b>	<b>5,131,796</b>	<b>4,279,584</b>	<b>4,996,081</b>	<b>3,619,419</b>	<b>2,249,040</b>	<b>1,499,156</b>	<b>1,114,804</b>	<b>932,135</b>	<b>1,186,760</b>	<b>1,295,025</b>	<b>32,830,248</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Actual Volumes by Month (Dth)**

	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	PY2007
Residential non-heat	47,556	57,497	63,906	68,533	70,165	60,621	54,387	44,481	38,144	33,949	37,765	35,812	612,816
Residential non-heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential heat	1,127,890	1,722,327	2,247,983	3,240,734	3,167,787	2,160,256	1,260,805	608,465	433,911	369,320	433,170	450,626	17,223,274
Residential heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
C & I small (2107)	115,038	218,216	286,793	473,984	455,738	283,021	144,594	65,676	45,400	45,468	48,300	45,966	2,228,194
C & I medium sales (2237+2231)	260,757	386,745	485,959	703,759	679,124	457,845	281,019	162,702	110,487	106,039	117,043	129,034	3,880,513
C & I medium FT-1 (22EN)	64,460	82,608	79,480	111,998	95,770	63,273	23,305	24,738	21,305	22,117	24,209	29,374	642,637
C & I medium FT-2 (2221)	32,740	42,252	59,229	76,895	80,228	59,951	39,614	26,743	19,689	18,100	19,835	18,562	493,838
LLF large sales (3367)	89,739	158,038	181,838	250,940	238,271	171,086	87,348	29,512	22,854	19,519	20,617	22,112	1,291,874
LLF large FT-1 (33EN)	111,405	149,552	150,864	211,573	185,507	122,070	29,149	26,271	21,878	19,819	22,253	36,245	1,086,586
LLF large FT-2 (3321)	9,918	26,082	43,298	48,318	48,543	35,890	20,623	10,672	2,762	4,038	5,190	5,727	261,061
HLF large sales (2367)	35,498	38,981	42,994	46,648	44,478	38,951	31,011	27,219	24,011	21,621	32,961	29,168	413,541
HLF large FT-1 (23EN)	40,428	44,612	39,160	47,070	49,324	47,818	36,315	40,209	36,950	37,660	27,671	28,309	475,526
HLF large FT-2 (2321)	5,136	7,659	7,656	7,702	10,812	7,573	6,730	5,567	4,232	3,957	4,966	4,514	76,504
LLF XL sales (3496)	8,767	15,068	14,275	19,722	19,028	10,975	4,282	1,633	767	453	2,019	3,131	100,120
LLF XL FT-1 (34EN)	60,527	77,239	81,746	117,032	111,368	62,367	17,613	15,654	13,882	13,850	14,594	25,764	611,636
LLF XL FT-2 (3421)	964	1,899	2,121	3,293	3,084	1,501	853	72	18	5	3	6	13,819
HLF XL sales (2496)	33,471	40,865	38,011	54,745	45,519	40,027	33,800	28,836	20,712	17,335	23,894	22,295	399,510
HLF XL FT-1 (24EN)	350,805	354,985	291,357	353,590	375,650	294,038	269,298	251,036	270,830	255,962	291,276	365,513	3,724,340
HLF XL FT-2 (2421)	1,337	544	3,564	1,648	2,218	2,038	1,901	1,393	993	893	1,766	1,974	20,269
<b>Total</b>	<b>2,396,436</b>	<b>3,425,169</b>	<b>4,120,234</b>	<b>5,838,184</b>	<b>5,682,614</b>	<b>3,919,301</b>	<b>2,342,647</b>	<b>1,370,879</b>	<b>1,088,825</b>	<b>990,105</b>	<b>1,127,532</b>	<b>1,254,132</b>	<b>33,556,058</b>
Residential Non-Heat	47,556	57,497	63,906	68,533	70,165	60,621	54,387	44,481	38,144	33,949	37,765	35,812	612,816
Residential Heating	1,127,890	1,722,327	2,247,983	3,240,734	3,167,787	2,160,256	1,260,805	608,465	433,911	369,320	433,170	450,626	17,223,274
C&I Non-Heat	531,135	570,254	502,222	623,401	623,771	493,718	402,360	378,998	379,033	359,545	406,743	481,147	5,752,327
C&I Heating	689,855	1,075,091	1,306,123	1,905,516	1,820,891	1,204,706	625,095	338,935	237,737	227,291	249,854	286,547	9,967,641
<b>Total</b>	<b>2,396,436</b>	<b>3,425,169</b>	<b>4,120,234</b>	<b>5,838,184</b>	<b>5,682,614</b>	<b>3,919,301</b>	<b>2,342,647</b>	<b>1,370,879</b>	<b>1,088,825</b>	<b>990,105</b>	<b>1,127,532</b>	<b>1,254,132</b>	<b>33,556,058</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Actual Volumes by Month (Dth)**

	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	PY2008
Residential non-heat	50,306	62,403	75,559	81,531	80,806	61,869	58,168	46,582	28,457	38,140	32,091	35,639	651,551
Residential non-heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential heat	961,120	2,128,765	3,019,104	3,087,829	2,591,464	1,953,626	1,298,336	673,166	450,662	417,902	380,484	489,431	17,451,889
Residential heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
C & I small (2107)	132,764	280,221	439,762	397,718	364,060	240,674	137,897	77,320	69,277	63,061	12,901	51,664	2,267,319
C & I medium sales (2237+2231)	232,675	432,716	625,294	653,334	839,266	196,035	201,058	151,210	128,312	122,016	90,061	210,385	3,882,362
C & I medium FT-1 (22EN)	69,527	101,429	88,576	132,255	56,829	84,373	11,720	24,959	27,555	28,605	31,311	30,750	687,890
C & I medium FT-2 (2221)	30,524	60,913	87,964	102,476	87,837	65,637	43,371	29,279	21,556	19,817	21,716	20,322	591,413
LLF large sales (3367)	90,084	118,894	203,254	214,986	170,693	127,292	92,754	38,000	20,823	16,773	18,583	20,549	1,132,685
LLF large FT-1 (33EN)	114,183	188,282	153,126	173,004	178,469	93,427	19,241	27,195	26,627	24,121	27,083	57,648	1,082,405
LLF large FT-2 (3321)	15,373	48,525	78,252	85,007	79,334	54,125	19,243	9,958	2,577	3,258	5,593	8,950	410,195
HLF large sales (2367)	39,869	48,246	60,897	58,631	56,053	44,662	38,472	27,051	27,383	29,741	31,675	25,770	488,450
HLF large FT-1 (23EN)	33,674	44,855	39,374	47,327	49,593	48,079	28,420	27,134	37,781	31,353	23,551	20,194	431,335
HLF large FT-2 (2321)	6,769	8,198	9,241	10,077	9,281	8,486	7,404	6,397	4,460	5,056	4,742	5,180	85,291
LLF XL sales (3496)	7,350	14,901	24,347	26,850	30,481	23,149	13,052	10,351	7,677	5,712	2,379	4,464	170,713
LLF XL FT-1 (34EN)	63,151	115,089	123,821	132,757	116,033	100,370	50,393	50,609	32,586	34,443	42,773	22,442	884,467
LLF XL FT-2 (3421)	407	1,940	2,637	2,168	1,638	1,441	755	212	-	-	-	350	11,548
HLF XL sales (2496)	20,467	25,235	26,874	33,041	27,459	21,867	20,894	18,718	18,683	21,018	32,329	37,117	303,702
HLF XL FT-1 (24EN)	309,123	455,231	507,667	344,318	317,541	597,038	376,307	234,835	276,914	355,576	402,991	512,893	4,690,434
HLF XL FT-2 (2421)	2,206	2,543	3,153	3,163	3,263	2,574	2,293	2,141	722	3,389	1,457	1,734	28,638
<b>Total</b>	<b>2,179,572</b>	<b>4,138,386</b>	<b>5,568,902</b>	<b>5,586,472</b>	<b>5,060,100</b>	<b>3,724,724</b>	<b>2,419,778</b>	<b>1,455,117</b>	<b>1,182,052</b>	<b>1,219,981</b>	<b>1,161,720</b>	<b>1,555,483</b>	<b>35,252,287</b>
Residential Non-Heat	50,306	62,403	75,559	81,531	80,806	61,869	58,168	46,582	28,457	38,140	32,091	35,639	651,551
Residential Heating	961,120	2,128,765	3,019,104	3,087,829	2,591,464	1,953,626	1,298,336	673,166	450,662	417,902	380,484	489,431	17,451,889
C&I Non-Heat	481,635	685,737	735,782	628,812	520,019	807,079	485,510	341,235	393,498	474,738	528,056	633,638	6,715,740
C&I Heating	686,511	1,261,481	1,738,457	1,788,300	1,867,811	902,150	577,764	394,134	309,435	289,201	221,089	396,774	10,433,107
<b>Total</b>	<b>2,179,572</b>	<b>4,138,386</b>	<b>5,568,902</b>	<b>5,586,472</b>	<b>5,060,100</b>	<b>3,724,724</b>	<b>2,419,778</b>	<b>1,455,117</b>	<b>1,182,052</b>	<b>1,219,981</b>	<b>1,161,720</b>	<b>1,555,483</b>	<b>35,252,287</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Actual Volumes by Month (Dth)**

	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	PY2009
Residential non-heat	53,717	76,741	105,168	104,454	87,796	80,975	51,342	39,059	43,168	33,686	32,573	40,239	748,916
Residential non-heat Low Income	-	1,415	1,998	2,363	2,559	2,234	1,767	509	770	574	505	799	15,493
Residential heat	1,018,709	1,934,569	2,841,943	3,169,269	2,456,092	1,854,829	924,654	507,219	450,719	353,365	343,477	521,159	16,376,005
Residential heat Low Income	-	158,314	221,411	246,102	218,543	179,606	105,449	61,202	54,251	38,489	36,910	56,558	1,376,833
C & I small (2107)	129,911	249,508	468,169	445,253	404,908	268,425	132,795	60,022	50,311	70,989	14,523	59,806	2,354,619
C & I medium sales (2237+2231)	310,213	243,837	671,653	659,141	531,366	396,440	236,239	166,571	125,259	125,008	93,651	157,283	3,716,661
C & I medium FT-1 (22EN)	38,827	96,524	110,676	82,539	35,466	52,656	32,662	32,158	28,666	32,367	32,213	53,988	628,743
C & I medium FT-2 (2221)	33,419	66,690	81,959	107,077	91,781	68,584	45,012	25,967	27,023	20,236	20,545	30,160	618,454
LLF large sales (3367)	90,946	150,768	207,332	187,711	161,876	163,810	38,235	35,286	13,869	10,258	11,365	32,912	1,104,366
LLF large FT-1 (33EN)	66,319	159,315	169,518	159,007	171,963	96,520	19,878	28,095	31,113	18,242	35,748	63,739	1,019,457
LLF large FT-2 (3321)	23,240	55,156	92,226	101,097	77,810	81,830	29,732	21,922	14,170	8,581	11,535	15,000	532,297
HLF large sales (2367)	35,774	42,622	55,007	50,620	43,136	39,064	28,277	33,657	23,064	34,057	23,736	19,311	428,325
HLF large FT-1 (23EN)	15,102	21,710	28,579	23,487	47,523	34,712	33,740	29,195	30,852	30,865	40,833	55,386	391,982
HLF large FT-2 (2321)	7,511	9,764	11,555	11,117	9,834	11,082	8,930	8,452	7,601	6,978	9,060	11,241	113,125
LLF XL sales (3496)	17,640	28,564	39,118	26,091	22,290	24,379	11,739	32,329	23,977	4,522	3,983	5,216	239,849
LLF XL FT-1 (34EN)	26,687	61,588	96,220	92,732	108,974	90,420	17,172	17,246	11,104	11,737	14,575	31,613	580,067
LLF XL FT-2 (3421)	974	1,667	2,198	2,619	2,210	398	2,151	67	20	1,387	416	559	14,667
HLF XL sales (2496)	38,746	34,887	33,224	40,848	15,222	32,309	30,871	27,656	27,604	23,265	19,997	15,096	339,725
HLF XL FT-1 (24EN)	105,109	383,324	532,973	510,433	452,019	436,256	305,372	474,300	357,704	362,526	347,127	357,414	4,624,556
HLF XL FT-2 (2421)	1,678	2,506	7,941	3,497	7,392	7,770	9,454	9,467	7,782	5,013	7,342	7,888	77,731
<b>Total</b>	<b>2,014,521</b>	<b>3,779,467</b>	<b>5,778,866</b>	<b>6,025,458</b>	<b>4,948,759</b>	<b>3,922,300</b>	<b>2,065,472</b>	<b>1,610,379</b>	<b>1,329,027</b>	<b>1,192,145</b>	<b>1,100,113</b>	<b>1,535,364</b>	<b>35,301,873</b>
<b>Residential Non-Heat</b>	53,717	78,156	107,165	106,817	90,355	83,209	53,109	39,568	43,937	34,260	33,078	41,038	764,410
<b>Residential Heating</b>	1,018,709	2,092,883	3,063,354	3,415,371	2,674,635	2,034,435	1,030,103	568,422	504,970	391,854	380,387	577,716	17,752,838
<b>C&amp;I Non-Heat</b>	242,747	591,336	779,954	722,541	610,592	613,848	449,307	614,885	483,274	495,071	480,307	520,324	6,604,186
<b>C&amp;I Heating</b>	699,349	1,017,092	1,828,393	1,780,729	1,573,177	1,190,808	532,953	387,505	296,846	270,960	206,341	396,286	10,180,438
<b>Total</b>	<b>2,014,521</b>	<b>3,779,467</b>	<b>5,778,866</b>	<b>6,025,458</b>	<b>4,948,759</b>	<b>3,922,300</b>	<b>2,065,472</b>	<b>1,610,379</b>	<b>1,329,027</b>	<b>1,192,145</b>	<b>1,100,113</b>	<b>1,535,364</b>	<b>35,301,873</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Actual Volumes by Month (Dth)**

	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	PY2010
Residential non-heat	53,856	72,115	106,210	85,485	75,061	56,075	43,806	34,773	31,337	26,038	28,156	33,639	646,551
Residential non-heat Low Income	1,228	1,917	3,920	3,982	3,696	2,198	1,465	866	681	585	655	756	21,950
Residential heat	976,902	1,638,849	3,063,886	2,797,453	2,247,579	1,308,570	766,843	457,783	366,674	321,108	338,065	425,857	14,709,569
Residential heat Low Income	109,132	175,730	337,180	316,550	289,312	165,907	107,144	65,672	47,950	40,882	43,526	51,457	1,750,443
C & I small (2107)	124,663	230,236	615,969	359,350	354,709	183,324	102,574	58,577	50,135	42,040	46,311	65,398	2,233,285
C & I medium sales (2237+2231)	314,436	270,710	634,937	578,461	463,798	297,246	193,601	121,130	103,779	83,546	93,831	112,544	3,268,019
C & I medium FT-1 (22EN)	55,583	92,625	131,042	102,284	73,803	50,005	41,460	30,070	27,430	29,752	29,611	44,696	708,361
C & I medium FT-2 (2221)	55,472	86,571	164,596	154,653	134,338	91,851	60,355	45,505	18,246	29,150	29,043	39,207	908,988
LLF large sales (3367)	59,283	76,014	133,885	131,862	131,935	104,362	20,098	10,448	9,062	2,183	19,128	20,028	718,288
LLF large FT-1 (33EN)	81,308	145,299	217,037	168,901	113,089	66,066	41,815	16,754	14,469	17,281	20,650	56,611	959,280
LLF large FT-2 (3321)	39,873	69,264	139,157	125,796	120,286	74,016	27,370	20,181	13,044	7,899	10,619	22,880	670,385
HLF large sales (2367)	34,257	32,092	54,375	37,214	37,022	29,800	27,637	12,714	13,576	11,450	19,746	19,243	329,126
HLF large FT-1 (23EN)	41,419	59,542	78,382	64,417	53,517	43,217	44,174	38,318	31,942	36,597	37,308	36,782	565,614
HLF large FT-2 (2321)	11,014	17,953	21,969	22,532	24,213	18,749	14,450	13,165	15,171	13,004	13,003	14,432	199,654
LLF XL sales (3496)	15,382	2,660	12,861	12,411	15,061	6,666	5,441	3,074	1,096	1,045	696	894	77,288
LLF XL FT-1 (34EN)	34,778	71,391	98,247	101,582	59,774	36,255	30,365	14,642	15,045	15,155	17,472	35,683	530,389
LLF XL FT-2 (3421)	1,075	9,076	12,561	9,369	7,434	6,540	3,427	962	641	868	1,845	1,560	55,358
HLF XL sales (2496)	21,508	23,255	33,402	21,646	21,085	17,333	8,375	20,281	20,243	17,061	14,664	11,070	229,923
HLF XL FT-1 (24EN)	328,378	411,956	588,365	446,217	413,809	371,585	326,588	376,509	345,151	361,560	321,204	372,632	4,663,953
HLF XL FT-2 (2421)	4,243	3,461	4,414	9,631	7,392	7,770	9,454	8,785	6,591	8,697	8,060	7,980	86,479
<b>Total</b>	<b>2,363,789</b>	<b>3,490,719</b>	<b>6,452,394</b>	<b>5,549,796</b>	<b>4,646,914</b>	<b>2,937,534</b>	<b>1,876,443</b>	<b>1,350,208</b>	<b>1,132,265</b>	<b>1,065,900</b>	<b>1,093,591</b>	<b>1,373,350</b>	<b>33,332,903</b>
<b>Residential Non-Heat</b>	55,084	74,032	110,131	89,467	78,757	58,273	45,272	35,639	32,018	26,623	28,811	34,396	668,502
<b>Residential Heating</b>	1,086,035	1,814,579	3,401,065	3,114,004	2,536,891	1,474,477	873,988	523,455	414,624	361,990	381,590	477,314	16,460,012
<b>C&amp;I Non-Heat</b>	496,402	640,885	911,948	703,940	630,841	538,458	472,139	499,842	460,104	478,120	443,596	506,834	6,783,110
<b>C&amp;I Heating</b>	726,269	961,222	2,029,250	1,642,385	1,400,425	866,327	485,045	291,272	225,519	199,167	239,594	354,806	9,421,280
<b>Total</b>	<b>2,363,789</b>	<b>3,490,719</b>	<b>6,452,394</b>	<b>5,549,796</b>	<b>4,646,914</b>	<b>2,937,534</b>	<b>1,876,443</b>	<b>1,350,208</b>	<b>1,132,265</b>	<b>1,065,900</b>	<b>1,093,591</b>	<b>1,373,350</b>	<b>33,332,903</b>





**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Normal Volumes by Month (Dth)**

	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	PY2005
Residential non-heat (1012)	53,577	62,571	73,849	73,807	61,925	63,744	56,003	45,835	44,652	35,972	60,431	40,092	672,457
Residential non-heat Low Income (1101)	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential heat (1247)	1,263,139	2,195,197	3,191,449	3,468,181	2,653,714	2,163,634	1,142,138	620,995	476,521	384,501	632,539	520,398	18,712,407
Residential heat Low Income (1301)	-	-	-	-	-	-	-	-	-	-	-	-	-
C & I small (2107)	136,595	278,203	439,229	503,127	367,726	274,386	126,124	60,394	52,009	43,762	93,326	62,794	2,437,675
C & I medium sales (2237+2231)	297,636	475,227	693,395	736,475	590,823	466,153	266,647	164,903	136,837	113,963	217,536	146,789	4,306,383
C & I medium FT-1 (22EN)	64,227	93,533	99,116	95,083	57,056	42,302	34,446	27,992	24,931	24,036	218,679	109,862	891,264
C & I medium FT-2 (2221)	27,706	40,716	57,418	57,391	50,041	45,435	31,371	18,532	17,488	16,221	24,414	16,721	403,454
LLF large sales (3367)	90,012	171,684	249,501	255,121	209,831	177,699	91,511	44,625	29,936	18,379	52,963	43,081	1,434,341
LLF large FT-1 (33EN)	110,081	154,057	183,186	157,526	142,628	94,955	44,762	22,955	16,305	16,071	15,993	44,021	1,002,540
LLF large FT-2 (3321)	11,682	23,791	32,755	30,372	24,265	11,629	6,640	2,886	2,281	1,285	829	4,740	153,155
HLF large sales (2367)	50,664	60,318	68,635	68,024	60,257	56,183	46,281	40,284	29,737	29,542	72,242	32,080	614,246
HLF large FT-1 (23EN)	41,315	48,444	56,073	48,520	45,695	34,091	30,026	28,540	25,506	27,125	29,124	25,551	440,011
HLF large FT-2 (2321)	(6,891)	4,170	6,207	6,967	6,302	5,678	3,957	4,382	4,326	4,533	8,600	3,878	52,109
LLF XL sales (3496)	18,459	33,861	40,142	40,615	31,316	18,581	6,876	2,746	1,772	1,451	2,793	3,663	202,276
LLF XL FT-1 (34EN)	74,375	106,117	110,251	187,290	53,891	39,001	24,402	16,780	13,830	14,043	19,565	35,902	695,445
LLF XL FT-2 (3421)	-	-	-	-	-	-	952	147	73	2	-	6	1,179
HLF XL sales (2496)	27,701	25,985	31,708	28,090	29,472	27,493	25,435	23,997	22,400	25,295	30,612	30,713	328,901
HLF XL FT-1 (24EN)	314,916	170,103	290,756	795,194	264,539	359,056	205,506	199,317	215,962	203,300	218,904	245,252	3,482,804
HLF XL FT-2 (2421)	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>2,575,192</b>	<b>3,943,978</b>	<b>5,623,669</b>	<b>6,551,783</b>	<b>4,649,481</b>	<b>3,880,019</b>	<b>2,143,078</b>	<b>1,325,309</b>	<b>1,114,564</b>	<b>959,481</b>	<b>1,698,549</b>	<b>1,365,543</b>	<b>35,830,647</b>
<b>Residential Non-Heat</b>	53,577	62,571	73,849	73,807	61,925	63,744	56,003	45,835	44,652	35,972	60,431	40,092	672,457
<b>Residential Heating</b>	1,263,139	2,195,197	3,191,449	3,468,181	2,653,714	2,163,634	1,142,138	620,995	476,521	384,501	632,539	520,398	18,712,407
<b>C&amp;I Non-Heat</b>	491,932	402,554	552,495	1,041,879	463,321	524,801	345,652	324,512	322,861	313,831	578,161	447,336	5,809,335
<b>C&amp;I Heating</b>	766,544	1,283,656	1,805,876	1,967,916	1,470,521	1,127,840	599,285	333,967	270,531	225,177	427,419	357,716	10,636,448
<b>Total</b>	<b>2,575,192</b>	<b>3,943,978</b>	<b>5,623,669</b>	<b>6,551,783</b>	<b>4,649,481</b>	<b>3,880,019</b>	<b>2,143,078</b>	<b>1,325,309</b>	<b>1,114,564</b>	<b>959,481</b>	<b>1,698,549</b>	<b>1,365,543</b>	<b>35,830,647</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Normal Volumes by Month (Dth)**

	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	PY2006
Residential non-heat	51,286	61,425	73,058	68,018	65,377	62,830	55,722	47,417	41,350	33,240	62,173	37,433	659,330
Residential non-heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential heat	1,203,037	2,134,696	3,059,696	3,092,158	2,792,360	2,128,403	1,146,929	689,471	471,889	379,546	688,424	524,479	18,311,088
Residential heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
C & I small (2107)	135,117	278,479	417,690	442,406	392,973	276,540	124,420	75,599	52,506	45,752	101,303	66,450	2,409,235
C & I medium sales (2237+2231)	284,292	466,159	658,848	672,026	618,087	449,728	260,889	168,631	125,104	108,726	231,988	145,824	4,190,302
C & I medium FT-1 (22EN)	70,422	115,044	99,481	103,881	75,387	52,918	41,987	30,759	22,266	20,691	27,944	28,852	689,632
C & I medium FT-2 (2221)	25,087	38,429	50,367	47,172	47,336	41,264	32,613	23,978	19,760	15,205	18,892	19,658	379,761
LLF large sales (3367)	103,242	172,709	233,447	263,568	245,123	142,284	84,708	43,783	26,659	19,301	29,013	41,925	1,405,762
LLF large FT-1 (33EN)	111,306	153,203	195,654	157,046	144,658	85,900	57,754	23,630	16,637	16,058	24,681	46,564	1,033,091
LLF large FT-2 (3321)	10,604	19,327	29,581	29,944	25,284	17,636	10,736	5,878	2,571	1,903	2,403	4,177	160,043
HLF large sales (2367)	39,650	53,684	57,386	50,497	58,968	55,603	41,328	37,011	26,495	21,869	34,180	30,115	506,785
HLF large FT-1 (23EN)	43,709	37,039	41,704	43,332	45,955	31,464	31,430	28,661	24,658	25,741	33,646	25,754	413,096
HLF large FT-2 (2321)	4,966	5,835	6,976	5,961	7,188	6,629	5,558	4,762	4,150	3,883	4,089	4,052	64,049
LLF XL sales (3496)	14,072	28,832	30,049	29,997	33,053	19,258	9,506	3,580	1,188	974	1,242	2,954	174,704
LLF XL FT-1 (34EN)	59,721	89,426	111,885	92,525	75,914	50,522	27,846	14,161	11,900	12,032	16,175	23,145	585,252
LLF XL FT-2 (3421)	982	3,112	4,698	3,335	3,713	2,869	1,215	631	-	-	4	-	20,558
HLF XL sales (2496)	35,348	46,029	34,594	48,358	42,050	33,377	27,740	35,697	24,486	26,459	31,804	29,458	415,400
HLF XL FT-1 (24EN)	246,982	287,655	287,743	277,432	288,075	228,877	233,878	214,392	255,986	198,304	284,059	209,565	3,012,948
HLF XL FT-2 (2421)	-	-	-	-	-	-	-	1,536	1,138	1,210	1,314	1,247	6,445
<b>Total</b>	<b>2,439,822</b>	<b>3,991,083</b>	<b>5,392,855</b>	<b>5,427,658</b>	<b>4,961,501</b>	<b>3,686,104</b>	<b>2,194,259</b>	<b>1,449,576</b>	<b>1,128,743</b>	<b>930,894</b>	<b>1,593,334</b>	<b>1,241,653</b>	<b>34,437,481</b>
Residential Non-Heat	51,286	61,425	73,058	68,018	65,377	62,830	55,722	47,417	41,350	33,240	62,173	37,433	659,330
Residential Heating	1,203,037	2,134,696	3,059,696	3,092,158	2,792,360	2,128,403	1,146,929	689,471	471,889	379,546	688,424	524,479	18,311,088
C&I Non-Heat	441,078	545,287	527,884	529,461	517,623	408,868	381,921	352,818	359,179	298,157	417,037	329,043	5,108,355
C&I Heating	744,422	1,249,675	1,732,217	1,738,021	1,586,141	1,086,003	609,687	359,870	256,325	219,951	425,700	350,697	10,358,709
<b>Total</b>	<b>2,439,822</b>	<b>3,991,083</b>	<b>5,392,855</b>	<b>5,427,658</b>	<b>4,961,501</b>	<b>3,686,104</b>	<b>2,194,259</b>	<b>1,449,576</b>	<b>1,128,743</b>	<b>930,894</b>	<b>1,593,334</b>	<b>1,241,653</b>	<b>34,437,481</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Normal Volumes by Month (Dth)**

	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	PY2007
Residential non-heat	46,712	62,291	63,906	68,533	70,165	60,621	54,387	44,481	38,144	33,949	37,765	35,812	616,765
Residential non-heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential heat	1,137,054	2,183,648	2,277,556	3,208,244	3,158,045	2,131,315	1,284,603	616,068	433,911	369,320	435,678	455,371	17,690,813
Residential heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
C & I small (2107)	123,027	282,177	290,620	469,119	454,302	279,150	147,318	66,394	45,400	45,468	48,495	46,040	2,297,511
C & I medium sales (2237+2231)	263,877	477,336	491,926	696,954	677,128	452,137	285,741	164,579	110,487	106,039	117,561	130,519	3,974,283
C & I medium FT-1 (22EN)	74,935	97,754	79,480	111,998	95,770	63,273	23,305	24,738	21,305	22,117	24,209	29,374	668,258
C & I medium FT-2 (2221)	33,451	48,266	59,907	76,200	80,005	59,244	40,235	27,085	19,689	18,100	19,927	18,586	500,694
LLF large sales (3367)	92,766	194,405	184,428	248,305	237,500	168,601	89,233	29,890	22,854	19,519	20,693	22,300	1,330,496
LLF large FT-1 (33EN)	134,553	182,587	193,895	167,060	173,588	87,413	36,456	33,542	21,878	19,284	25,133	59,804	1,135,194
LLF large FT-2 (3321)	10,221	32,120	43,941	47,803	48,383	35,351	21,113	10,939	2,762	3,820	5,323	6,018	267,794
HLF large sales (2367)	36,054	42,611	42,994	46,648	44,478	38,951	31,011	27,219	24,011	21,621	32,961	29,168	417,727
HLF large FT-1 (23EN)	43,595	48,769	39,160	47,070	49,324	47,818	36,315	40,209	36,950	37,660	27,671	28,309	482,850
HLF large FT-2 (2321)	5,181	8,496	7,656	7,702	10,812	7,573	6,730	5,567	4,232	3,957	4,966	4,514	77,386
LLF XL sales (3496)	9,123	18,930	14,490	19,507	18,964	10,808	4,379	1,663	767	453	2,075	3,305	104,464
LLF XL FT-1 (34EN)	72,258	93,264	103,304	93,498	104,528	46,509	17,909	15,993	13,882	13,850	14,807	40,480	630,282
LLF XL FT-2 (3421)	1,007	2,418	2,155	3,256	3,073	1,477	877	74	18	5	3	6	14,369
HLF XL sales (2496)	33,471	40,865	38,011	54,745	45,519	40,027	33,800	28,836	20,712	17,335	23,894	22,295	399,510
HLF XL FT-1 (24EN)	350,805	354,985	291,357	353,590	375,650	294,038	269,298	251,036	270,830	255,962	291,276	365,513	3,724,340
HLF XL FT-2 (2421)	1,337	544	3,564	1,648	2,218	2,038	1,901	1,393	993	893	1,766	1,974	20,269
<b>Total</b>	<b>2,469,427</b>	<b>4,171,464</b>	<b>4,228,350</b>	<b>5,721,880</b>	<b>5,649,452</b>	<b>3,826,345</b>	<b>2,384,611</b>	<b>1,389,706</b>	<b>1,088,825</b>	<b>989,351</b>	<b>1,134,203</b>	<b>1,299,389</b>	<b>34,353,005</b>
Residential Non-Heat	46,712	62,291	63,906	68,533	70,165	60,621	54,387	44,481	38,144	33,949	37,765	35,812	616,765
Residential Heating	1,137,054	2,183,648	2,277,556	3,208,244	3,158,045	2,131,315	1,284,603	616,068	433,911	369,320	435,678	455,371	17,690,813
C&I Non-Heat	545,378	594,023	502,222	623,401	623,771	493,718	402,360	378,998	379,033	359,545	406,743	481,147	5,790,339
C&I Heating	740,283	1,331,503	1,384,666	1,821,702	1,797,471	1,140,691	643,262	350,159	237,737	226,537	254,017	327,059	10,255,087
<b>Total</b>	<b>2,469,427</b>	<b>4,171,464</b>	<b>4,228,350</b>	<b>5,721,880</b>	<b>5,649,452</b>	<b>3,826,345</b>	<b>2,384,611</b>	<b>1,389,706</b>	<b>1,088,825</b>	<b>989,351</b>	<b>1,134,203</b>	<b>1,299,389</b>	<b>34,353,005</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Normal Volumes by Month (Dth)**

	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	PY2008
Residential non-heat	50,306	62,403	75,559	81,531	80,806	61,869	58,168	46,582	28,457	38,140	32,091	35,639	651,551
Residential non-heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential heat	953,726	2,117,881	3,053,579	3,100,831	2,595,411	1,972,777	1,298,336	713,967	450,662	416,724	380,484	488,166	17,542,543
Residential heat Low Income	-	-	-	-	-	-	-	-	-	-	-	-	-
C & I small (2107)	131,656	278,762	444,893	399,401	364,627	243,044	137,897	81,713	69,277	60,590	12,901	51,148	2,275,909
C & I medium sales (2237+2231)	231,069	430,691	632,058	655,962	840,576	197,139	201,058	157,484	128,312	120,567	90,061	208,852	3,893,828
C & I medium FT-1 (22EN)	69,527	101,429	88,576	132,255	56,829	84,373	11,720	24,959	27,555	28,605	31,311	30,750	687,890
C & I medium FT-2 (2221)	30,374	60,656	88,539	102,786	87,957	66,218	43,371	30,810	21,556	19,788	21,618	20,299	593,973
LLF large sales (3367)	89,177	118,268	205,692	215,934	170,965	128,586	92,754	40,518	20,823	16,743	18,518	20,519	1,138,497
LLF large FT-1 (33EN)	90,450	167,408	187,735	187,503	184,097	111,587	19,241	52,134	26,627	19,161	21,570	46,966	1,114,478
LLF large FT-2 (3321)	15,205	48,237	79,270	85,404	79,473	54,774	19,243	11,033	2,577	3,258	5,523	8,872	412,870
HLF large sales (2367)	39,869	48,246	60,897	58,631	56,053	44,662	38,472	27,051	27,383	29,741	31,675	25,770	488,450
HLF large FT-1 (23EN)	33,674	44,855	39,374	47,327	49,593	48,079	28,420	27,134	37,781	31,353	23,551	20,194	431,335
HLF large FT-2 (2321)	6,769	8,198	9,241	10,077	9,281	8,486	7,404	6,397	4,460	5,056	4,742	5,180	85,291
LLF XL sales (3496)	7,264	14,811	24,659	26,975	30,534	23,423	13,052	11,636	7,677	5,536	2,379	4,437	172,384
LLF XL FT-1 (34EN)	51,178	102,705	151,869	143,932	119,597	120,847	50,393	143,252	32,586	14,132	24,980	19,426	974,897
LLF XL FT-2 (3421)	402	1,928	2,671	2,178	1,641	1,458	755	240	-	-	-	345	11,619
HLF XL sales (2496)	20,467	25,235	26,874	33,041	27,459	21,867	20,894	18,718	18,683	21,018	32,329	37,117	303,702
HLF XL FT-1 (24EN)	309,123	455,231	507,667	344,318	317,541	597,038	376,307	234,835	276,914	355,576	402,991	512,893	4,690,434
HLF XL FT-2 (2421)	2,206	2,543	3,153	3,163	3,263	2,574	2,293	2,141	722	3,389	1,457	1,734	28,638
<b>Total</b>	<b>2,132,442</b>	<b>4,089,488</b>	<b>5,682,306</b>	<b>5,631,248</b>	<b>5,075,704</b>	<b>3,788,801</b>	<b>2,419,778</b>	<b>1,630,604</b>	<b>1,182,052</b>	<b>1,189,378</b>	<b>1,138,181</b>	<b>1,538,308</b>	<b>35,498,289</b>
Residential Non-Heat	50,306	62,403	75,559	81,531	80,806	61,869	58,168	46,582	28,457	38,140	32,091	35,639	651,551
Residential Heating	953,726	2,117,881	3,053,579	3,100,831	2,595,411	1,972,777	1,298,336	713,967	450,662	416,724	380,484	488,166	17,542,543
C&I Non-Heat	481,635	685,737	735,782	628,812	520,019	807,079	485,510	341,235	393,498	474,738	528,056	633,638	6,715,740
C&I Heating	646,775	1,223,466	1,817,386	1,820,075	1,879,468	947,076	577,764	528,820	309,435	259,775	197,549	380,865	10,588,455
<b>Total</b>	<b>2,132,442</b>	<b>4,089,488</b>	<b>5,682,306</b>	<b>5,631,248</b>	<b>5,075,704</b>	<b>3,788,801</b>	<b>2,419,778</b>	<b>1,630,604</b>	<b>1,182,052</b>	<b>1,189,378</b>	<b>1,138,181</b>	<b>1,538,308</b>	<b>35,498,289</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Normal Volumes by Month (Dth)**

	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	PY2009
Residential non-heat	53,717	76,741	105,168	104,454	87,796	80,975	51,342	39,059	43,168	33,686	32,573	40,239	748,916
Residential non-heat Low Income	-	1,415	1,998	2,363	2,559	2,234	1,767	509	770	574	505	799	15,493
Residential heat	1,010,430	1,937,489	2,811,324	3,182,820	2,445,307	1,853,536	929,786	502,216	442,674	353,365	343,477	518,819	16,331,244
Residential heat Low Income	-	158,546	218,993	247,174	217,505	179,475	106,043	60,623	53,342	38,489	36,910	56,300	1,373,400
C & I small (2107)	128,401	249,947	462,523	447,322	402,874	268,205	133,890	58,598	47,189	67,315	14,523	59,160	2,339,947
C & I medium sales (2237+2231)	307,374	244,112	664,493	661,884	529,093	396,177	237,539	164,208	122,356	123,094	93,651	156,400	3,700,382
C & I medium FT-1 (22EN)	38,827	96,524	110,676	82,539	35,466	52,656	32,662	32,158	28,666	32,367	32,213	53,988	628,743
C & I medium FT-2 (2221)	33,214	66,776	81,214	107,434	91,386	68,540	45,196	25,946	27,023	19,761	20,209	29,916	616,616
LLF large sales (3367)	89,994	151,011	204,960	188,547	161,111	163,682	38,443	34,658	13,869	10,251	11,295	32,571	1,100,393
LLF large FT-1 (33EN)	54,382	164,479	132,826	172,468	156,154	95,207	19,878	21,258	6,933	13,096	16,142	49,007	901,830
LLF large FT-2 (3321)	23,023	55,249	91,174	101,553	77,441	81,763	29,954	21,421	13,456	8,581	11,535	14,910	530,059
HLF large sales (2367)	35,774	42,622	55,007	50,620	43,136	39,064	28,277	33,657	23,064	34,057	23,736	19,311	428,325
HLF large FT-1 (23EN)	15,102	21,710	28,579	23,487	47,523	34,712	33,740	29,195	30,852	30,865	40,833	55,386	391,982
HLF large FT-2 (2321)	7,511	9,764	11,555	11,117	9,834	11,082	8,930	8,452	7,601	6,978	9,060	11,241	113,125
LLF XL sales (3496)	17,443	28,613	38,660	26,206	22,185	24,360	11,827	31,418	22,161	4,385	3,904	5,172	236,332
LLF XL FT-1 (34EN)	22,564	63,466	75,092	100,644	98,805	89,045	18,281	13,325	5,507	11,737	10,490	25,430	534,386
LLF XL FT-2 (3421)	962	1,670	2,171	2,631	2,199	398	2,170	65	19	1,316	412	557	14,570
HLF XL sales (2496)	38,746	34,887	33,224	40,848	15,222	32,309	30,871	27,656	27,604	23,265	19,997	15,096	339,725
HLF XL FT-1 (24EN)	105,109	383,324	532,973	510,433	452,019	436,256	305,372	474,300	357,704	362,526	347,127	357,414	4,624,556
HLF XL FT-2 (2421)	1,678	2,506	7,941	3,497	7,392	7,770	9,454	9,467	7,782	5,013	7,342	7,888	77,731
<b>Total</b>	<b>1,984,251</b>	<b>3,790,848</b>	<b>5,670,550</b>	<b>6,068,042</b>	<b>4,905,008</b>	<b>3,917,444</b>	<b>2,075,423</b>	<b>1,588,189</b>	<b>1,281,741</b>	<b>1,180,722</b>	<b>1,075,933</b>	<b>1,509,605</b>	<b>35,047,755</b>
<b>Residential Non-Heat</b>	53,717	78,156	107,165	106,817	90,355	83,209	53,109	39,568	43,937	34,260	33,078	41,038	764,410
<b>Residential Heating</b>	1,010,430	2,096,035	3,030,317	3,429,994	2,662,812	2,033,010	1,035,829	562,839	496,016	391,854	380,387	575,120	17,704,644
<b>C&amp;I Non-Heat</b>	242,747	591,336	779,954	722,541	610,592	613,848	449,307	614,885	483,274	495,071	480,307	520,324	6,604,186
<b>C&amp;I Heating</b>	677,357	1,025,321	1,753,113	1,808,690	1,541,250	1,187,377	537,177	370,897	258,514	259,537	182,160	373,123	9,974,515
<b>Total</b>	<b>1,984,251</b>	<b>3,790,848</b>	<b>5,670,550</b>	<b>6,068,042</b>	<b>4,905,008</b>	<b>3,917,444</b>	<b>2,075,423</b>	<b>1,588,189</b>	<b>1,281,741</b>	<b>1,180,722</b>	<b>1,075,933</b>	<b>1,509,605</b>	<b>35,047,755</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Normal Volumes by Month (Dth)**

	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	PY2010
Residential non-heat	53,856	72,115	106,210	85,485	75,061	56,075	43,806	34,773	31,337	26,038	28,156	33,639	646,551
Residential non-heat Low Income	1,228	1,917	3,920	3,982	3,696	2,198	1,465	866	681	585	655	756	21,950
Residential heat	991,861	1,631,484	3,062,182	2,810,010	2,305,900	1,342,487	803,635	479,644	366,674	321,108	340,191	427,396	14,882,573
Residential heat Low Income	110,778	174,926	336,985	318,176	296,566	170,536	112,091	68,446	47,950	40,882	43,774	51,635	1,772,744
C & I small (2107)	127,214	228,999	615,589	361,129	365,123	189,296	110,179	66,130	50,135	42,040	46,673	65,750	2,268,256
C & I medium sales (2237+2231)	319,656	269,703	634,598	580,998	475,094	304,548	202,327	126,581	103,779	83,546	94,824	113,017	3,308,671
C & I medium FT-1 (22EN)	55,583	92,625	131,042	102,284	73,803	50,005	41,460	30,070	27,430	29,752	29,611	44,696	708,361
C & I medium FT-2 (2221)	56,444	86,162	164,502	155,376	137,959	94,530	64,112	50,428	18,246	29,150	29,090	39,356	925,355
LLF large sales (3367)	60,434	75,635	133,807	132,490	135,692	107,772	20,913	10,704	9,062	2,183	20,275	20,312	729,281
LLF large FT-1 (33EN)	111,228	130,087	214,485	184,607	170,852	100,997	88,272	25,939	14,469	13,570	29,890	70,293	1,154,687
LLF large FT-2 (3321)	40,580	68,919	139,074	126,392	123,589	76,037	28,903	21,895	13,044	7,899	10,802	23,114	680,250
HLF large sales (2367)	34,257	32,092	54,375	37,214	37,022	29,800	27,637	12,714	13,576	11,450	19,746	19,243	329,126
HLF large FT-1 (23EN)	41,419	59,542	78,382	64,417	53,517	43,217	44,174	38,318	31,942	36,597	37,308	36,782	565,614
HLF large FT-2 (2321)	11,014	17,953	21,969	22,532	24,213	18,749	14,450	13,165	15,171	13,004	13,003	14,432	199,654
LLF XL sales (3496)	15,710	2,652	12,854	12,470	15,490	6,866	5,821	3,427	1,096	1,029	696	897	79,008
LLF XL FT-1 (34EN)	45,382	64,439	97,151	110,987	89,323	53,995	63,002	26,135	15,045	15,155	20,370	41,912	642,898
LLF XL FT-2 (3421)	1,086	9,027	12,553	9,414	7,643	6,751	3,671	1,022	641	868	1,914	1,571	56,161
HLF XL sales (2496)	21,508	23,255	33,402	21,646	21,085	17,333	8,375	20,281	20,243	17,061	14,664	11,070	229,923
HLF XL FT-1 (24EN)	328,378	411,956	588,365	446,217	413,809	371,585	326,588	376,509	345,151	361,560	321,204	372,632	4,663,953
HLF XL FT-2 (2421)	4,243	3,461	4,414	9,631	7,392	7,770	9,454	8,785	6,591	8,697	8,060	7,980	86,479
<b>Total</b>	<b>2,431,860</b>	<b>3,456,951</b>	<b>6,445,858</b>	<b>5,595,457</b>	<b>4,832,830</b>	<b>3,050,545</b>	<b>2,020,335</b>	<b>1,415,831</b>	<b>1,132,265</b>	<b>1,062,173</b>	<b>1,110,905</b>	<b>1,396,483</b>	<b>33,951,495</b>
Residential Non-Heat	55,084	74,032	110,131	89,467	78,757	58,273	45,272	35,639	32,018	26,623	28,811	34,396	668,502
Residential Heating	1,102,640	1,806,410	3,399,167	3,128,186	2,602,466	1,513,022	915,726	548,090	414,624	361,990	383,965	479,031	16,655,317
C&I Non-Heat	496,402	640,885	911,948	703,940	630,841	538,458	472,139	499,842	460,104	478,120	443,596	506,834	6,783,110
C&I Heating	777,734	935,624	2,024,613	1,673,863	1,520,766	940,793	587,200	332,261	225,519	195,439	254,534	376,222	9,844,567
<b>Total</b>	<b>2,431,860</b>	<b>3,456,951</b>	<b>6,445,858</b>	<b>5,595,457</b>	<b>4,832,830</b>	<b>3,050,545</b>	<b>2,020,335</b>	<b>1,415,831</b>	<b>1,132,265</b>	<b>1,062,173</b>	<b>1,110,905</b>	<b>1,396,483</b>	<b>33,951,495</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical Normal Volumes by Month (Dth)**

	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	PY2011
Residential non-heat	40,798	63,453	80,291	77,880	71,380	60,827	42,710	35,440	29,795	25,513	28,158	28,795	585,039
Residential non-heat Low Income	1,398	2,777	3,680	3,784	3,139	2,654	1,609	945	705	596	638	667	22,592
Residential heat	918,045	1,995,021	2,936,579	3,002,716	2,553,935	1,846,415	916,609	516,544	370,171	338,829	351,772	377,847	16,124,484
Residential heat Low Income	104,532	203,666	292,433	303,056	262,740	220,446	115,650	72,022	51,918	42,811	45,824	48,550	1,763,648
C & I small (2107)	114,919	289,834	483,864	493,167	406,690	275,931	123,879	69,068	55,335	46,827	46,031	47,654	2,453,199
C & I medium sales (2237+2231)	192,979	372,275	550,825	568,421	493,911	354,285	201,943	120,519	123,891	55,774	95,226	98,205	3,228,256
C & I medium FT-1 (22EN)	61,779	114,485	116,328	113,624	86,157	68,251	34,922	34,237	26,402	30,027	32,048	43,552	761,810
C & I medium FT-2 (2221)	67,147	135,842	200,296	214,662	205,620	132,946	83,076	54,838	42,219	35,737	39,522	55,315	1,267,220
LLF large sales (3367)	40,611	84,183	115,964	148,620	116,811	90,910	30,860	26,849	11,428	11,547	5,509	11,857	695,150
LLF large FT-1 (33EN)	86,813	152,842	167,323	174,967	141,583	106,469	41,813	17,869	15,214	18,762	26,110	41,884	991,648
LLF large FT-2 (3321)	42,906	90,262	136,722	144,473	126,445	88,585	56,279	14,218	15,879	12,410	15,106	19,828	763,112
HLF large sales (2367)	22,061	30,759	35,858	22,148	38,724	25,991	18,567	17,110	15,952	16,614	15,490	14,239	273,513
HLF large FT-1 (23EN)	42,068	62,569	61,042	61,697	52,273	45,009	35,881	31,477	25,870	30,954	30,335	32,424	511,598
HLF large FT-2 (2321)	17,620	23,830	30,595	29,778	29,366	24,528	18,634	15,697	15,021	13,286	14,111	13,712	246,178
LLF XL sales (3496)	2,026	1,937	5,132	5,494	4,265	4,131	2,865	1,934	1,664	1,369	895	4,891	36,604
LLF XL FT-1 (34EN)	78,595	140,548	148,556	151,346	122,463	105,666	48,088	15,908	12,768	15,780	24,948	41,259	905,927
LLF XL FT-2 (3421)	4,516	8,006	10,795	14,933	11,572	8,565	3,949	2,156	2,808	1,700	1,506	4,439	74,946
HLF XL sales (2496)	14,225	36,967	35,072	18,843	24,074	17,184	14,335	12,683	12,210	10,280	12,906	11,450	220,229
HLF XL FT-1 (24EN)	402,648	485,952	489,654	484,193	460,559	414,922	355,564	367,239	333,727	375,274	347,418	351,172	4,868,321
HLF XL FT-2 (2421)	9,403	16,731	20,902	22,720	19,881	17,947	13,729	12,681	10,663	10,998	11,069	9,634	176,358
<b>Total</b>	<b>2,265,090</b>	<b>4,311,938</b>	<b>5,921,909</b>	<b>6,056,522</b>	<b>5,231,586</b>	<b>3,911,664</b>	<b>2,160,960</b>	<b>1,439,434</b>	<b>1,173,641</b>	<b>1,095,090</b>	<b>1,144,621</b>	<b>1,257,375</b>	<b>35,969,831</b>
<b>Residential Non-Heat</b>	42,196	66,230	83,970	81,663	74,518	63,482	44,319	36,385	30,500	26,109	28,796	29,462	607,631
<b>Residential Heating</b>	1,022,578	2,198,687	3,229,012	3,305,773	2,816,675	2,066,861	1,032,259	588,566	422,089	381,640	397,597	426,397	17,888,132
<b>C&amp;I Non-Heat</b>	569,804	771,292	789,449	753,002	711,033	613,833	491,632	491,124	439,845	487,433	463,376	476,183	7,058,007
<b>C&amp;I Heating</b>	630,513	1,275,730	1,819,477	1,916,084	1,629,359	1,167,489	592,751	323,359	281,207	199,908	254,853	325,333	10,416,061
<b>Total</b>	<b>2,265,090</b>	<b>4,311,938</b>	<b>5,921,909</b>	<b>6,056,522</b>	<b>5,231,586</b>	<b>3,911,664</b>	<b>2,160,960</b>	<b>1,439,434</b>	<b>1,173,641</b>	<b>1,095,090</b>	<b>1,144,621</b>	<b>1,257,375</b>	<b>35,969,831</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical number of Customers by Month (Dth)**

	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	PY2005
Residential non-heat (1012)	34,464	34,450	34,321	34,254	34,124	33,996	33,921	33,780	33,715	33,629	33,610	33,564	33,986
Residential non-heat Low Income (1101)	-	-	-	-	-	-	-	-	-	-	-	-	-
Residential heat (1247)	187,785	189,219	190,126	190,318	190,151	189,105	187,757	186,490	185,392	184,519	184,974	186,358	187,683
Residential heat Low Income (1301)	-	-	-	-	-	-	-	-	-	-	-	-	-
C & I small (2107)	17,739	17,909	18,025	18,049	18,027	17,841	17,668	17,521	17,353	17,319	17,428	17,598	17,706
C & I medium sales (2237+2231)	3,842	3,860	3,865	3,880	3,883	3,866	3,837	3,836	3,822	3,720	3,654	3,689	3,813
C & I medium FT-1 (22EN)	413	414	414	409	409	412	413	412	412	413	413	413	412
C & I medium FT-2 (2221)	307	302	298	301	299	303	301	301	301	298	294	280	299
LLF large sales (3367)	237	239	243	243	245	242	242	244	245	237	232	238	241
LLF large FT-1 (33EN)	162	162	161	161	161	161	161	161	164	165	165	161	162
LLF large FT-2 (3321)	26	29	53	29	29	29	29	29	27	27	27	27	30
HLF large sales (2367)	89	89	89	89	89	89	88	87	86	85	82	83	87
HLF large FT-1 (23EN)	65	65	64	64	64	64	64	64	64	64	58	59	63
HLF large FT-2 (2321)	8	8	8	9	9	9	9	9	11	11	11	12	10
LLF XL sales (3496)	12	12	12	12	11	11	11	11	11	11	11	11	11
LLF XL FT-1 (34EN)	27	27	27	27	28	28	27	27	27	27	23	23	27
LLF XL FT-2 (3421)	-	-	-	-	-	-	1	1	1	1	1	1	1
HLF XL sales (2496)	14	14	15	15	16	15	15	15	15	16	17	17	15
HLF XL FT-1 (24EN)	40	40	41	41	41	41	41	41	42	42	41	41	41
HLF XL FT-2 (2421)	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>245,230</b>	<b>246,839</b>	<b>247,762</b>	<b>247,901</b>	<b>247,586</b>	<b>246,212</b>	<b>244,585</b>	<b>243,029</b>	<b>241,688</b>	<b>240,584</b>	<b>241,041</b>	<b>242,575</b>	<b>244,586</b>
<b>Residential Non-Heat</b>	34,464	34,450	34,321	34,254	34,124	33,996	33,921	33,780	33,715	33,629	33,610	33,564	33,986
<b>Residential Heating</b>	187,785	189,219	190,126	190,318	190,151	189,105	187,757	186,490	185,392	184,519	184,974	186,358	187,683
<b>C&amp;I Non-Heat</b>	216	216	217	218	219	218	217	216	218	218	209	212	216
<b>C&amp;I Heating</b>	22,765	22,954	23,098	23,111	23,092	22,893	22,690	22,543	22,363	22,218	22,248	22,441	22,701
<b>Total</b>	<b>245,230</b>	<b>246,839</b>	<b>247,762</b>	<b>247,901</b>	<b>247,586</b>	<b>246,212</b>	<b>244,585</b>	<b>243,029</b>	<b>241,688</b>	<b>240,584</b>	<b>241,041</b>	<b>242,575</b>	<b>244,586</b>



**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical number of Customers by Month (Dth)**

	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	PY2006
<b>Residential non-heat</b>	33,525	33,450	33,237	33,179	33,032	32,947	32,848	32,797	32,755	32,688	32,739	32,693	32,991
<b>Residential non-heat Low Income</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Residential heat</b>	188,863	190,870	191,032	191,610	191,513	190,633	189,275	188,137	187,307	186,745	187,575	188,985	189,379
<b>Residential heat Low Income</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>C &amp; I small (2107)</b>	17,840	18,130	18,149	18,213	18,170	18,051	17,878	17,705	17,564	17,504	17,497	17,648	17,862
<b>C &amp; I medium sales (2237+2231)</b>	3,721	3,763	3,774	3,790	3,765	3,684	3,654	3,634	3,617	3,558	3,583	3,605	3,679
<b>C &amp; I medium FT-1 (22EN)</b>	410	412	406	403	409	409	409	401	398	397	394	394	404
<b>C &amp; I medium FT-2 (2221)</b>	274	265	253	264	280	297	343	355	364	357	358	352	314
<b>LLF large sales (3367)</b>	243	244	246	246	244	243	223	224	223	228	236	242	237
<b>LLF large FT-1 (33EN)</b>	160	160	159	159	160	160	175	176	178	177	173	173	168
<b>LLF large FT-2 (3321)</b>	27	27	27	27	29	29	30	30	30	32	30	30	29
<b>HLF large sales (2367)</b>	83	85	85	84	84	84	82	81	78	80	79	80	82
<b>HLF large FT-1 (23EN)</b>	58	56	56	56	56	57	57	57	57	57	62	62	58
<b>HLF large FT-2 (2321)</b>	12	12	12	13	13	13	14	15	15	14	13	13	13
<b>LLF XL sales (3496)</b>	10	10	10	10	10	10	10	10	10	8	7	7	9
<b>LLF XL FT-1 (34EN)</b>	24	24	25	25	24	24	24	24	24	23	25	24	24
<b>LLF XL FT-2 (3421)</b>	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>HLF XL sales (2496)</b>	17	20	19	19	18	18	17	15	15	16	15	15	17
<b>HLF XL FT-1 (24EN)</b>	41	40	41	41	42	42	41	44	42	44	47	47	43
<b>HLF XL FT-2 (2421)</b>	-	-	-	-	-	-	-	1	1	1	1	1	0
<b>Total</b>	<b>245,309</b>	<b>247,569</b>	<b>247,532</b>	<b>248,140</b>	<b>247,850</b>	<b>246,702</b>	<b>245,081</b>	<b>243,707</b>	<b>242,679</b>	<b>241,930</b>	<b>242,835</b>	<b>244,372</b>	<b>245,309</b>
<b>Residential Non-Heat</b>	33,525	33,450	33,237	33,179	33,032	32,947	32,848	32,797	32,755	32,688	32,739	32,693	32,991
<b>Residential Heating</b>	188,863	190,870	191,032	191,610	191,513	190,633	189,275	188,137	187,307	186,745	187,575	188,985	189,379
<b>C&amp;I Non-Heat</b>	211	213	213	213	213	214	211	213	208	212	217	218	213
<b>C&amp;I Heating</b>	22,710	23,036	23,050	23,138	23,092	22,908	22,747	22,560	22,409	22,285	22,304	22,476	22,726
<b>Total</b>	<b>245,309</b>	<b>247,569</b>	<b>247,532</b>	<b>248,140</b>	<b>247,850</b>	<b>246,702</b>	<b>245,081</b>	<b>243,707</b>	<b>242,679</b>	<b>241,930</b>	<b>242,835</b>	<b>244,372</b>	<b>245,309</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical number of Customers by Month (Dth)**

	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	PY2007
<b>Residential non-heat</b>	32,658	32,638	32,503	32,315	32,267	32,171	32,102	32,031	31,973	31,956	31,984	31,991	32,216
<b>Residential non-heat Low Income</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Residential heat</b>	190,988	192,389	193,198	193,367	193,505	192,556	191,007	190,072	189,224	188,747	189,081	190,389	191,210
<b>Residential heat Low Income</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>C &amp; I small (2107)</b>	17,912	18,213	18,368	18,382	18,454	18,276	18,137	17,954	17,771	17,683	17,683	17,736	18,047
<b>C &amp; I medium sales (2237+2231)</b>	3,634	3,634	3,644	3,641	3,638	3,617	3,584	3,596	3,587	3,593	3,607	3,611	3,616
<b>C &amp; I medium FT-1 (22EN)</b>	391	382	383	383	386	386	387	392	392	394	393	394	389
<b>C &amp; I medium FT-2 (2221)</b>	362	390	391	396	397	400	400	400	396	391	387	393	392
<b>LLF large sales (3367)</b>	229	231	227	227	225	224	223	222	221	219	215	215	223
<b>LLF large FT-1 (33EN)</b>	174	171	174	174	176	177	175	175	175	175	170	170	174
<b>LLF large FT-2 (3321)</b>	46	52	52	52	52	51	50	49	49	49	52	54	51
<b>HLF large sales (2367)</b>	78	78	76	76	75	75	75	74	74	80	82	85	77
<b>HLF large FT-1 (23EN)</b>	63	62	63	63	64	64	64	64	64	65	63	63	64
<b>HLF large FT-2 (2321)</b>	15	15	14	14	15	15	15	15	15	17	17	18	15
<b>LLF XL sales (3496)</b>	7	7	6	6	6	6	6	6	6	6	7	7	6
<b>LLF XL FT-1 (34EN)</b>	24	24	26	26	26	26	26	27	27	27	26	26	26
<b>LLF XL FT-2 (3421)</b>	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>HLF XL sales (2496)</b>	16	16	16	15	16	16	16	15	15	11	12	12	15
<b>HLF XL FT-1 (24EN)</b>	46	47	46	49	48	48	49	51	51	51	55	57	50
<b>HLF XL FT-2 (2421)</b>	1	1	1	1	1	1	1	1	1	2	2	2	1
<b>Total</b>	<b>246,645</b>	<b>248,351</b>	<b>249,189</b>	<b>249,188</b>	<b>249,352</b>	<b>248,110</b>	<b>246,318</b>	<b>245,145</b>	<b>244,042</b>	<b>243,467</b>	<b>243,837</b>	<b>245,224</b>	<b>246,572</b>
<b>Residential Non-Heat</b>	32,658	32,638	32,503	32,315	32,267	32,171	32,102	32,031	31,973	31,956	31,984	31,991	32,216
<b>Residential Heating</b>	190,988	192,389	193,198	193,367	193,505	192,556	191,007	190,072	189,224	188,747	189,081	190,389	191,210
<b>C&amp;I Non-Heat</b>	219	219	216	218	219	219	220	220	220	226	231	237	222
<b>C&amp;I Heating</b>	22,780	23,105	23,272	23,288	23,361	23,164	22,989	22,822	22,625	22,538	22,541	22,607	22,924
<b>Total</b>	<b>246,645</b>	<b>248,351</b>	<b>249,189</b>	<b>249,188</b>	<b>249,352</b>	<b>248,110</b>	<b>246,318</b>	<b>245,145</b>	<b>244,042</b>	<b>243,467</b>	<b>243,837</b>	<b>245,224</b>	<b>246,572</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical number of Customers by Month (Dth)**

	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	PY2008
<b>Residential non-heat</b>	31,997	31,996	31,899	31,807	31,693	31,568	31,460	31,350	31,290	31,268	31,264	31,308	31,575
<b>Residential non-heat Low Income</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Residential heat</b>	192,730	193,904	194,327	194,525	194,316	193,500	192,470	191,410	190,200	189,935	189,947	191,776	192,420
<b>Residential heat Low Income</b>	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>C &amp; I small (2107)</b>	18,186	18,390	18,468	18,462	18,442	18,296	18,155	17,949	17,800	17,713	17,666	17,877	18,117
<b>C &amp; I medium sales (2237+2231)</b>	3,606	3,608	3,607	3,612	3,609	3,654	3,642	3,629	3,612	3,489	3,486	3,508	3,589
<b>C &amp; I medium FT-1 (22EN)</b>	392	391	388	390	385	383	383	384	384	383	391	406	388
<b>C &amp; I medium FT-2 (2221)</b>	415	427	450	442	445	395	394	394	399	414	404	399	415
<b>LLF large sales (3367)</b>	205	201	208	206	208	226	221	224	222	211	210	221	214
<b>LLF large FT-1 (33EN)</b>	171	170	166	169	172	169	171	170	170	171	160	152	168
<b>LLF large FT-2 (3321)</b>	65	77	81	80	79	61	63	66	66	65	65	68	70
<b>HLF large sales (2367)</b>	85	86	85	85	85	85	87	86	88	82	83	83	85
<b>HLF large FT-1 (23EN)</b>	63	63	63	63	63	63	62	62	63	62	71	70	64
<b>HLF large FT-2 (2321)</b>	18	17	16	17	17	17	17	17	17	16	16	16	17
<b>LLF XL sales (3496)</b>	7	7	7	8	8	8	8	8	8	8	9	9	8
<b>LLF XL FT-1 (34EN)</b>	28	28	29	29	29	29	28	28	28	28	22	22	27
<b>LLF XL FT-2 (3421)</b>	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>HLF XL sales (2496)</b>	11	11	11	11	11	11	11	11	11	13	13	15	12
<b>HLF XL FT-1 (24EN)</b>	59	61	65	66	65	65	65	65	66	66	60	60	64
<b>HLF XL FT-2 (2421)</b>	2	2	2	2	2	2	2	2	2	2	2	2	2
<b>Total</b>	<b>248,041</b>	<b>249,440</b>	<b>249,873</b>	<b>249,975</b>	<b>249,630</b>	<b>248,533</b>	<b>247,240</b>	<b>245,856</b>	<b>244,427</b>	<b>243,927</b>	<b>243,870</b>	<b>245,993</b>	<b>247,234</b>
<b>Residential Non-Heat</b>	31,997	31,996	31,899	31,807	31,693	31,568	31,460	31,350	31,290	31,268	31,264	31,308	31,575
<b>Residential Heating</b>	192,730	193,904	194,327	194,525	194,316	193,500	192,470	191,410	190,200	189,935	189,947	191,776	192,420
<b>C&amp;I Non-Heat</b>	238	240	242	244	243	243	244	243	247	241	245	246	243
<b>C&amp;I Heating</b>	23,076	23,300	23,405	23,399	23,378	23,222	23,066	22,853	22,690	22,483	22,414	22,663	22,996
<b>Total</b>	<b>248,041</b>	<b>249,440</b>	<b>249,873</b>	<b>249,975</b>	<b>249,630</b>	<b>248,533</b>	<b>247,240</b>	<b>245,856</b>	<b>244,427</b>	<b>243,927</b>	<b>243,870</b>	<b>245,993</b>	<b>247,234</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical number of Customers by Month (Dth)**

	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	PY2009
<b>Residential non-heat</b>	31,361	31,086	30,989	30,691	30,378	30,200	30,081	29,927	29,869	29,774	29,719	29,718	30,316
<b>Residential non-heat Low Income</b>	-	260	255	255	350	371	362	344	337	332	325	328	293
<b>Residential heat</b>	193,986	180,845	181,695	181,986	179,072	177,145	174,271	172,822	173,002	172,826	173,132	174,750	177,961
<b>Residential heat Low Income</b>	-	14,380	14,346	14,394	17,232	17,994	20,188	19,990	19,548	19,149	18,922	19,232	16,281
<b>C &amp; I small (2107)</b>	18,183	18,412	18,530	18,524	18,356	18,203	18,060	17,879	17,773	17,777	17,832	18,093	18,135
<b>C &amp; I medium sales (2237+2231)</b>	3,521	3,541	3,530	3,537	3,502	3,503	3,466	3,418	3,384	3,215	3,231	3,254	3,425
<b>C &amp; I medium FT-1 (22EN)</b>	404	405	393	392	391	393	400	408	414	413	425	427	405
<b>C &amp; I medium FT-2 (2221)</b>	390	441	472	482	491	504	534	561	581	589	590	602	520
<b>LLF large sales (3367)</b>	225	224	217	213	206	203	193	182	179	145	141	146	190
<b>LLF large FT-1 (33EN)</b>	148	148	146	148	150	149	149	151	151	149	145	145	148
<b>LLF large FT-2 (3321)</b>	68	80	92	94	96	98	108	114	117	104	106	104	98
<b>HLF large sales (2367)</b>	82	83	82	82	79	79	74	73	74	61	62	64	75
<b>HLF large FT-1 (23EN)</b>	68	67	66	67	67	68	69	69	68	68	70	70	68
<b>HLF large FT-2 (2321)</b>	16	18	19	19	19	19	23	25	25	27	31	31	23
<b>LLF XL sales (3496)</b>	9	9	8	9	8	9	8	8	8	9	8	8	8
<b>LLF XL FT-1 (34EN)</b>	22	22	22	22	22	22	22	22	22	22	19	19	22
<b>LLF XL FT-2 (3421)</b>	1	1	1	2	2	1	2	2	2	2	2	3	2
<b>HLF XL sales (2496)</b>	14	14	12	11	10	10	9	10	11	9	9	9	11
<b>HLF XL FT-1 (24EN)</b>	60	60	58	59	62	67	67	66	65	66	62	62	63
<b>HLF XL FT-2 (2421)</b>	2	3	4	6	6	5	5	5	5	3	3	3	4
<b>Total</b>	<b>248,560</b>	<b>250,099</b>	<b>250,937</b>	<b>250,993</b>	<b>250,499</b>	<b>249,043</b>	<b>248,091</b>	<b>246,076</b>	<b>245,635</b>	<b>244,740</b>	<b>244,834</b>	<b>247,068</b>	<b>248,048</b>
<b>Residential Non-Heat</b>	31,361	31,346	31,244	30,946	30,728	30,571	30,443	30,271	30,206	30,106	30,044	30,046	30,609
<b>Residential Heating</b>	193,986	195,225	196,041	196,380	196,304	195,139	194,459	192,812	192,550	191,975	192,054	193,982	194,242
<b>C&amp;I Non-Heat</b>	242	245	241	244	243	248	247	248	248	234	237	239	243
<b>C&amp;I Heating</b>	22,971	23,283	23,411	23,423	23,224	23,085	22,942	22,745	22,631	22,425	22,499	22,801	22,953
<b>Total</b>	<b>248,560</b>	<b>250,099</b>	<b>250,937</b>	<b>250,993</b>	<b>250,499</b>	<b>249,043</b>	<b>248,091</b>	<b>246,076</b>	<b>245,635</b>	<b>244,740</b>	<b>244,834</b>	<b>247,068</b>	<b>248,048</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical number of Customers by Month (Dth)**

	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	PY2010
<b>Residential non-heat</b>	29,732	29,581	29,021	28,492	28,393	28,097	27,911	27,766	27,489	27,451	27,280	27,304	28,210
<b>Residential non-heat Low Income</b>	323	317	412	472	403	421	410	392	376	367	362	356	384
<b>Residential heat</b>	175,858	177,324	177,227	175,647	176,788	174,349	173,688	173,502	173,647	173,579	174,399	175,754	175,147
<b>Residential heat Low Income</b>	19,350	19,362	20,240	22,735	21,988	23,793	23,353	22,011	21,304	20,904	20,374	20,273	21,307
<b>C &amp; I small (2107)</b>	18,283	18,582	18,652	18,684	18,575	18,379	18,183	17,985	17,840	17,829	17,834	18,052	18,240
<b>C &amp; I medium sales (2237+2231)</b>	3,214	3,218	3,227	3,213	3,207	3,151	3,138	3,109	3,085	2,980	2,979	2,984	3,125
<b>C &amp; I medium FT-1 (22EN)</b>	431	428	426	427	428	429	431	431	432	433	421	419	428
<b>C &amp; I medium FT-2 (2221)</b>	658	704	721	738	745	773	785	807	819	831	834	848	772
<b>LLF large sales (3367)</b>	139	136	134	138	137	135	129	129	129	125	123	126	132
<b>LLF large FT-1 (33EN)</b>	142	145	145	145	147	146	149	149	148	148	157	156	148
<b>LLF large FT-2 (3321)</b>	117	120	122	122	124	125	125	125	125	127	132	132	125
<b>HLF large sales (2367)</b>	63	63	61	56	53	49	45	44	43	47	48	48	52
<b>HLF large FT-1 (23EN)</b>	73	75	76	76	77	76	76	76	76	76	71	70	75
<b>HLF large FT-2 (2321)</b>	29	28	30	32	35	37	38	40	41	38	39	41	36
<b>LLF XL sales (3496)</b>	5	5	4	4	4	4	4	4	4	2	2	2	4
<b>LLF XL FT-1 (34EN)</b>	21	21	22	22	22	22	22	22	22	22	23	23	22
<b>LLF XL FT-2 (3421)</b>	4	4	4	4	4	4	4	4	4	5	5	5	4
<b>HLF XL sales (2496)</b>	9	9	7	7	7	6	8	9	9	9	9	9	8
<b>HLF XL FT-1 (24EN)</b>	63	62	62	63	63	65	65	65	65	65	67	67	64
<b>HLF XL FT-2 (2421)</b>	2	2	4	4	5	5	5	5	5	5	6	6	5
<b>Total</b>	<b>248,516</b>	<b>250,186</b>	<b>250,597</b>	<b>251,081</b>	<b>251,205</b>	<b>250,066</b>	<b>248,569</b>	<b>246,675</b>	<b>245,663</b>	<b>245,043</b>	<b>245,165</b>	<b>246,675</b>	<b>248,287</b>
<b>Residential Non-Heat</b>	30,055	29,898	29,433	28,964	28,796	28,518	28,321	28,158	27,865	27,818	27,642	27,660	28,594
<b>Residential Heating</b>	195,208	196,686	197,467	198,382	198,776	198,142	197,041	195,513	194,951	194,483	194,773	196,027	196,454
<b>C&amp;I Non-Heat</b>	239	239	240	238	240	238	237	239	239	240	240	241	239
<b>C&amp;I Heating</b>	23,014	23,363	23,457	23,497	23,393	23,168	22,970	22,765	22,608	22,502	22,510	22,747	23,000
<b>Total</b>	<b>248,516</b>	<b>250,186</b>	<b>250,597</b>	<b>251,081</b>	<b>251,205</b>	<b>250,066</b>	<b>248,569</b>	<b>246,675</b>	<b>245,663</b>	<b>245,043</b>	<b>245,165</b>	<b>246,675</b>	<b>248,287</b>

**Narragansett Electric Company d/b/a NATIONAL GRID**  
**2005-2011 Plan-Year Historical number of Customers by Month (Dth)**

	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	PY2011
<b>Residential non-heat</b>	27,386	27,296	27,216	26,967	26,804	26,630	26,481	26,363	26,285	26,261	26,269	26,182	26,678
<b>Residential non-heat Low Income</b>	329	321	307	325	338	359	386	375	362	359	342	338	345
<b>Residential heat</b>	179,758	181,706	182,445	182,570	180,645	178,115	176,005	175,069	175,128	175,181	175,521	176,523	178,222
<b>Residential heat Low Income</b>	18,618	18,301	18,260	18,500	20,325	22,258	22,859	22,597	22,016	21,586	21,319	21,033	20,639
<b>C &amp; I small (2107)</b>	18,393	18,707	18,810	18,805	18,742	18,543	18,338	18,166	18,070	17,971	17,946	18,061	18,379
<b>C &amp; I medium sales (2237+2231)</b>	2,968	2,967	2,959	2,957	2,941	2,916	2,899	2,884	2,876	2,890	2,896	2,928	2,923
<b>C &amp; I medium FT-1 (22EN)</b>	423	430	429	430	430	430	429	432	432	432	441	433	431
<b>C &amp; I medium FT-2 (2221)</b>	897	924	943	959	966	979	981	989	992	1,004	1,008	1,014	971
<b>LLF large sales (3367)</b>	130	130	133	132	132	129	129	126	124	120	120	123	127
<b>LLF large FT-1 (33EN)</b>	159	161	159	162	162	162	161	161	161	162	160	166	161
<b>LLF large FT-2 (3321)</b>	131	134	132	133	135	137	137	136	136	141	146	147	137
<b>HLF large sales (2367)</b>	50	48	49	48	45	46	49	47	47	42	43	45	47
<b>HLF large FT-1 (23EN)</b>	68	69	69	69	69	69	69	69	69	69	65	65	68
<b>HLF large FT-2 (2321)</b>	42	43	44	44	45	42	41	44	44	41	41	40	43
<b>LLF XL sales (3496)</b>	2	2	2	3	2	2	3	3	3	4	5	5	3
<b>LLF XL FT-1 (34EN)</b>	24	24	22	22	25	25	25	25	25	26	27	27	25
<b>LLF XL FT-2 (3421)</b>	5	5	5	5	5	5	5	5	5	3	3	3	5
<b>HLF XL sales (2496)</b>	7	7	7	7	7	7	7	7	7	8	7	7	7
<b>HLF XL FT-1 (24EN)</b>	67	64	64	64	64	65	66	66	66	66	64	64	65
<b>HLF XL FT-2 (2421)</b>	7	8	8	8	8	7	7	7	7	6	6	6	7
<b>Total</b>	<b>249,464</b>	<b>251,347</b>	<b>252,063</b>	<b>252,210</b>	<b>251,890</b>	<b>250,926</b>	<b>249,077</b>	<b>247,571</b>	<b>246,855</b>	<b>246,372</b>	<b>246,429</b>	<b>247,210</b>	<b>249,285</b>
<b>Residential Non-Heat</b>	27,715	27,617	27,523	27,292	27,142	26,989	26,867	26,738	26,647	26,620	26,611	26,520	27,023
<b>Residential Heating</b>	198,376	200,007	200,705	201,070	200,970	200,373	198,864	197,666	197,144	196,767	196,840	197,556	198,862
<b>C&amp;I Non-Heat</b>	241	239	241	240	238	236	239	240	240	232	226	227	237
<b>C&amp;I Heating</b>	23,132	23,484	23,594	23,608	23,540	23,328	23,107	22,927	22,824	22,753	22,752	22,907	23,163
<b>Total</b>	<b>249,464</b>	<b>251,347</b>	<b>252,063</b>	<b>252,210</b>	<b>251,890</b>	<b>250,926</b>	<b>249,077</b>	<b>247,571</b>	<b>246,855</b>	<b>246,372</b>	<b>246,429</b>	<b>247,210</b>	<b>249,285</b>

**National Grid Rhode Island  
2012 Long Range Plan**

**Chart III-E-1**

**Assumptions:**

Mean Peak Day = 56.00 HDD  
 Std Dev Peak Day = 5.08 HDD

Heating Increment = 5,514.19 MMBtu/HDD  
 No. of Firm Customers = 248,500

HDD Level	Cumulative Probability Of Occurrence (p)	Probability Of Exceeding (1-p)	Frequency of Occurrence 1/(1-p) (years)	HDD Excess	Delta Supply (MMBtu)	Requirements Of An Average Customer At HDD Level (MMBtu/cust)	Equivalent Number of Customers
56.0	0.5000	0.5000	2.00	0.0	0	1.24	0
57.0	0.5780	0.4220	2.37	1.0	5,514	1.26	4,360
58.0	0.6530	0.3470	2.88	2.0	11,028	1.29	8,569
59.0	0.7225	0.2775	3.60	3.0	16,543	1.31	12,636
60.0	0.7843	0.2157	4.64	4.0	22,057	1.33	16,567
61.0	0.8373	0.1627	6.15	5.0	27,571	1.35	20,369
62.0	0.8811	0.1189	8.41	6.0	33,085	1.38	24,048
63.0	0.9158	0.0842	11.87	7.0	38,599	1.40	27,611
64.0	0.9422	0.0578	17.31	8.0	44,114	1.42	31,063
65.0	0.9617	0.0383	26.09	9.0	49,628	1.44	34,408
66.0	0.9754	0.0246	40.69	10.0	55,142	1.46	37,652
67.0	0.9848	0.0152	65.64	11.0	60,656	1.49	40,799
68.0	0.9909	0.0091	109.64	12.0	66,170	1.51	43,853
69.0	0.9947	0.0053	189.65	13.0	71,684	1.53	46,819
70.0	0.9971	0.0029	339.84	14.0	77,199	1.55	49,700
71.0	0.9984	0.0016	631.09	15.0	82,713	1.58	52,500
72.0	0.9992	0.0008	1214.78	16.0	88,227	1.60	55,222
73.0	0.9996	0.0004	2424.38	17.0	93,741	1.62	57,870
74.0	0.9998	0.0002	5017.51	18.0	99,255	1.64	60,446
75.0	0.9999	0.0001	10770.63	19.0	104,770	1.66	62,953
76.0	1.0000	0.0000	23984.56	20.0	110,284	1.69	65,395
77.0	1.0000	0.0000	55414.63	21.0	115,798	1.71	67,773
78.0	1.0000	0.0000	132854.83	22.0	121,312	1.73	70,090
79.0	1.0000	0.0000	330554.37	23.0	126,826	1.75	72,348
65.6	0.9705	0.0295	33.92	(EDD Level MINUS Mean Peak)	(EDD Excess TIMES Heating Increment) (MMBtu)	(Heating Increment DIVIDED BY No. of Firm Customers TIMES EDD Level)	(Delta Supply DIVIDED BY Requirements of Average Customer)

**National Grid Rhode Island  
2012 Long Range Plan**

**Chart III-E-2**

Assumptions:

Mean Peak Day = 56.00 EDD  
 Std Dev Peak Day = 5.08 EDD

Heating Increment = 5,514.19 MMBtu/EDD  
 No. of Firm Customers = 248,500

2010 dollars

Relight Costs = \$86.57 /customer  
 Freeze-Up Damages = \$36,567.16 /customer  
 Total = \$36,653.74 /customer

2010 Average:  
 Residential Customers 225,204  
 Comm/Ind Customers 23,296  
 Total Customers 248,500  
 Percent C&I of Total 9.4%

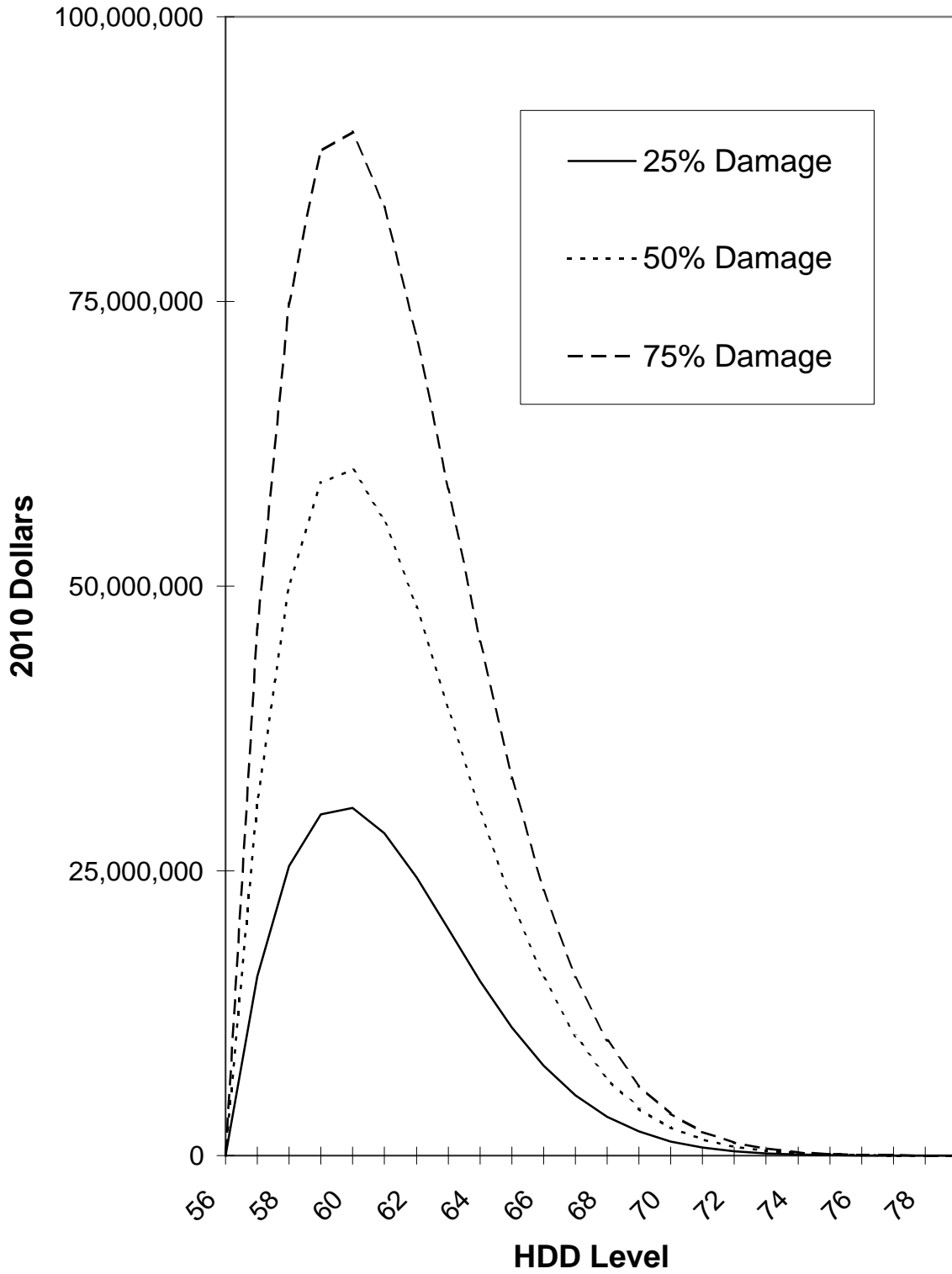
Cost of Interruption/Day = \$59,665,627  
 (2010 dollars)

EDD Level	Probability Of Exceeding (1-p)	Equivalent Number of Customers	Residential Customers	Comm/Ind Customers	Cost Of Interruption to Comm/Ind Customers	Probability-Weighted Cost Of Damages Given X% of Residential Customers With Damages PLUS Cost of Interruption to Comm/Ind Customers (2010 dollars)		
						25%	50%	75%
56.0	0.5000	0	0	0	\$0	0	0	0
57.0	0.4220	4,360	3,951	409	\$1,046,765	15,720,759	30,999,760	46,278,760
58.0	0.3470	8,569	7,766	803	\$2,057,435	25,406,136	50,098,352	74,790,568
59.0	0.2775	12,636	11,451	1,185	\$3,033,845	29,964,455	59,086,899	88,209,344
60.0	0.2157	16,567	15,014	1,553	\$3,977,708	30,529,351	60,200,818	89,872,285
61.0	0.1627	20,369	18,459	1,910	\$4,890,625	28,308,384	55,821,294	83,334,204
62.0	0.1189	24,048	21,794	2,254	\$5,774,093	24,438,606	48,190,480	71,942,353
63.0	0.0842	27,611	25,023	2,588	\$6,629,514	19,875,851	39,193,185	58,510,518
64.0	0.0578	31,063	28,151	2,912	\$7,458,203	15,332,697	30,234,541	45,136,385
65.0	0.0383	34,408	31,182	3,226	\$8,261,395	11,266,440	22,216,290	33,166,139
66.0	0.0246	37,652	34,122	3,530	\$9,040,247	7,907,263	15,592,330	23,277,396
67.0	0.0152	40,799	36,974	3,825	\$9,795,849	5,310,671	10,472,111	15,633,551
68.0	0.0091	43,853	39,742	4,111	\$10,529,228	3,417,636	6,739,235	10,060,834
69.0	0.0053	46,819	42,430	4,389	\$11,241,350	2,109,427	4,159,579	6,209,731
70.0	0.0029	49,700	45,041	4,659	\$11,933,125	1,249,586	2,464,059	3,678,531
71.0	0.0016	52,500	47,578	4,922	\$12,605,414	710,813	1,401,652	2,092,491
72.0	0.0008	55,222	50,045	5,177	\$13,259,028	388,421	765,927	1,143,433
73.0	0.0004	57,870	52,445	5,425	\$13,894,735	203,957	402,183	600,408
74.0	0.0002	60,446	54,779	5,667	\$14,513,261	102,936	202,979	303,022
75.0	0.0001	62,953	57,052	5,902	\$15,115,292	49,942	98,480	147,019
76.0	0.0000	65,395	59,264	6,131	\$15,701,481	23,297	45,939	68,581
77.0	0.0000	67,773	61,419	6,353	\$16,272,444	10,450	20,606	30,763
78.0	0.0000	70,090	63,519	6,571	\$16,828,767	4,508	8,889	13,270
79.0	0.0000	72,348	65,566	6,782	\$17,371,005	1,870	3,688	5,505

(Probability of Exceeding TIMES  
 [Comm/Ind Cost of Interruption PLUS  
 No. Of Residential Customers TIMES Percent TIMES  
 Total Damage Costs] )



### Probability-Weighted Damage Costs National Grid Rhode Island



**National Grid Rhode Island  
2012 Long Range Plan**

**Chart III-E-4**

Assumptions:

Mean Peak Day = 56.0 EDD  
Std Dev Peak Day = 5.1 EDD

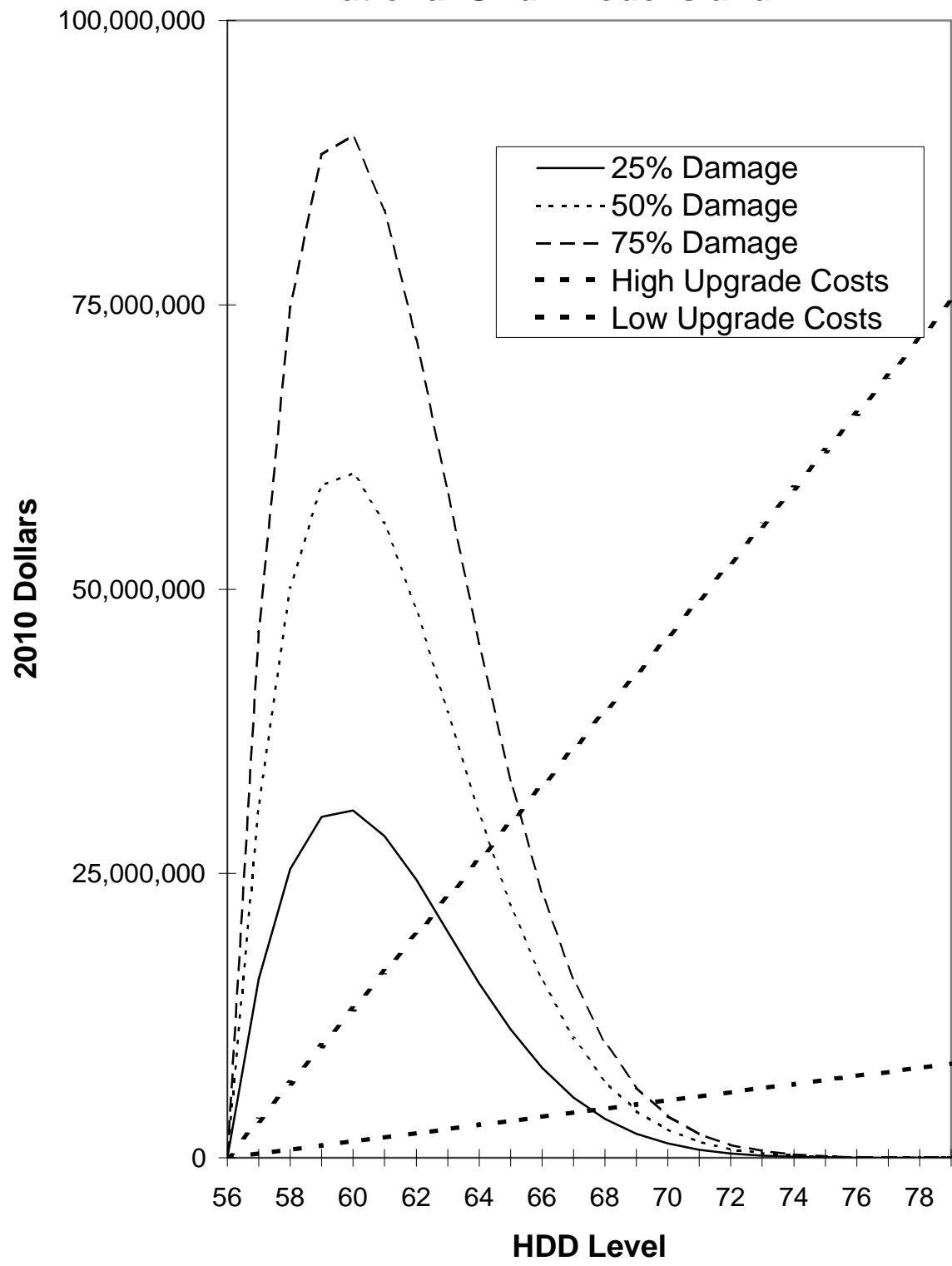
2010 dollars

Cost of Incr. LNG Vaporization = \$65.30 /MMBtu  
Cost of New Pipeline Capacity = \$593.26 /MMBtu

EDD Level	Delta Supply (MMBtu)	Low Upgrade Costs Case	High Upgrade Costs Case
		LNG Vaporization Costs	Pipeline Capacity Costs
56.0	0	\$0	\$0
57.0	5,514	\$360,096	\$3,271,360
58.0	11,028	\$720,192	\$6,542,721
59.0	16,543	\$1,080,289	\$9,814,081
60.0	22,057	\$1,440,385	\$13,085,442
61.0	27,571	\$1,800,481	\$16,356,802
62.0	33,085	\$2,160,577	\$19,628,162
63.0	38,599	\$2,520,673	\$22,899,523
64.0	44,114	\$2,880,769	\$26,170,883
65.0	49,628	\$3,240,866	\$29,442,244
66.0	55,142	\$3,600,962	\$32,713,604
67.0	60,656	\$3,961,058	\$35,984,965
68.0	66,170	\$4,321,154	\$39,256,325
69.0	71,684	\$4,681,250	\$42,527,685
70.0	77,199	\$5,041,346	\$45,799,046
71.0	82,713	\$5,401,443	\$49,070,406
72.0	88,227	\$5,761,539	\$52,341,767
73.0	93,741	\$6,121,635	\$55,613,127
74.0	99,255	\$6,481,731	\$58,884,487
75.0	104,770	\$6,841,827	\$62,155,848
76.0	110,284	\$7,201,923	\$65,427,208
77.0	115,798	\$7,562,020	\$68,698,569
78.0	121,312	\$7,922,116	\$71,969,929
79.0	126,826	\$8,282,212	\$75,241,289

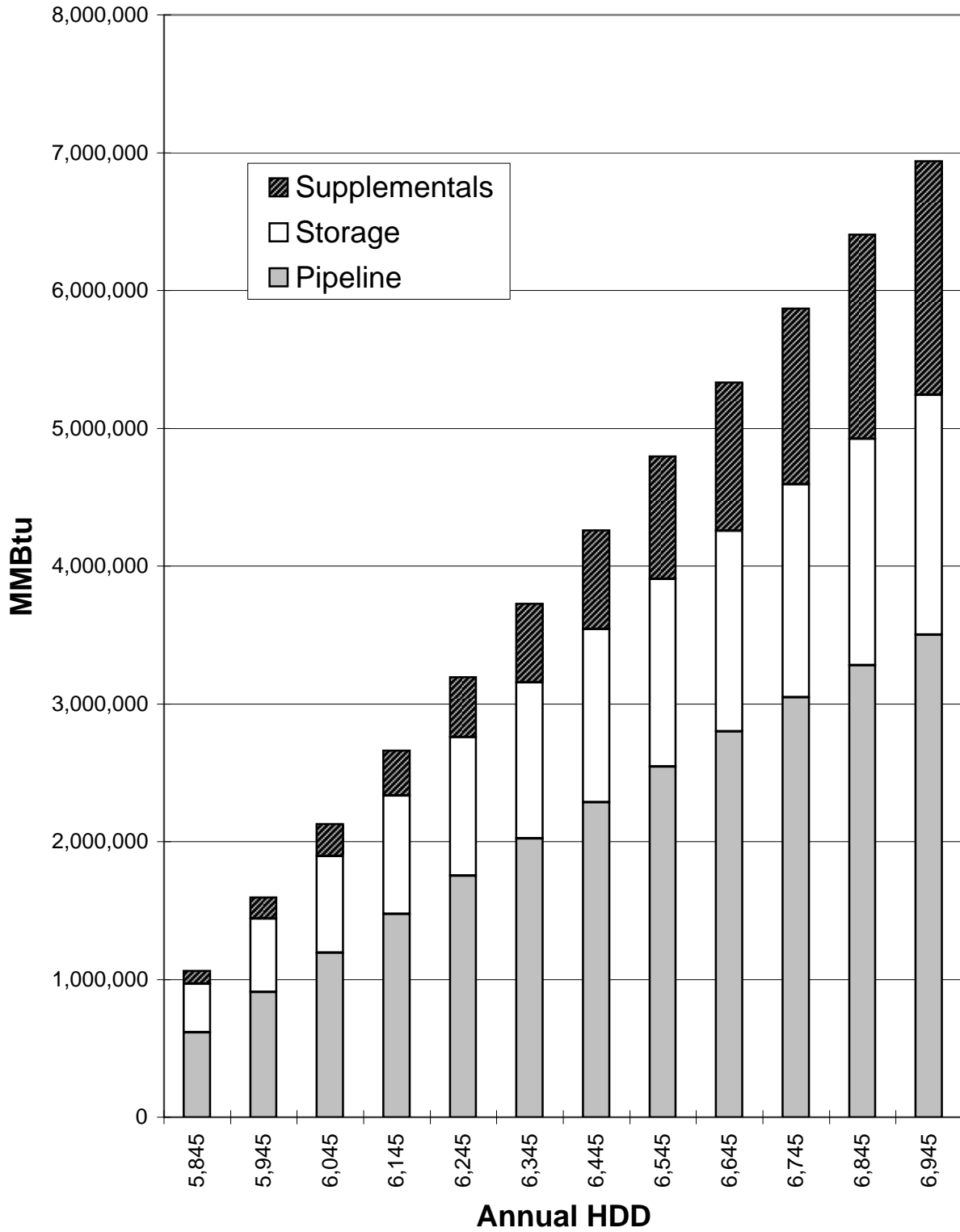
# Probability-Weighted Damage Costs vs System Upgrade Costs National Grid Rhode Island

Chart III-E-5



**Chart III-E-6**

**Supply Shortfall Versus Annual HDD Level of Design  
National Grid Rhode Island**



**National Grid Rhode Island  
2012 Long Range Plan**

**Chart III-E-7**

**Pipeline Shortfall At HDD Level Above 5,645 Normal Annual HDD  
By Month**

	Annual HDD Level													
	5,645	5,745	5,845	5,945	6,045	6,145	6,245	6,345	6,445	6,545	6,645	6,745	6,845	6,945
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	13,715	242,162	466,470	683,789	886,160	1,078,967
Oct	0	314,667	617,240	909,146	1,193,760	1,476,448	1,752,660	2,023,332	2,270,442	2,301,076	2,331,744	2,362,411	2,393,079	2,423,746
Total	0	314,667	617,240	909,146	1,193,760	1,476,448	1,752,660	2,023,332	2,284,156	2,543,238	2,798,213	3,046,200	3,279,239	3,502,713

**Storage Shortfall At HDD Level Above 5,645 Normal Annual HDD  
By Month**

	Annual HDD Level													
	5,645	5,745	5,845	5,945	6,045	6,145	6,245	6,345	6,445	6,545	6,645	6,745	6,845	6,945
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jan	0	0	0	0	11,902	98,166	177,705	243,476	303,440	352,925	397,316	444,256	491,834	542,032
Feb	0	33,117	178,427	328,015	460,424	505,713	549,877	587,548	626,659	661,911	690,782	718,021	748,289	773,922
Mar	0	124,824	153,189	180,133	204,705	224,290	243,856	266,889	289,663	308,616	325,189	340,949	356,963	373,712
Apr	0	14,785	18,268	21,752	25,235	28,719	32,202	35,686	38,680	39,367	42,209	45,052	47,894	50,736
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	172,725	349,884	529,900	702,267	856,888	1,003,641	1,133,599	1,258,442	1,362,819	1,455,496	1,548,277	1,644,980	1,740,402

**Supplementals Shortfall At HDD Level Above 5,645 Normal Annual HDD  
By Month**

	Annual HDD Level													
	5,645	5,745	5,845	5,945	6,045	6,145	6,245	6,345	6,445	6,545	6,645	6,745	6,845	6,945
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	13,494	66,419	121,296
Jan	0	0	0	0	41,007	103,127	176,014	264,817	366,184	479,891	598,691	705,635	780,595	856,478
Feb	0	43,087	95,646	154,616	185,175	209,331	234,612	266,750	302,800	342,839	389,259	438,898	489,340	544,773
Mar	0	0	0	1,421	5,213	13,994	25,302	36,609	48,176	63,564	83,350	105,164	129,752	155,764
Apr	0	0	0	0	0	0	0	0	490	3,973	7,457	10,940	14,424	17,908
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	43,087	95,646	156,037	231,395	326,452	435,927	568,176	717,651	890,267	1,078,757	1,274,130	1,480,530	1,696,219

**National Grid Rhode Island  
2012 Long Range Plan**

**Chart III-E-8**

**Assumptions:**

Mean Annual HDD = 5,645.3 EDD  
Std Dev Annual HDD = 261.6 EDD

EDD Level	Cumulative Probability Of Occurrence (p)	Probability Of Exceeding (1-p)	Frequency of Occurrence 1/(1-p) (years)	EDD Excess	Delta Supply (MMBtu)			Total
					Pipeline	Storage	Supplementals	
5,745	0.6484	0.3516	2.84	99.7	314,667	172,725	43,087	530,479
5,845	0.7774	0.2226	4.49	199.7	617,240	349,884	95,646	1,062,769
5,945	0.8740	0.1260	7.94	299.7	909,146	529,900	156,037	1,595,083
6,045	0.9367	0.0633	15.81	399.7	1,193,760	702,267	231,395	2,127,423
6,145	0.9719	0.0281	35.65	499.7	1,476,448	856,888	326,452	2,659,788
6,245	0.9891	0.0109	91.42	599.7	1,752,660	1,003,641	435,927	3,192,228
6,345	0.9963	0.0037	267.46	699.7	2,023,332	1,133,599	568,176	3,725,108
6,445	0.9989	0.0011	894.78	799.7	2,284,156	1,258,442	717,651	4,260,249
6,545	0.9997	0.0003	3429.82	899.7	2,543,238	1,362,819	890,267	4,796,325
6,645	0.9999	0.0001	15086.09	999.7	2,798,213	1,455,496	1,078,757	5,332,466
6,745	1.0000	0.0000	76237.41	1,099.7	3,046,200	1,548,277	1,274,130	5,868,608
6,845	1.0000	0.0000	443076.13	1,199.7	3,279,239	1,644,980	1,480,530	6,404,749
6,945	1.0000	0.0000	2963889.21	1,299.7	3,502,713	1,740,402	1,696,219	6,939,335
6,168	0.9771	0.0229	43.76					

(EDD Level  
MINUS  
Mean Peak)  
(EDD Excess  
TIMES  
Heating  
Increment)  
(MMBtu)

National Grid Rhode Island  
2012 Long Range Plan

Chart III-E-9

Assumptions:

Mean Annual HDD =	5,645.3
Std Dev Annual HDD =	261.6
Cost of Interruption/Day =	\$59,665,627
Peak Period Supply Cost	\$4.749 \$/MMBtu
Long-Haul Capacity Cost	\$593.26 \$/MMBtu
Offpeak Period Supply Cost	\$4.770
Short-Haul Capacity Cost	\$101.875 \$/MMBtu
Storage D1 Cost	\$18.480 \$/MMBtu
Storage D2 Cost	\$0.253 \$/MMBtu

HDD Level	Cumulative Probability Of Occurrence (p)	Probability Of Exceeding (1-p)	Frequency of Occurrence 1/(1-p) (years)	Days Of Interruption	Costs in 2010 Dollars		Required Incremental Capacity (MMBtu)	Required Incremental Winter Volume (MMBtu)	Costs in 2010 Dollars	
					Cost of 25% Interruption	Prob Wgthed Cost			Short-Haul Supply Cost	Long-Haul Supply Cost
5,745	0.6484	0.3516	2.84	3	\$38,536,527	\$13,548,471	3,772	215,812	\$1,537,934	\$3,262,671
5,845	0.7774	0.2226	4.49	5	\$78,346,777	\$17,441,982	7,553	445,529	\$3,146,870	\$6,597,080
5,945	0.8740	0.1260	7.94	8	\$115,278,219	\$14,521,819	11,335	685,936	\$4,809,565	\$9,982,602
6,045	0.9367	0.0633	15.81	10	\$154,309,946	\$9,762,510	15,121	933,662	\$6,509,408	\$13,404,779
6,145	0.9719	0.0281	35.65	13	\$191,653,505	\$5,376,484	18,913	1,183,340	\$8,219,873	\$16,840,268
6,245	0.9891	0.0109	91.42	15	\$229,645,982	\$2,512,005	22,713	1,439,568	\$9,964,199	\$20,311,609
6,345	0.9963	0.0037	267.46	18	\$267,528,903	\$1,000,275	26,519	1,701,776	\$11,739,317	\$23,815,069
6,445	0.9989	0.0011	894.78	21	\$306,401,397	\$342,432	30,325	1,976,093	\$13,575,258	\$27,376,042
6,545	0.9997	0.0003	3429.82	23	\$344,097,474	\$100,325	34,131	2,253,087	\$15,424,640	\$30,949,725
6,645	0.9999	0.0001	15086.09	26	\$381,858,677	\$25,312	37,938	2,534,253	\$17,294,981	\$34,543,225
6,745	1.0000	0.0000	76237.41	28	\$420,502,597	\$5,516	41,744	2,822,407	\$19,200,422	\$38,169,915
6,845	1.0000	0.0000	443076.13	31	\$462,491,451	\$1,044	45,555	3,125,511	\$21,181,536	\$41,870,506
6,945	1.0000	0.0000	2963889.21	34	\$504,553,136	\$170	49,369	3,436,621	\$23,203,177	\$45,610,643

Days Of Interruption times Cost of Interruption/Day

Cost of Interruption times Prob. of Exceeding

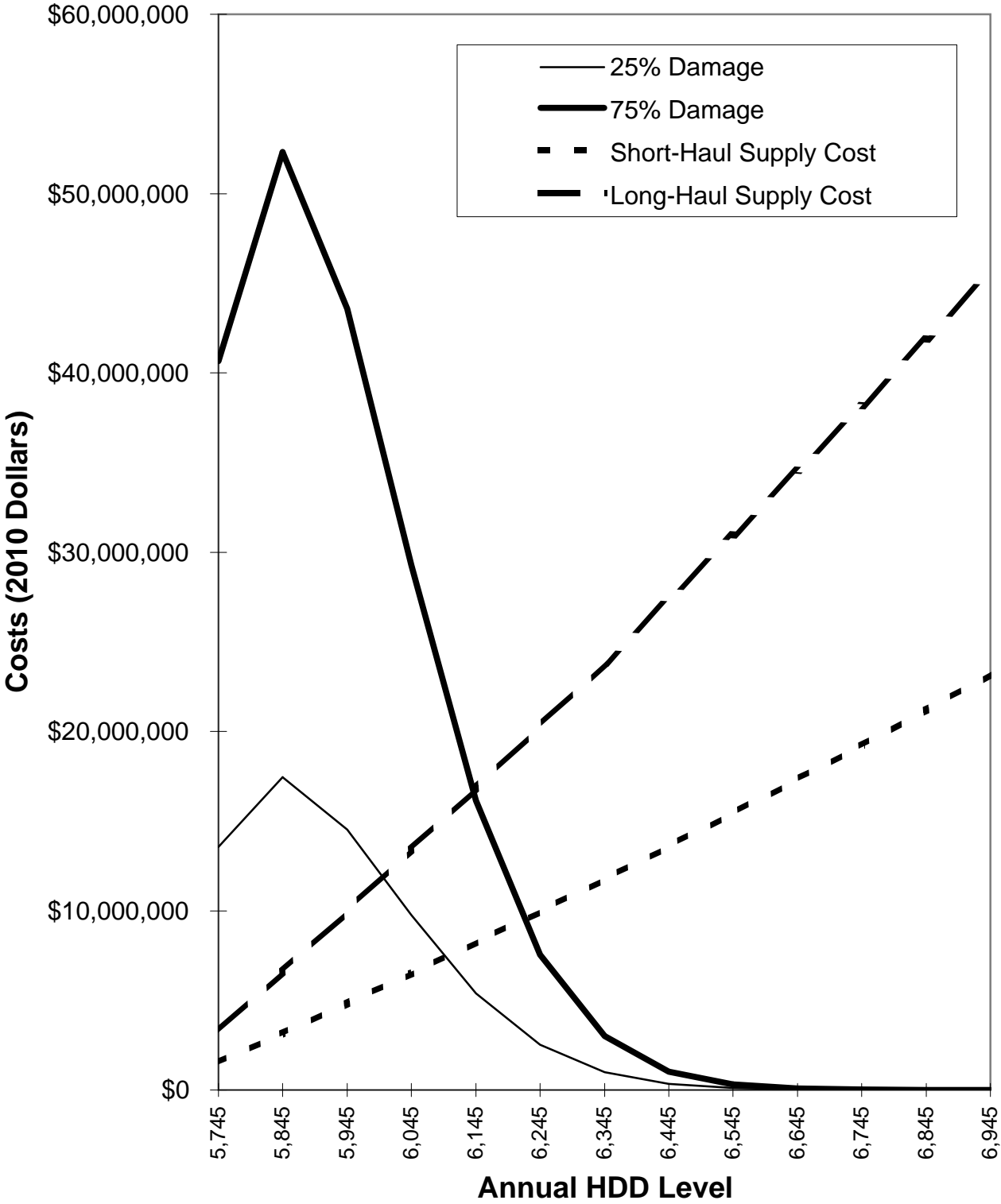
(Incremental Vol times Supply+D2 Costs) + (Incr Capacity times Short-Haul+ D1 Costs)

(Incremental Vol times Supply Cost) + (Incr Capacity times Long-Haul Cost)

EDD Level	Cost of 75% Interruption	Prob Wgthed Cost
5,745	\$115,609,580	\$40,645,413
5,845	\$235,040,332	\$52,325,947
5,945	\$345,834,658	\$43,565,456
6,045	\$462,929,837	\$29,287,530
6,145	\$574,960,514	\$16,129,453
6,245	\$688,937,945	\$7,536,015
6,345	\$802,586,708	\$3,000,826
6,445	\$919,204,190	\$1,027,295
6,545	\$1,032,292,421	\$300,976
6,645	\$1,145,576,031	\$75,936
6,745	\$1,261,507,791	\$16,547
6,845	\$1,387,474,352	\$3,131
6,945	\$1,513,659,407	\$511

Chart III-E-10

Probability-Weighted Damages Costs vs  
Cost of Replacement Volumes  
National Grid Rhode Island



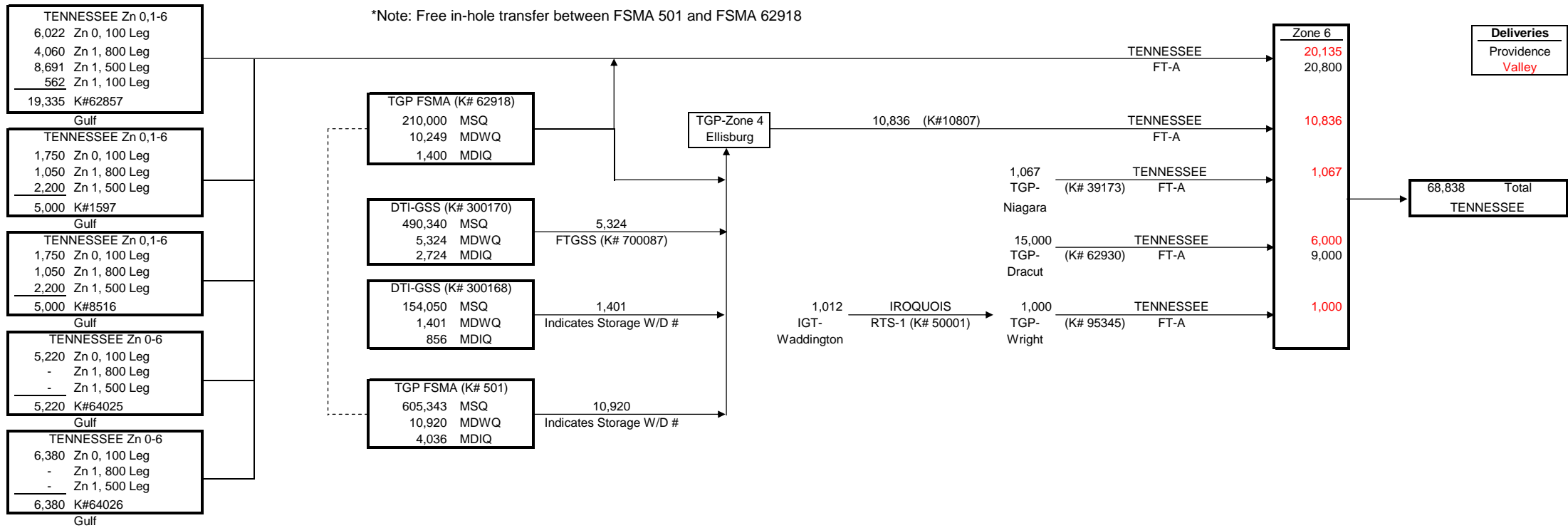


**RHODE ISLAND COMPANIES - TENNESSEE GAS PIPELINE  
PORTFOLIO SCHEMATIC**

Peak Season Volumes

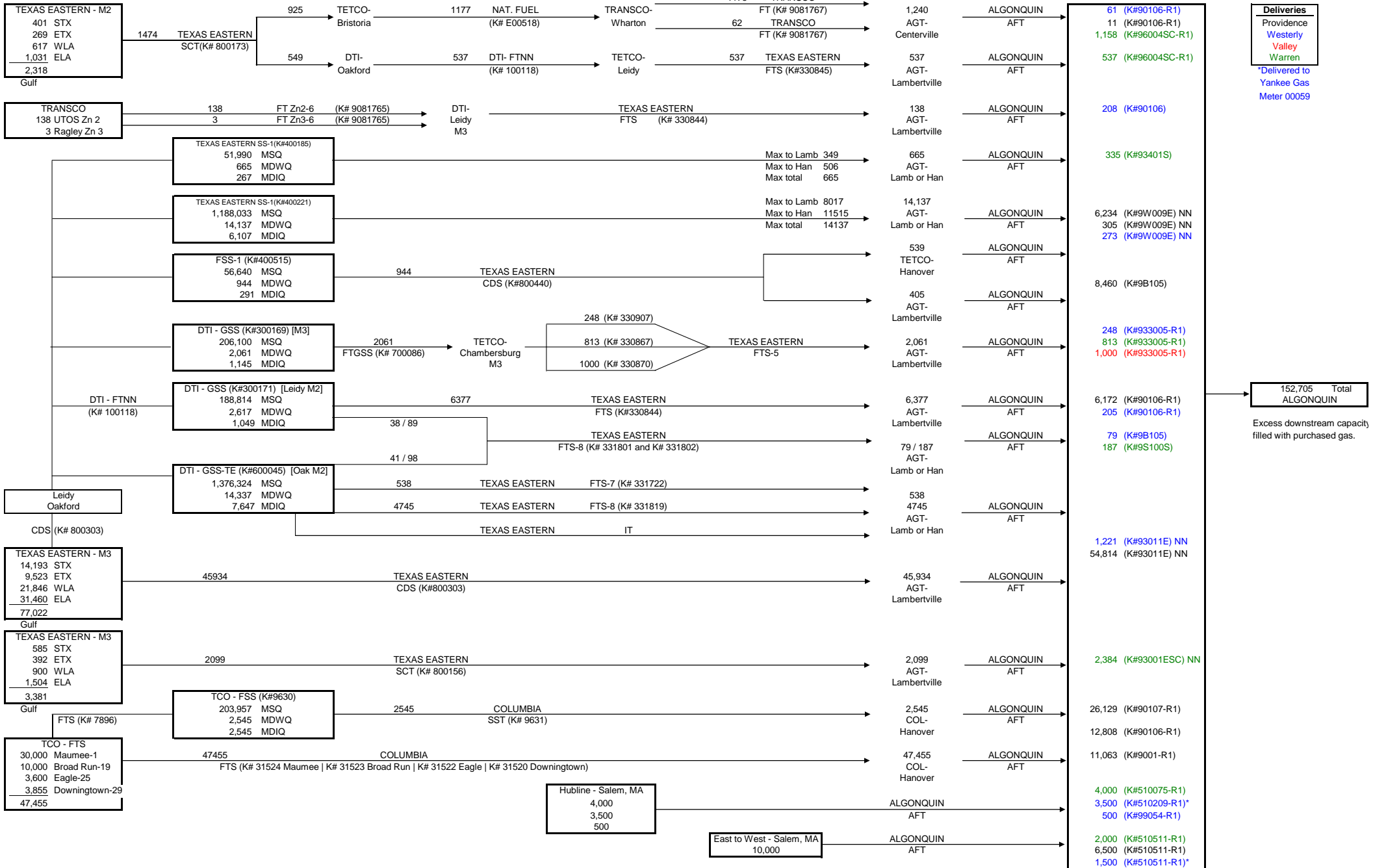
As of November 1, 2011

\*Note: Free in-hole transfer between FSMA 501 and FSMA 62918



RHODE ISLAND COMPANIES - ALGONQUIN GAS TRANSMISSION  
PORTFOLIO SCHEMATIC

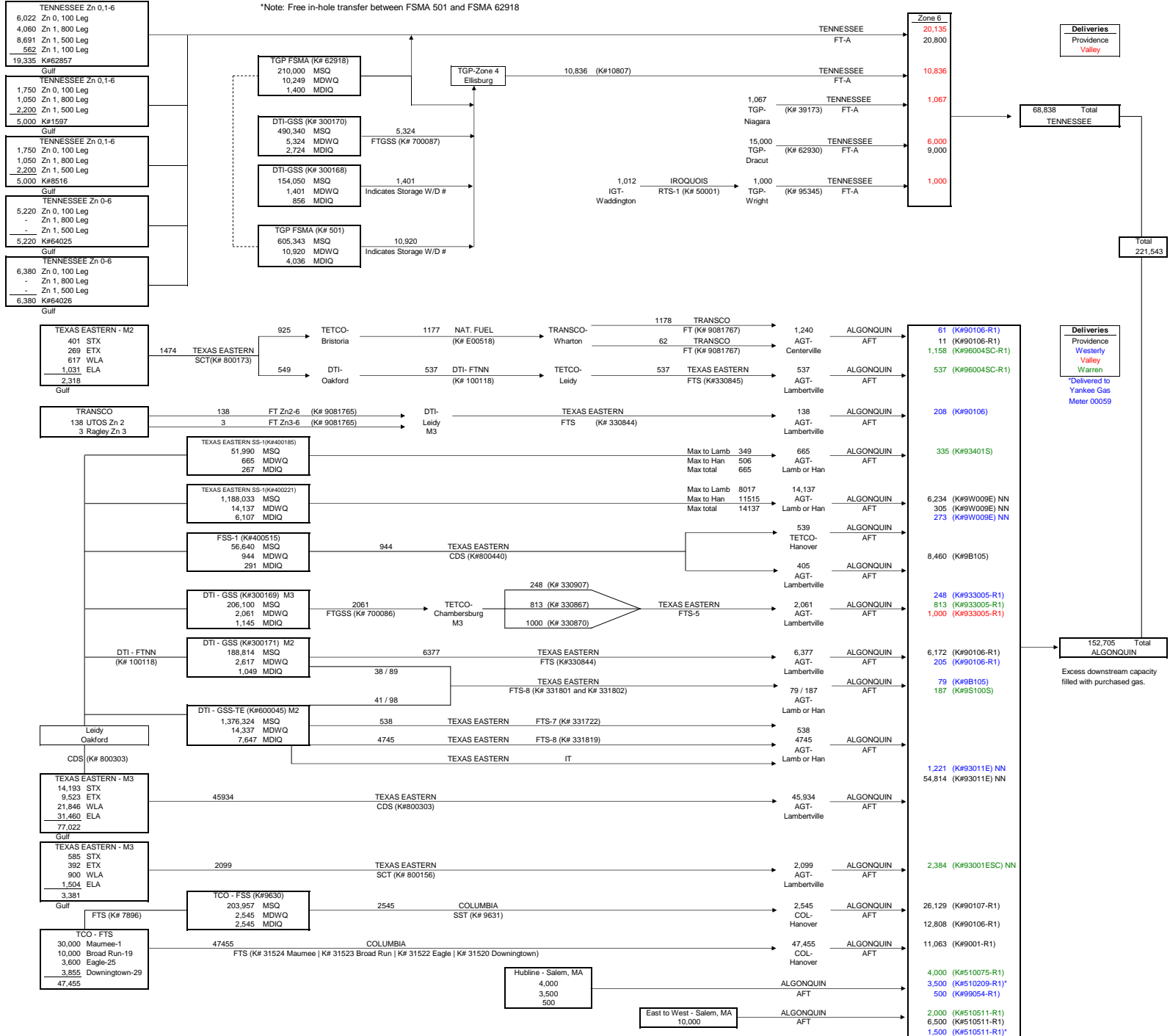
Peak Season Volumes



RHODE ISLAND COMPANIES - CONSOLIDATED  
PORTFOLIO SCHEMATIC

Peak Season Volumes

As of November 1, 2011



**NATIONAL GRID - RHODE ISLAND  
ASSETS**

**Transportation Contracts**

Legacy LDC	Shipper	Pipeline Company	Contract No.	Rate Schedule	MDQ	Annual Quantity	Expiration Date	Notes
PG	Narragansett Electric	Algonquin	9001	AFT1 FT3	11,063	4,037,995	12/14/2012	Part-284 transportation service (365-day) used to transport gas from the Columbia interconnect at Hanover, NJ (11,063 MMBtu) to Narragansett Electric - Dey St (11,063 MMBtu).
PG	Narragansett Electric	Algonquin	90106	AFT-14	19,465	7,104,725	10/31/2014	Part-284 transportation service (365-day) used to transport gas from the Columbia interconnect at Hanover, NJ (12,808 MMBtu), TETCO interconnect at Lambertville (6585 MMBtu) and Transco interconnect at Centerville (72 MMBtu) to Narragansett Electric - Dey St (9,223 MMBtu), Narragansett Electric - Tiverton (598 MMBtu), Narragansett Electric - Westerly (474 MMBtu), Narragansett Electric - E. Providence (4,092 MMBtu), and Narragansett Electric - Portsmouth (5,078 MMBtu).
PG	Narragansett Electric	Algonquin	90107	AFT-1W	26,129	3,945,479	10/31/2014	Part-284 service with a seasonally adjusted MDQ of (26,129 MMBtu), used to transport gas from the Columbia interconnect at Hanover, NJ to Narragansett Electric - Dey St (19,514 MMBtu) and Narragansett Electric - E. Providence (6,615 MMBtu).
VG	Narragansett Electric	Algonquin	933005	AFT-1P	2,061	752,265	03/31/2013	Part-284 transportation service (365-day) used to transport gas from the TETCO interconnect at Lambertville, NJ (2,061 MMBtu) to Narragansett Electric - Cumberland (1,000 MMBtu), Narragansett Electric - Westerly (248 MMBtu), and Narragansett Electric - Warren (813 MMBtu).
BW	Narragansett Electric	Algonquin	93001ESC	AFT-ES1	2,384	771,904	10/31/2014	Part-284 <b>NO NOTICE</b> service with a seasonally adjusted MDQ of (2,384 MMBtu), used to transport gas from the TETCO interconnect at Lambertville, NJ (1,377 MMBtu) and Hanover, NJ (1,007 MMBtu) to Narragansett Electric - Warren (2,384 MMBtu).
PG	Narragansett Electric	Algonquin	93011E	AFT-E1	56,035	19,446,885	10/31/2014	Part-284 <b>NO NOTICE</b> service with a seasonally adjusted MDQ of (56,035 MMBtu), used to transport gas from the TETCO interconnect at Lambertville, NJ (34,668 MMBtu) and Hanover, NJ (21,367 MMBtu) to Narragansett Electric - Dey St (25,137 MMBtu), Narragansett Electric - Westerly (1,221 MMBtu), Narragansett Electric - E. Providence (48,147 MMBtu), Narragansett Electric - Warren (4,173 MMBtu), Narragansett Electric - Portsmouth (6,504 MMBtu), and Narragansett Electric - Tiverton (163 MMBtu).
BW	Narragansett Electric	Algonquin	93401S	AFT-1S4	335	122,275	10/31/2014	Part-284 transportation service (365-day) used to transport gas from the TETCO interconnect at Lambertville, NJ (335 MMBtu) to Narragansett Electric - Warren (335 MMBtu).
BW	Narragansett Electric	Algonquin	96004SC	AFT-1S3	1,695	618,675	10/31/2014	Part-284 firm transportation service (365-day) used to transport gas from the TETCO interconnect at Lambertville, NJ (537 MMBtu) and Centerville, NJ (1158 MMBtu) to Narragansett Electric - Warren (1,695 MMBtu).
PG	Narragansett Electric	Algonquin	9B105	AFT-1B	8,539	1,813,145	10/31/2014	Part-284 service with a seasonally adjusted MDQ of (8,569 MMBtu), used to transport gas from the TETCO interconnect at Lambertville, NJ (8,539 MMBtu) to Narragansett Electric - Dey St (4,258 MMBtu), Narragansett Electric - Portsmouth (4,202 MMBtu) and Narragansett Electric - Westerly (79 MMBtu).

Legacy LDC	Shipper	Pipeline Company	Contract No.	Rate Schedule	MDQ	Annual Quantity	Expiration Date	Notes
BW	Narragansett Electric	Algonquin	9S100S	AFT-1SX	187	39,737	10/31/2014	Part-284 service with a seasonally adjusted MDQ of (187 MMBtu), used to transport gas from the TETCO interconnect at Lambertville, NJ to Narragansett Electric - Warren (187 MMBtu).
PG	Narragansett Electric	Algonquin	9W009E	AFT-EW	6,812	1,446,384	10/31/2014	Part-284 <b>NO NOTICE</b> service with a seasonally adjusted MDQ of (6,812 MMBtu), used to transport gas from the TETCO interconnect at Hanover, NJ (4,222 MMBtu) and Lambertville, NJ (2,590 MMBtu) to Narragansett Electric - Dey St (6,234 MMBtu), Narragansett Electric - Westerly (273 MMBtu), and Narragansett Electric - Portsmouth (305 MMBtu).
PG	Narragansett Electric	Algonquin Hubline	99054	AFT1-H	500	182,500	11/30/2023	Part-284 transportation service (365-day) used to transport gas on Hubline at Salem, MA (500 MMBtu) to Narragansett Electric - Westerly (500 MMBtu).
BW	Narragansett Electric	Algonquin Hubline	510075	AFT1-H	4,000	1,460,000	11/30/2013	Part-284 transportation service (365-day) used to transport gas on Hubline at Salem, MA (4,000 MMBtu) to Narragansett Electric - Warren (4,000 MMBtu).
PG	Narragansett Electric	Algonquin Hubline	510209	AFT1-H	3,500	1,277,500	10/31/2014	Part-284 transportation service (365-day) used to transport gas on Hubline at Salem, MA (3,500 MMBtu) to Narragansett Electric - Montville (3,500 MMBtu).
NEC	Narragansett Electric	Algonquin Hubline - East to West -	510511	AFT1-H	10,000	3,650,000	10/31/2020	Part-284 transportation service (365-day) used to transport gas on Hubline at Salem, MA (10,000 MMBtu) to Narragansett Electric - Warren (2,000 MMBtu), Narragansett Electric - Portsmouth (6,000 MMBtu), Narragansett Electric - Tiverton (500 MMBtu), and Narragansett Electric - Montville (1,500 MMBtu).
PG	Narragansett Electric	Columbia	31524	FTS	30,000	10,950,000	10/31/2020	Part-284 transportation service used to transport gas from Maumee-1 (30,000 MMBtu) to Columbia interconnect at Hanover, NJ (30,000 MMBtu).
PG	Narragansett Electric	Columbia	31523	FTS	10,000	3,650,000	10/31/2020	Part-284 transportation service used to transport gas from Broad Run-19 (10,000 MMBtu) to Columbia interconnect at Hanover, NJ (10,000 MMBtu).
PG	Narragansett Electric	Columbia	31522	FTS	3,600	1,314,000	10/31/2020	Part-284 transportation service used to transport gas from Eagle-25 (3,600 MMBtu) to Columbia interconnect at Hanover, NJ (3,600 MMBtu).
PG	Narragansett Electric	Columbia	31520	FTS	3,855	1,407,075	10/31/2020	Part-284 transportation service used to transport gas from Downingtown-29 (3,855 MMBtu) to Columbia interconnect at Hanover, NJ (3,855 MMBtu).
PG	Narragansett Electric	Columbia	9631	SST	2,545	695,966	04/01/2040	Part-284 transportation service used to transport gas from RP Storage Point TCO-FSS #9630 (2,545 MMBtu) to Columbia interconnect at Hanover, NJ (2,545 MMBtu). MDQ Seasonally adjusted to be 1,272 MDQ from Apr - Sep.
BW	Narragansett Electric	Dominion	100118	FTNN	537	196,005	10/31/2012	Part-284 transportation service used to transport gas from the TETCO interconnect at Oakford (537 MMBtu) to the Leidy Group Meter (537 MMBtu).
RI	Narragansett Electric	Dominion	700086	FTGSS	2,061	311,211	03/31/2017	Transportation contract used to transport gas from DTI-GSS #300169 (2,061 MMBtu) to the TETCO interconnect at Chambersburg, PA (2,061 MMBtu).
VG	Narragansett Electric	Dominion	700087	FTGSS	5,324	803,924	03/31/2015	Transportation contract used to transport gas from DTI-GSS #300170 (5,324 MMBtu) to Ellisburg, PA (5,324 MMBtu).
VG	Narragansett Electric	Iroquois	500-01	RTS-1	1,012	369,380	11/01/2017	Transportation contract used to transport gas from Waddington (1,012 MMBtu) to the TETCO interconnect with TGP at Wright, NY.

Legacy LDC	Shipper	Pipeline Company	Contract No.	Rate Schedule	MDQ	Annual Quantity	Expiration Date	Notes
BW	Narragansett Electric	National Fuel	E11395	EFT	1,177	429,605	03/31/2013	Part-284 transportation service (365-day) used to transport gas from TETCO Bristoria (1,177 MMBtu) to Transco - Wharton (907 MMBtu). Storage service from NF Storage to Transco - Wharton (270 MMBtu). (No longer have NF storage).
VG	Narragansett Electric	Tennessee	1597	FT-A	5,000	1,825,000	10/31/2013	Transportation service used to transport gas from Zn1 800 Leg (1,050 MMBtu), Zn1 500 Leg (2,200 MMBtu), and Zn 0 100 Leg (1,750 MMBtu) to National Grid city gates at Pawtucket, RI (5,000 MMBtu).
VG	Narragansett Electric	Tennessee	8516	FT-A	5,000	1,825,000	10/31/2015	Transportation service used to transport gas from Zn1 800 Leg (1,050 MMBtu), Zn1 500 Leg (2,200 MMBtu), and Zn 0 100 Leg (1,750 MMBtu) to National Grid city gates at Pawtucket, RI (5,000 MMBtu).
VG	Narragansett Electric	Tennessee	10807	FT-A	10,836	3,955,140	03/31/2013	Transportation service used to transport gas from Ellisburg (6,581 MMBtu) and Northern Storage (4,255 MMBtu) to National Grid city gates at Pawtucket, RI (10,836 MMBtu). Evergreen.
VG	Narragansett Electric	Tennessee	95345	FT-A	1,000	365,000	10/31/2017	Transportation service used to transport gas from interconnect at Wright, NY (1,000 MMBtu) to National Grid city gates at Lincoln (1,000 MMBtu).
VG	Narragansett Electric	Tennessee	39173	FT-A	1,067	389,455	03/31/2013	Transportation service (365-day) used to transport gas from Niagara River (1,067 MMBtu) to National Grid city gates at Pawtucket, RI (1,067 MMBtu).
PG	Narragansett Electric	Tennessee	62857	FT-A	19,335	7,057,275	04/30/2013	Transportation service used to transport gas from Zn1 800 Leg (4,060 MMBtu), Zn1 500 Leg (8,691 MMBtu), Zn0 100 Leg (6,022 MMBtu), and Zn1 100 Leg (562 MMBtu) to National Grid city gates at Pawtucket, RI (4,335 MMBtu), Cranston (10,000 MMBtu), and Smithfield (5,000 MMBtu). Evergreen.
PG	Narragansett Electric	Tennessee	62930	FT-A	15,000	5,475,000	08/31/2017	Transportation service used to transport gas from the interconnect at Dracut (15,000 MMBtu) to National Grid city gate - Cranston (9,000) and National Grid city gate - Pawtucket, RI (6,000 MMBtu).
NGRI	Narragansett Electric	Tennessee	64025	FT-A	5,220	1,905,300	10/31/2027	TGP ConneXion - Transportation service used to transport gas from Tx Zone 0 (5,220 MMBtu) to National Grid city gates at Lincoln, RI (2,610 MMBtu) and Smithfield, RI (2,610).
NGRI	Narragansett Electric	Tennessee	64026	FT-A	6,380	2,328,700	10/31/2027	TGP ConneXion - Transportation service used to transport gas from Tx Zone 0 (6,380 MMBtu) to National Grid city gates at Lincoln, RI (3,190 MMBtu) and Smithfield, RI (3,190).
PG	Narragansett Electric	Texas Eastern	330844	FTS	6,377	2,327,605	10/31/2014	Part-157 (7C) transportation service used to transport gas from Leidy, PA (6,377 MMBtu) to interconnect with AGT at Lambertville, NJ (6,377 MMBtu).
BW	Narragansett Electric	Texas Eastern	330845	FTS	537	196,005	10/31/2014	Part-157 (7C) transportation service used to transport gas from Leidy, PA (537 MMBtu) to interconnect with AGT at Lambertville, NJ (537 MMBtu).
BW	Narragansett Electric	Texas Eastern	330867	FTS-5	813	122,763	03/31/2014	Part-157 (7C) transportation service used to transport gas from Chambersburg, PA (813 MMBtu) to Lambertville, NJ (813 MMBtu). During the period from Apr. 1 to Oct. 31 customer may not tender, without the consent of Pipeline, a daily quantity in excess of the product of the Southern Route Summer Capacity Factor multiplied by 813 dth.
VG	Narragansett Electric	Texas Eastern	330870	FTS-5	1,000	151,000	03/31/2014	Part-157 (7C) transportation service used to transport gas from Chambersburg, PA (1,000 MMBtu) to Lambertville, NJ (1,000 MMBtu). During the period from Apr. 1 to Oct. 31 customer may not tender, without the consent of Pipeline, a daily quantity in excess of the product of the Southern Route Summer Capacity Factor multiplied by 1,000 dth.

Legacy LDC	Shipper	Pipeline Company	Contract No.	Rate Schedule	MDQ	Annual Quantity	Expiration Date	Notes
PG	Narragansett Electric	Texas Eastern	330907	FTS-5	248	90,520	03/31/2014	Part-157 (7C) transportation service used to transport gas from Chambersburg, PA (248 MMBtu) to Lambertville, NJ (248 MMBtu). During the period from Apr. 1 to Oct. 31 customer may not tender, without the consent of Pipeline, a daily quantity in excess of the product of the Southern Route Summer Capacity Factor multiplied by 248 dth.
PG	Narragansett Electric	Texas Eastern	331722	FTS-7	538	196,370	03/31/2014	Part- 157 (7C) transportation service used to transport gas from Oakford, PA (538 MMBtu) to either interconnects at Lambertville or Hanover, NJ (538 MMBtu).
PG	Narragansett Electric	Texas Eastern	331801	FTS-8	79	28,835	03/31/2014	Part-157 (7C) transportation service used to transport gas from Leidy, PA (38 MMBtu) to either interconnects at Lambertville or Hanover, NJ. In addition, Oakford, PA (41 MMBtu) to either interconnects at Lambertville or Hanover, NJ.
BW	Narragansett Electric	Texas Eastern	331802	FTS-8	187	68,255	03/31/2014	Part-157 (7C) transportation service used to transport gas from Leidy, PA (89 MMBtu) to either interconnects at Lambertville or Hanover, NJ. In addition, Oakford, PA (98 MMBtu) to either interconnects at Lambertville or Hanover, NJ.
PG	Narragansett Electric	Texas Eastern	331819	FTS-8	4,745	1,731,925	03/31/2014	Part- 157 (7C) transportation service used to transport gas from Oakford, PA (4,745 MMBtu) to either interconnects at Lambertville or Hanover, NJ (4,745 MMBtu).
BW	Narragansett Electric	Texas Eastern	800156	SCT	2,099	766,135	10/31/2014	Part-284 transportation contract used to transport gas from the access areas at STX (585 MMBtu oper. entitle.), ETX (392 MMBtu oper. entitle.), WLA (900 MMBtu oper. entitle.), and ELA (1,504 MMBtu oper. entitle.) to the TETCO interconnect with AGT at Lambertville, NJ (2,099 MMBtu).
BW	Narragansett Electric	Texas Eastern	800173	SCT	1,474	538,010	10/31/2014	Part-284 transportation contract used to transport gas from the access areas at STX (401 MMBtu oper. entitle.), ETX (269 MMBtu oper. entitle.), WLA (617 MMBtu oper. entitle.), and ELA (1,031 MMBtu oper. entitle.) to the National Fuel interconnect at Bristoria, PA (925 MMBtu) and Oakford, PA (549 MMBtu).
PG	Narragansett Electric	Texas Eastern	800303	CDS	45,934	16,795,910	10/31/2014	Part-284 transportation contract used to transport gas from the access areas at STX (14,193 MMBtu oper. entitle.), ETX (9,523 MMBtu oper. entitle.), WLA (21,846 MMBtu oper. entitle.), and ELA (31,460 MMBtu oper. entitle.) to the TETCO interconnect with AGT at Lambertville, NJ (45,934 MMBtu) or Hanover, NJ (18,656 MMBtu) or Zone M3 Storage Point (6,665 MMBtu).
PG	Narragansett Electric	Texas Eastern	800440	CDS	944	344,560	10/31/2014	Part-284 transportation contract used to transport gas from TETCO FSS-1 #400515 to the TETCO interconnects at Lambertville, NJ (405 MMBtu) and Hanover, NJ (539 MMBtu).
NGRI	Narragansett Electric	TransCanada	42386	FT	1,012	369,380	10/31/2016	Transportation service used to transport gas from the Union Gas interconnect at Parkway to the interconnect with Iroquois Gas Transmission at Waddington, NY (1,012 MMBtu).
PG	Narragansett Electric	Transco	9081765	FT Zn2-6	141	51,465	10/30/2012	Part-284 transportation service used to transport gas from the UTOS - TGPL Meter Zn2 (138 MMBtu) to DTI Leidy, PA Zn6 (138 MMBtu). Also, from TETCO interconnect at Ragley Zn3 (3 MMBtu) to DTI Leidy, PA Zn6 (3 MMBtu). Evergreen.
PG	Narragansett Electric	Transco	9081767	FT Zn6-6	1,240	452,600	03/31/2012	Part-284 transportation service used to transport gas from the National Fuel interconnect at Wharton (1,240 MMBtu) to the Algonquin interconnect at Centerville, NJ (1,240 MMBtu). Evergreen.
NGRI	Narragansett Electric	Union Gas	M12164	FT	1,025	374,125	10/31/2016	Transportation service used to transport gas from Dawn, Ontario to the interconnect with TransCanada Pipeline at Parkway (1,025 MMBtu).

Note: If volumes transported to points other than primary points as listed on the contract, maximum commodity rate per TGP's tariff, apply.

**Storage Contracts**

Legacy LDC	Shipper	Pipeline Company	Contract No.	Rate Schedule	MDWQ	Annual Quantity	Expiration Date	Notes
PG	Narragansett Electric	Columbia	9630	FSS	2,545	203,957	04/01/2040	Part-284 storage service that provides storage capacity with an injection rate of 2,545 MMBtu/day.
RI	Narragansett Electric	Dominion	300168	GSS	1,401	154,050	03/31/2015	Part-284 storage service that provides storage capacity with an injection rate of 856 MMBtu/day.
RI	Narragansett Electric	Dominion	300169	GSS	2,061	206,100	03/31/2017	Part-284 storage service that provides storage capacity with an injection rate of 1,145 MMBtu/day.
RI	Narragansett Electric	Dominion	300170	GSS	5,324	490,340	03/31/2015	Part-284 storage service that provides storage capacity with an injection rate of 2,724 MMBtu/day.
RI	Narragansett Electric	Dominion	300171	GSS	2,617	188,814	03/31/2017	Part-284 storage service that provides storage capacity with an injection rate of 1,049 MMBtu/day.
PG	Narragansett Electric	Dominion	600045	GSS-TE	14,337	1,376,324	03/31/2017	Part-157 (7C) storage service that provides storage capacity with an injection rate of 7,646 MMBtu/day.
VG	Narragansett Electric	Tennessee	501	FSMA	10,920	605,343	10/31/2015	Storage service that provides storage capacity at an injection rate of 4,036 MMBtu/day.
PG	Narragansett Electric	Tennessee	62918	FSMA	10,249	210,000	10/31/2015	Storage service that provides storage capacity at an injection rate of 1,400 MMBtu/day.
BW	Narragansett Electric	Texas Eastern	400185	SS-1	665	51,990	04/30/2014	Part-284 storage service that provides storage capacity with an injection rate of 267 MMBtu/day. [from Oakford and Leidy storage fields to interconnect at Lambertville, NJ (349 MMBtu) and interconnect at Hanover, NJ (506 MMBtu).]
PG	Narragansett Electric	Texas Eastern	400221	SS-1	14,137	1,188,033	04/30/2014	Part-284 storage service that provides storage capacity with an injection rate of 6,107 MMBtu/day. [from Oakford and Leidy storage fields to interconnect at Lambertville, NJ (8,017 MMBtu) and interconnect at Hanover, NJ (11,515 MMBtu).]
PG	Narragansett Electric	Texas Eastern	400515	FSS-1	944	56,640	04/30/2014	Part-284 storage service that provides storage capacity with an injection rate of 291 MMBtu/day.



**National Grid - RI SUPPLY ASSETS**

All Volumes = MMBtu

**Canadian Supply Assets:**

Shipper	Supply Company	Contract No.	MDQ	Annual Quantity	Expiration Date	Notes
Narragansett Electric	BG Energy		1,012	152,812	03/31/2012	AMA between National Grid - RI and BG Energy that provides gas commodity from Western Canada at the Canadian-US border at Waddington, New York on Iroquois Gas Transmission.

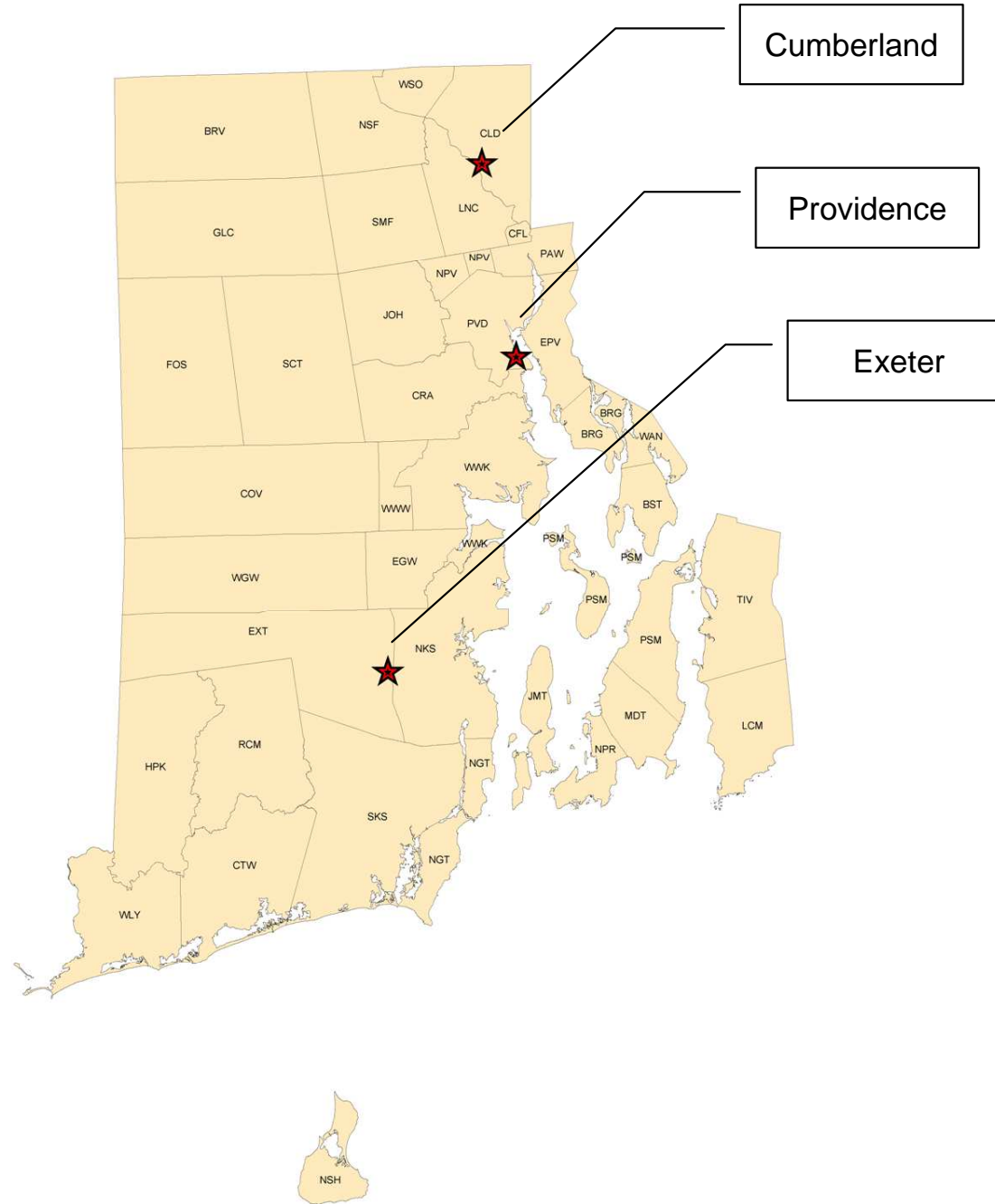
**Peaking Supply Assets:**

Shipper	Supply Company	Contract No.	MDQ	Annual Quantity	Expiration Date	Notes
Narragansett Electric	Distrigas	NSB042-1	2,850	125,000	03/31/2012	Firm Liquid Supply Agreement between National Grid - RI and Distrigas that provides LNG for trucking to fill the three Rhode Island LNG tanks.
Narragansett Electric	NationalGrid LNG	LNG003	95,000	600,000	05/01/2019	National Grid LNG Tank in Providence, RI

**NATIONAL GRID - Rhode Island**

**LNG FACILITIES**

<b>LNG Plant</b>	<b>Storage Capacity MMBtu</b>	<b>Vaporization Capacity (MMBtu/Day)</b>	<b>Hourly Capacity (MMBtu/Hour)</b>
NGLNG - Providence	600,000	95,000	3,960
Exeter	202,000	18,000	750
Cumberland	86,000	32,000	1,300
<b>Total</b>	<b>888,000</b>	<b>145,000</b>	<b>6,010</b>



# Rhode Island LNG Facilities

★ LNG Facility



National Grid Rhode Island  
Comparison of Resources and Requirements  
Design Year  
(BBtu)

		HEATING SEASON (Nov-Mar)				
		<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
<u>REQUIREMENTS</u>						
1	Firm Sendout					
	Valley	4,649	4,719	4,671	4,654	4,760
	Providence	18,283	18,600	18,394	18,318	18,769
	Warren	617	626	620	618	631
	Westerly	414	420	416	414	424
2	Fuel Reimbursement	1,135	1,120	1,099	1,096	1,115
3	Storage Refill	95	125	20	17	32
4	TOTAL	25,194	25,610	25,220	25,117	25,731
<u>RESOURCES</u>						
5	TGP					
	Dawn	156	155	155	155	156
6	Niagara	122	89	135	135	138
7	Gulf Coast	5,507	5,883	5,766	5,754	5,840
8	Dracut	277	389	370	359	492
9	Storage	981	1,124	1,282	1,284	1,284
10	TET/AGT					
	TET Long-Haul	6,576	6,197	5,849	5,822	5,953
11	TCO	7,018	6,970	6,970	6,970	7,018
12	Transco	11	10	17	17	18
13	Hubline	59	64	65	65	68
14	East to West	281	285	278	277	284
15	M3	1,443	1,464	1,312	1,288	1,413
16	Storage	1,791	1,843	2,108	2,107	2,116
17	DOMAC					
	Liquid	95	125	20	17	32
18	LNG From Storage	878	1,013	892	868	920
19	TOTAL	25,194	25,609	25,219	25,116	25,731

National Grid Rhode Island  
Comparison of Resources and Requirements  
Design Year  
(BBtu)

NON-HEATING SEASON (Apr-Oct)

		<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
<u>REQUIREMENTS</u>						
1	Firm Sendout					
	Valley	2,328	2,294	2,279	2,284	2,330
	Providence	6,035	5,910	5,858	5,885	6,049
	Warren	265	262	260	261	265
	Westerly	226	223	222	222	227
2	Fuel Reimbursement	481	437	453	453	459
3	Storage Refill	3,966	4,199	4,452	4,430	4,478
4	TOTAL	13,300	13,325	13,523	13,535	13,808
<u>RESOURCES</u>						
5	TGP					
	Dawn	0	0	0	0	0
6	Niagara	120	121	198	197	202
7	Gulf Coast	4,292	4,288	3,810	3,820	3,841
8	Dracut	110	222	397	398	418
9	Storage	265	199	44	44	44
10	TET/AGT					
	TET Long-Haul	2,396	1,790	2,079	2,078	2,088
11	TCO	3,706	3,638	3,966	3,947	4,068
12	Transco	0	0	0	0	0
13	Hubline	1	1	1	1	1
14	East to West	1	1	1	1	1
15	M3	1,337	1,887	1,865	1,908	1,966
16	Storage	1	1	1	1	1
17	DOMAC					
	Liquid	928	1,032	1,017	995	1,032
18	LNG From Storage	145	145	145	145	145
19	TOTAL	13,300	13,325	13,523	13,535	13,807

National Grid Rhode Island  
Comparison of Resources and Requirements  
Design Year  
(BBtu)

		ANNUAL				
		<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
<u>REQUIREMENTS</u>						
1	Firm Sendout					
	Valley	6,977	7,012	6,950	6,938	7,091
	Providence	24,318	24,510	24,252	24,202	24,818
	Warren	882	887	880	879	897
	Westerly	640	643	638	637	650
2	Fuel Reimbursement	1,616	1,558	1,552	1,549	1,574
3	Storage Refill	4,061	4,324	4,472	4,448	4,510
4	TOTAL	38,494	38,934	38,743	38,652	39,539
<u>RESOURCES</u>						
5	TGP					
	Dawn	156	155	155	155	156
6	Niagara	242	211	333	331	340
7	Gulf Coast	9,799	10,171	9,576	9,574	9,681
8	Dracut	387	611	767	757	909
9	Storage	1,246	1,323	1,326	1,328	1,328
10	TET/AGT					
	TET Long-Haul	8,971	7,987	7,928	7,899	8,042
11	TCO	10,724	10,608	10,936	10,917	11,086
12	Transco	11	10	17	17	18
13	Hubline	61	65	67	66	70
14	East to West	281	285	279	278	285
15	M3	2,780	3,350	3,177	3,196	3,379
16	Storage	1,792	1,844	2,109	2,108	2,118
17	DOMAC					
	Liquid	1,023	1,158	1,037	1,012	1,064
18	LNG From Storage	1,023	1,158	1,037	1,012	1,065
19	TOTAL	38,494	38,934	38,743	38,651	39,538

National Grid Rhode Island  
Comparison of Resources and Requirements  
Design Year  
(BBtu)

		Design Day				
		<u>Jan 2012</u>	<u>Jan 2013</u>	<u>Jan 2014</u>	<u>Jan 2015</u>	<u>Jan 2016</u>
<u>REQUIREMENTS</u>						
1	Firm Sendout					
	Valley	56	58	58	57	58
	Providence	230	238	235	235	239
	Warren	8	8	8	8	8
	Westerly	5	5	5	5	5
2	Fuel Reimbursement	6	6	9	10	9
3	Storage Refill	3	3	0	0	0
4	TOTAL	308	318	315	315	319
<u>RESOURCES</u>						
5	TGP					
	Dawn	1	1	1	1	1
6	Niagara	1	1	1	1	1
7	Gulf Coast	42	42	42	42	42
8	Dracut	0	0	6	6	6
9	Storage	11	11	11	11	11
10	TET/AGT					
	TET Long-Haul	48	48	48	48	48
11	TCO	49	49	49	49	49
12	Transco	0	0	0	0	0
13	Hubline	1	1	1	1	1
14	East to West	2	2	2	2	2
15	M3	17	17	17	17	18
16	Storage	28	28	28	28	27
17	DOMAC					
	Liquid	3	3	0	0	0
18	LNG From Storage	105	115	109	108	113
19	TOTAL	308	318	315	314	319

National Grid Rhode Island  
Comparison of Resources and Requirements  
Normal Year  
(BBtu)

		HEATING SEASON (Nov-Mar)				
		<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
<u>REQUIREMENTS</u>						
1	Firm Sendout					
	Valley	4,157	4,215	4,171	4,154	4,248
	Providence	16,001	16,266	16,076	16,005	16,396
	Warren	549	555	550	548	560
	Westerly	370	375	371	370	378
2	Fuel Reimbursement	1,036	1,013	980	975	999
3	Storage Refill	17	36	5	5	5
4	TOTAL	22,129	22,460	22,152	22,057	22,585
<u>RESOURCES</u>						
5	TGP					
	Dawn	156	155	155	155	156
6	Niagara	75	66	125	125	126
7	Gulf Coast	5,134	5,535	5,343	5,327	5,423
8	Dracut	40	61	74	69	98
9	Storage	901	1,075	1,282	1,284	1,282
10	TET/AGT					
	TET Long-Haul	5,848	5,327	4,803	4,764	4,935
11	TCO	7,015	6,967	6,966	6,966	7,015
12	Transco	7	8	14	14	15
13	Hubline	51	55	62	62	61
14	East to West	230	224	217	216	221
15	M3	668	760	578	559	663
16	Storage	1,528	1,649	2,043	2,035	2,069
17	DOMAC					
	Liquid	17	36	5	5	5
18	LNG From Storage	460	543	487	479	516
19	TOTAL	22,130	22,460	22,152	22,057	22,585



National Grid Rhode Island  
Comparison of Resources and Requirements  
Normal Year  
(BBtu)

NON-HEATING SEASON (Apr-Oct)

		<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
<u>REQUIREMENTS</u>						
1	Firm Sendout					
	Valley	2,221	2,187	2,173	2,176	2,222
	Providence	5,530	5,410	5,360	5,376	5,539
	Warren	249	246	244	245	249
	Westerly	217	215	213	213	218
2	Fuel Reimbursement	431	408	439	438	445
3	Storage Refill	3,245	3,543	3,996	3,981	4,051
4	TOTAL	11,893	12,009	12,425	12,428	12,725
<u>RESOURCES</u>						
5	TGP					
	Dawn	0	0	0	0	0
6	Niagara	119	117	198	196	202
7	Gulf Coast	4,101	4,137	3,722	3,726	3,742
8	Dracut	83	195	364	365	386
9	Storage	228	169	44	44	44
10	TET/AGT					
	TET Long-Haul	1,934	1,580	2,009	2,000	2,037
11	TCO	3,602	3,542	3,864	3,843	3,966
12	Transco	0	0	0	0	0
13	Hubline	1	0	0	1	1
14	East to West	0	0	0	0	0
15	M3	1,093	1,473	1,453	1,490	1,546
16	Storage	0	0	0	0	0
17	DOMAC					
	Liquid	588	650	627	619	656
18	LNG From Storage	145	145	145	145	145
19	TOTAL	11,894	12,009	12,425	12,428	12,724

National Grid Rhode Island  
Comparison of Resources and Requirements  
Normal Year  
(BBtu)

		ANNUAL				
		<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
<u>REQUIREMENTS</u>						
1	Firm Sendout					
	Valley	6,378	6,402	6,344	6,330	6,470
	Providence	21,532	21,676	21,435	21,381	21,935
	Warren	798	801	794	793	809
	Westerly	587	590	584	583	595
2	Fuel Reimbursement	1,467	1,421	1,419	1,413	1,444
3	Storage Refill	3,262	3,580	4,001	3,985	4,056
4	TOTAL	34,023	34,469	34,577	34,485	35,310
<u>RESOURCES</u>						
5	TGP					
	Dawn	156	155	155	155	156
6	Niagara	195	183	322	321	328
7	Gulf Coast	9,235	9,672	9,064	9,053	9,165
8	Dracut	122	256	438	434	485
9	Storage	1,129	1,244	1,326	1,327	1,326
10	TET/AGT					
	TET Long-Haul	7,783	6,907	6,812	6,764	6,972
11	TCO	10,617	10,509	10,830	10,809	10,981
12	Transco	7	8	14	14	15
13	Hubline	51	55	62	62	62
14	East to West	230	224	217	216	221
15	M3	1,761	2,233	2,031	2,049	2,209
16	Storage	1,528	1,649	2,043	2,035	2,069
17	DOMAC					
	Liquid	605	687	631	623	660
18	LNG From Storage	605	687	631	624	661
19	TOTAL	34,023	34,469	34,577	34,485	35,309

National Grid Rhode Island  
Comparison of Resources and Requirements  
Cold Snap Year  
(BBtu)

		HEATING SEASON (Nov-Mar)				
		<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
<u>REQUIREMENTS</u>						
1	Firm Sendout					
	Valley	4,326	4,384	4,340	4,324	4,418
	Providence	17,223	17,488	17,297	17,226	17,624
	Warren	571	578	572	570	582
	Westerly	383	388	384	382	391
2	Fuel Reimbursement	1,062	1,038	1,011	1,007	1,029
3	Storage Refill	125	125	113	105	125
4	TOTAL	23,690	24,000	23,717	23,614	24,168
<u>RESOURCES</u>						
5	TGP					
	Dawn	156	155	155	155	156
6	Niagara	81	71	125	125	127
7	Gulf Coast	5,227	5,602	5,397	5,383	5,475
8	Dracut	235	380	350	339	386
9	Storage	905	1,082	1,282	1,284	1,282
10	TET/AGT					
	TET Long-Haul	5,992	5,477	5,045	5,012	5,170
11	TCO	7,014	6,966	6,965	6,965	7,014
12	Transco	9	9	15	15	15
13	Hubline	60	66	73	73	74
14	East to West	241	276	236	229	283
15	M3	978	1,058	877	856	958
16	Storage	1,654	1,721	2,084	2,082	2,091
17	DOMAC					
	Liquid	125	125	113	105	125
18	LNG From Storage	1,013	1,013	1,001	993	1,013
19	TOTAL	23,690	24,000	23,716	23,614	24,168

National Grid Rhode Island  
Comparison of Resources and Requirements  
Cold Snap Year  
(BBtu)

NON-HEATING SEASON (Apr-Oct)

		<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
<u>REQUIREMENTS</u>						
1	Firm Sendout					
	Valley	2,242	2,212	2,179	2,165	2,167
	Providence	5,139	5,051	4,932	4,882	4,896
	Warren	251	249	246	245	245
	Westerly	222	219	216	215	215
2	Fuel Reimbursement	434	403	428	426	427
3	Storage Refill	3,833	4,011	4,443	4,442	4,450
4	TOTAL	12,121	12,144	12,443	12,373	12,399
<u>RESOURCES</u>						
5	TGP					
	Dawn	0	0	0	0	0
6	Niagara	120	117	194	192	190
7	Gulf Coast	4,122	4,163	3,732	3,726	3,727
8	Dracut	81	196	359	352	353
9	Storage	242	175	44	44	44
10	TET/AGT					
	TET Long-Haul	2,105	1,658	2,053	2,051	2,061
11	TCO	3,189	3,069	3,347	3,312	3,291
12	Transco	0	0	0	0	0
13	Hubline	0	1	1	0	1
14	East to West	0	0	0	0	0
15	M3	1,084	1,588	1,538	1,519	1,555
16	Storage	0	0	0	0	0
17	DOMAC					
	Liquid	1,032	1,032	1,032	1,032	1,032
18	LNG From Storage	145	145	145	145	145
19	TOTAL	12,121	12,144	12,443	12,373	12,399

National Grid Rhode Island  
Comparison of Resources and Requirements  
Cold Snap Year  
(BBtu)

			ANNUAL				
			<u>2011/12</u>	<u>2012/13</u>	<u>2013/14</u>	<u>2014/15</u>	<u>2015/16</u>
<u>REQUIREMENTS</u>							
1	Firm Sendout	Valley	6,568	6,596	6,519	6,488	6,584
		Providence	22,363	22,539	22,229	22,108	22,520
		Warren	822	827	818	815	827
		Westerly	605	607	600	597	605
2	Fuel Reimbursement		1,496	1,440	1,438	1,433	1,455
3	Storage Refill		3,958	4,135	4,555	4,546	4,575
4	TOTAL		35,811	36,144	36,160	35,986	36,567
<u>RESOURCES</u>							
5	TGP	Dawn	156	155	155	155	156
6		Niagara	202	188	319	316	317
7		Gulf Coast	9,349	9,766	9,129	9,109	9,202
8		Dracut	316	576	709	692	739
9		Storage	1,147	1,257	1,326	1,328	1,326
10	TET/AGT	TET Long-Haul	8,097	7,136	7,098	7,063	7,231
11		TCO	10,204	10,035	10,312	10,277	10,305
12		Transco	9	9	15	15	15
13		Hubline	61	67	74	74	74
14		East to West	241	276	236	229	283
15		M3	2,062	2,646	2,415	2,374	2,513
16		Storage	1,654	1,721	2,084	2,082	2,091
17	DOMAC	Liquid	1,157	1,157	1,145	1,137	1,157
18	LNG From Storage		1,157	1,158	1,145	1,137	1,158
19	TOTAL		35,811	36,144	36,160	35,987	36,566

# Appendix

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 1012 1101 Residential Non-Heat  
Model: Customer Counts

GOF R-Square= 0.997761 SSE= 886469.8 MSE= 9849.665  
Model:  $Y(t) = 78474.76 - 2.72163 * X(t) + E(t)$   
Where:  $X(t) =$  Time  
 $E(t) = -0.98798 * [Y(t) - Y(t-1)] + \epsilon(t)$   
 $\epsilon(t) = (h(t))^{(1/2)} * \epsilon(t)$  (where  $t=2,3,5,11,12$ )

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data Time
Jan-05	34,321	Jan-11	27,523	2005	33,450	
Feb-05	34,254	Feb-11	27,292	2006	32,638	
Mar-05	34,124	Mar-11	27,142	2007	31,996	
Apr-05	33,996	Apr-11	26,989	2008	31,346	
May-05	33,921	May-11	26,867	2009	29,898	
Jun-05	33,780	Jun-11	26,738	2010	27,617	
Jul-05	33,715	Jul-11	26,647	2011	26,476	
Aug-05	33,629	Aug-11	26,620	2012	25,982	
Sep-05	33,610	Sep-11	26,611	2013	25,152	
Oct-05	33,564	Oct-11	26,520	2014	24,244	
Nov-05	33,525	Nov-11	26,530	2015	23,335	
Dec-05	33,450	Dec-11	26,476			
Jan-06	33,237	Jan-12	26,879			
Feb-06	33,179	Feb-12	26,780			
Mar-06	33,032	Mar-12	26,626			
Apr-06	32,947	Apr-12	26,449			
May-06	32,848	May-12	26,317			
Jun-06	32,797	Jun-12	26,194			
Jul-06	32,755	Jul-12	26,191			
Aug-06	32,688	Aug-12	26,185			
Sep-06	32,739	Sep-12	26,174			
Oct-06	32,693	Oct-12	26,153			
Nov-06	32,658	Nov-12	26,116			
Dec-06	32,638	Dec-12	25,982			
Jan-07	32,503	Jan-13	25,946			
Feb-07	32,315	Feb-13	25,875			
Mar-07	32,267	Mar-13	25,752			
Apr-07	32,171	Apr-13	25,578			
May-07	32,102	May-13	25,420			
Jun-07	32,031	Jun-13	25,322			
Jul-07	31,973	Jul-13	25,245			
Aug-07	31,956	Aug-13	25,243			
Sep-07	31,984	Sep-13	25,238			
Oct-07	31,991	Oct-13	25,228			
Nov-07	31,997	Nov-13	25,201			
Dec-07	31,996	Dec-13	25,152			
Jan-08	31,899	Jan-14	25,026			
Feb-08	31,807	Feb-14	24,975			
Mar-08	31,693	Mar-14	24,882			
Apr-08	31,568	Apr-14	24,725			
May-08	31,460	May-14	24,550			
Jun-08	31,350	Jun-14	24,421			
Jul-08	31,290	Jul-14	24,308			
Aug-08	31,268	Aug-14	24,308			
Sep-08	31,264	Sep-14	24,307			
Oct-08	31,308	Oct-14	24,306			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

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Model:  $Y(t) = 78474.76 - 2.72163 * X(t) + E(t)$   
Where:  $X(t) = \text{Time}$   
 $E(t) = -0.98798 * [Y(t) - Y(t-1)] + \epsilon(t)$   
 $\epsilon(t) = (h(t))^{(1/2)} * \epsilon(t)$  (where  $t=2,3,5,11,12$ )

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Economic Year End Data Customers Time
Nov-08	31,361	Nov-14	24,287		
Dec-08	31,346	Dec-14	24,244		
Jan-09	31,244	Jan-15	24,104		
Feb-09	30,946	Feb-15	24,066		
Mar-09	30,728	Mar-15	23,999		
Apr-09	30,571	Apr-15	23,867		
May-09	30,443	May-15	23,695		
Jun-09	30,271	Jun-15	23,538		
Jul-09	30,206	Jul-15	23,447		
Aug-09	30,106	Aug-15	23,373		
Sep-09	30,044	Sep-15	23,374		
Oct-09	30,046	Oct-15	23,378		
Nov-09	30,055	Nov-15	23,370		
Dec-09	29,898	Dec-15	23,335		
Jan-10	29,433	Jan-16	23,278		
Feb-10	28,964	Feb-16	23,150		
Mar-10	28,796	Mar-16	23,103		
Apr-10	28,518	Apr-16	23,001		
May-10	28,321	May-16	22,844		
Jun-10	28,158	Jun-16	22,670		
Jul-10	27,865	Jul-16	22,548		
Aug-10	27,818	Aug-16	22,437		
Sep-10	27,642	Sep-16	22,440		
Oct-10	27,660	Oct-16	22,448		
Nov-10	27,715	Nov-16	22,448		
Dec-10	27,617	Dec-16	22,424		
Jan-11	27,523				



**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 1012 1101 Residential Non-Heat  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0.991427 DW= 2.022146 SSE= 0.025312 MSE= 0.000329  
Model:  $Y(t) = 0.601272 * X1(t) + 0.000136 * X2(t) - 0.0494 * d2 - 0.04839 * d3 - 0.0271 * d4 + 0.01832 * d6 + 0.034237 * d7$   
 $+ 0.036413 * D8 + 0.041768 * D9 + 0.031584 * D10 + 0.025254 * D11 + E(t)$   
Where: X1(t)= Lagged\_UPC X2(t)= BDDA  
d2-d4, d6-d11 are dummy variables for month Feb to Apr and Jun to Nov respectively  
 $E(t) = -0.4531 * [Y(t-10) - Y(t-11)] + \epsilon$

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Date	Economic Data Lagged_UPC	BDDA
Jan-05	0.07	Jan-11	0.10	2005	0.64	Jan-05		1054
Feb-05	0.08	Feb-11	0.11	2006	0.62	Feb-05	0.07	1133
Mar-05	0.07	Mar-11	0.09	2007	0.64	Mar-05	0.08	1052
Apr-05	0.06	Apr-11	0.08	2008	0.70	Apr-05	0.07	691
May-05	0.05	May-11	0.05	2009	0.82	May-05	0.06	422
Jun-05	0.05	Jun-11	0.05	2010	0.75	Jun-05	0.05	206
Jul-05	0.04	Jul-11	0.04	2011	0.74	Jul-05	0.05	24
Aug-05	0.03	Aug-11	0.03	2012	0.70	Aug-05	0.04	2
Sep-05	0.04	Sep-11	0.04	2013	0.71	Sep-05	0.03	4
Oct-05	0.04	Oct-11	0.04	2014	0.71	Oct-05	0.04	119
Nov-05	0.05	Nov-11	0.06	2015	0.71	Nov-05	0.04	442
Dec-05	0.06	Dec-11	0.07			Dec-05	0.05	873
Jan-06	0.07	Jan-12	0.09			Jan-06	0.06	984
Feb-06	0.06	Feb-12	0.10			Feb-06	0.07	857
Mar-06	0.06	Mar-12	0.09			Mar-06	0.06	986
Apr-06	0.06	Apr-12	0.07			Apr-06	0.06	615
May-06	0.06	May-12	0.05			May-06	0.06	350
Jun-06	0.05	Jun-12	0.04			Jun-06	0.06	122
Jul-06	0.04	Jul-12	0.04			Jul-06	0.05	11
Aug-06	0.03	Aug-12	0.03			Aug-06	0.04	0
Sep-06	0.04	Sep-12	0.03			Sep-06	0.03	24
Oct-06	0.04	Oct-12	0.04			Oct-06	0.04	172
Nov-06	0.05	Nov-12	0.05			Nov-06	0.04	435
Dec-06	0.06	Dec-12	0.07			Dec-06	0.05	609
Jan-07	0.06	Jan-13	0.10			Jan-07	0.06	800
Feb-07	0.08	Feb-13	0.10			Feb-07	0.06	1116
Mar-07	0.07	Mar-13	0.09			Mar-07	0.08	1031
Apr-07	0.06	Apr-13	0.07			Apr-07	0.07	741
May-07	0.05	May-13	0.05			May-07	0.06	346
Jun-07	0.05	Jun-13	0.04			Jun-07	0.05	104
Jul-07	0.04	Jul-13	0.03			Jul-07	0.05	13
Aug-07	0.03	Aug-13	0.03			Aug-07	0.04	4
Sep-07	0.04	Sep-13	0.03			Sep-07	0.03	18
Oct-07	0.04	Oct-13	0.04			Oct-07	0.04	83
Nov-07	0.05	Nov-13	0.05			Nov-07	0.04	393
Dec-07	0.06	Dec-13	0.07			Dec-07	0.05	883
Jan-08	0.08	Jan-14	0.09			Jan-08	0.06	1015
Feb-08	0.09	Feb-14	0.10			Feb-08	0.08	951
Mar-08	0.08	Mar-14	0.09			Mar-08	0.09	896
Apr-08	0.07	Apr-14	0.07			Apr-08	0.08	673
May-08	0.06	May-14	0.05			May-08	0.07	341
Jun-08	0.05	Jun-14	0.04			Jun-08	0.06	139
Jul-08	0.03	Jul-14	0.03			Jul-08	0.05	9
Aug-08	0.04	Aug-14	0.03			Aug-08	0.03	1
Sep-08	0.03	Sep-14	0.03			Sep-08	0.04	18

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 1012 1101 Residential Non-Heat  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0.991427 DW= 2.022146 SSE= 0.025312 MSE= 0.000329  
Model:  $Y(t) = 0.601272 * X1(t) + 0.000136 * X2(t) - 0.0494 * d2 - 0.04839 * d3 - 0.0271 * d4 + 0.01832 * d6 + 0.034237 * d7$   
 $+ 0.036413 * D8 + 0.041768 * D9 + 0.031584 * D10 + 0.025254 * D11 + E(t)$   
Where:  $X1(t) = \text{Lagged\_UPC}$   $X2(t) = \text{BDDA}$   
d2-d4, d6-d11 are dummy variables for month Feb to Apr and Jun to Nov respectively  
 $E(t) = -0.4531 * [Y(t-10) - Y(t-11)] + \epsilon$

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data Date	Lagged_UPC	BDDA
Oct-08	0.04	Oct-14	0.04			Oct-08	0.03	165
Nov-08	0.06	Nov-14	0.05			Nov-08	0.04	480
Dec-08	0.08	Dec-14	0.07			Dec-08	0.06	844
Jan-09	0.11	Jan-15	0.09			Jan-09	0.08	1147
Feb-09	0.12	Feb-15	0.10			Feb-09	0.11	1164
Mar-09	0.09	Mar-15	0.09			Mar-09	0.12	951
Apr-09	0.09	Apr-15	0.07			Apr-09	0.09	710
May-09	0.06	May-15	0.05			May-09	0.09	329
Jun-09	0.04	Jun-15	0.04			Jun-09	0.06	147
Jul-09	0.05	Jul-15	0.04			Jul-09	0.04	32
Aug-09	0.04	Aug-15	0.03			Aug-09	0.05	2
Sep-09	0.04	Sep-15	0.03			Sep-09	0.04	27
Oct-09	0.04	Oct-15	0.04			Oct-09	0.04	218
Nov-09	0.06	Nov-15	0.05			Nov-09	0.04	433
Dec-09	0.08	Dec-15	0.07			Dec-09	0.06	680
Jan-10	0.12	Jan-16	0.09			Jan-10	0.08	1168
Feb-10	0.11	Feb-16	0.09			Feb-10	0.12	1057
Mar-10	0.09	Mar-16	0.08			Mar-10	0.11	801
Apr-10	0.07	Apr-16	0.08			Apr-10	0.09	471
May-10	0.05	May-16	0.05			May-10	0.07	261
Jun-10	0.04	Jun-16	0.04			Jun-10	0.05	67
Jul-10	0.04	Jul-16	0.04			Jul-10	0.04	7
Aug-10	0.03	Aug-16	0.03			Aug-10	0.04	1
Sep-10	0.03	Sep-16	0.03			Sep-10	0.03	15
Oct-10	0.04	Oct-16	0.04			Oct-10	0.03	128
Nov-10	0.05	Nov-16	0.05			Nov-10	0.04	408
Dec-10	0.08	Dec-16	0.08			Dec-10	0.05	825
Jan-11	0.10					Jan-11		

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 1247 1301 Residential Heating  
Model: Customer Counts

GOF R-Square= 0.996183 DW= 2.101278 SSE= 6417048 MSE= 82269.84  
Model:  $Y(t) = 109666 + 0.4850831 * X(t) - 1090.6 * d4 - 2415.55 * d5 - 3856.25 * d6 - 4700.87 * d7 - 5300.9 * d8$   
 $- 5133.26 * d9 - 3820.68 * d10 - 1900.62 * d11 - 579.24 * d12 + E(t)$   
Where: X(t)= Date d4 - d12 are dummy variables for month Apr to Dec respectively  
 $E(t) = -0.77519 * [Y(t)-Y(t-1)] + \epsilon$

date	Actual Monthly Customer Counts		Forecast Monthly Customer Counts		Year End Customers		Economic Data	
	date	Counts	date	Counts	Year	Customers	Date	time
Jan-05	190,126	Jan-11	200,705	2005	190,870	Jan-05		
Feb-05	190,318	Feb-11	201,070	2006	192,389	Feb-05		
Mar-05	190,151	Mar-11	200,970	2007	193,904	Mar-05		
Apr-05	189,105	Apr-11	200,373	2008	195,225	Apr-05		
May-05	187,757	May-11	198,864	2009	196,686	May-05		
Jun-05	186,183	Jun-11	197,666	2010	200,007	Jun-05		
Jul-05	185,392	Jul-11	197,144	2011	200,546	Jul-05		
Aug-05	184,519	Aug-11	196,767	2012	202,845	Aug-05		
Sep-05	184,974	Sep-11	196,840	2013	204,613	Sep-05		
Oct-05	186,358	Oct-11	197,556	2014	206,382	Oct-05		
Nov-05	188,863	Nov-11	199,476	2015	208,152	Nov-05		
Dec-05	190,870	Dec-11	200,546			Dec-05		
Jan-06	191,032	Jan-12	201,827			Jan-06		
Feb-06	191,610	Feb-12	201,976			Feb-06		
Mar-06	191,513	Mar-12	202,108			Mar-06		
Apr-06	190,633	Apr-12	201,170			Apr-06		
May-06	189,275	May-12	199,992			May-06		
Jun-06	188,137	Jun-12	198,704			Jun-06		
Jul-06	187,307	Jul-12	198,001			Jul-06		
Aug-06	186,745	Aug-12	197,549			Aug-06		
Sep-06	187,575	Sep-12	197,868			Sep-06		
Oct-06	188,985	Oct-12	199,319			Oct-06		
Nov-06	190,988	Nov-12	201,380			Nov-06		
Dec-06	192,389	Dec-12	202,845			Dec-06		
Jan-07	193,198	Jan-13	203,578			Jan-07		
Feb-07	193,367	Feb-13	203,733			Feb-07		
Mar-07	193,505	Mar-13	203,864			Mar-07		
Apr-07	192,556	Apr-13	202,930			Apr-07		
May-07	191,007	May-13	201,755			May-07		
Jun-07	190,072	Jun-13	200,469			Jun-07		
Jul-07	189,224	Jul-13	199,768			Jul-07		
Aug-07	188,747	Aug-13	199,318			Aug-07		
Sep-07	189,081	Sep-13	199,639			Sep-07		
Oct-07	190,389	Oct-13	201,091			Oct-07		
Nov-07	192,730	Nov-13	203,151			Nov-07		
Dec-07	193,904	Dec-13	204,613			Dec-07		
Jan-08	194,327	Jan-14	205,347			Jan-08		
Feb-08	194,525	Feb-14	205,503			Feb-08		
Mar-08	194,316	Mar-14	205,633			Mar-08		
Apr-08	193,500	Apr-14	204,699			Apr-08		
May-08	192,470	May-14	203,524			May-08		
Jun-08	191,410	Jun-14	202,239			Jun-08		
Jul-08	190,200	Jul-14	201,540			Jul-08		
Aug-08	189,935	Aug-14	201,089			Aug-08		
Sep-08	189,947	Sep-14	201,412			Sep-08		
Oct-08	191,776	Oct-14	202,862			Oct-08		

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 1247 1301 Residential Heating  
Model: Customer Counts

GOF R-Square= 0.996183 DW= 2.101278 SSE= 6417048 MSE= 82269.84  
Model:  $Y(t) = 109666 + 0.4850831 * X(t) - 1090.6 * d4 - 2415.55 * d5 - 3856.25 * d6 - 4700.87 * d7 - 5300.9 * d8$   
 $- 5133.26 * d9 - 3820.68 * d10 - 1900.62 * d11 - 579.24 * d12 + E(t)$   
Where: X(t)= Date d4 - d12 are dummy variables for month Apr to Dec respectively  
E(t) =  $-0.77519 * [Y(t)-Y(t-1)] + \epsilon$

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data Date	time
Nov-08	193,986	Nov-14	204,921			Nov-08	
Dec-08	195,225	Dec-14	206,382			Dec-08	
Jan-09	196,041	Jan-15	207,115			Jan-09	
Feb-09	196,380	Feb-15	207,272			Feb-09	
Mar-09	196,304	Mar-15	207,401			Mar-09	
Apr-09	195,139	Apr-15	206,469			Apr-09	
May-09	194,459	May-15	205,293			May-09	
Jun-09	192,812	Jun-15	204,009			Jun-09	
Jul-09	192,550	Jul-15	203,310			Jul-09	
Aug-09	191,975	Aug-15	202,860			Aug-09	
Sep-09	192,054	Sep-15	203,185			Sep-09	
Oct-09	193,982	Oct-15	204,636			Oct-09	
Nov-09	195,208	Nov-15	206,693			Nov-09	
Dec-09	196,686	Dec-15	208,152			Dec-09	
Jan-10	197,467	Jan-16	208,883			Jan-10	
Feb-10	198,382	Feb-16	209,042			Feb-10	
Mar-10	198,776	Mar-16	209,175			Mar-10	
Apr-10	198,142	Apr-16	208,242			Apr-10	
May-10	197,041	May-16	207,067			May-10	
Jun-10	195,513	Jun-16	205,785			Jun-10	
Jul-10	194,951	Jul-16	205,086			Jul-10	
Aug-10	194,483	Aug-16	204,642			Aug-10	
Sep-10	194,773	Sep-16	204,964			Sep-10	
Oct-10	196,027	Oct-16	206,415			Oct-10	
Nov-10	198,376	Nov-16	208,469			Nov-10	
Dec-10	200,007	Dec-16	209,926			Dec-10	
Jan-11	200,705					Jan-11	

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 1247 1301 Residential Heating  
Model: Use per Customer (Dth/Customer/Day)

GOF R-Square= 0.992892 DW= 1.937691 SSE= 0.189765 MSE= 0.003329  
Model:  $Y(t) = 0.388124 + .001301 * X1(t) - .01029 * X2(t) + .010148 * d2 - .04118 * d5 - .04118 * d6 - .10987 * d10 - .18017 * d11 - .14412 * d12 + E(t)$   
Where: X1(t)= BBDA X2(t)= PRCG\_2  
d2, d5, d6, d10, d11, d12 are dummy variables for month Feb, May, Jun, Oct, Nov and Dec respectively  
 $E(t) = -0.2931 * (Y(t) - Y(t-1)) - 0.3754 * (Y(t-1) - Y(t-2)) - 0.23246 * (Y(t-2) - Y(t-3)) - 0.066 * (Y(t-3) - Y(t-4)) - 0.0457 * (Y(t-4) - Y(t-5)) + \epsilon$

Actual Use Per		Forecasted Use Per		Year	Annual Use Per	Economic Data		
date	Dth/MC/Day	date	Dth/MC/Day			Date	BBDA	PRCG_2
Jan-05	0.53	Jan-11	0.52	2005	3.31	Jan-05	1054	15.1744
Feb-05	0.65	Feb-11	0.59	2006	2.89	Feb-05	1133	14.6338
Mar-05	0.51	Mar-11	0.45	2007	3.01	Mar-05	1052	14.4729
Apr-05	0.39	Apr-11	0.34	2008	2.97	Apr-05	691	14.6152
May-05	0.19	May-11	0.17	2009	2.98	May-05	422	14.9542
Jun-05	0.14	Jun-11	0.10	2010	2.81	Jun-05	206	15.7890
Jul-05	0.08	Jul-11	0.07	2011	2.88	Jul-05	24	17.0637
Aug-05	0.07	Aug-11	0.06	2012	2.85	Aug-05	2	18.9265
Sep-05	0.08	Sep-11	0.07	2013	2.79	Sep-05	4	19.7678
Oct-05	0.08	Oct-11	0.07	2014	2.74	Oct-05	119	18.9976
Nov-05	0.20	Nov-11	0.18	2015	2.75	Nov-05	442	18.5893
Dec-05	0.39	Dec-11	0.26			Dec-05	873	17.4612
Jan-06	0.49	Jan-12	0.47			Jan-06	984	18.0502
Feb-06	0.43	Feb-12	0.54			Feb-06	857	17.6910
Mar-06	0.47	Mar-12	0.44			Mar-06	986	17.9387
Apr-06	0.36	Apr-12	0.32			Apr-06	615	17.6393
May-06	0.20	May-12	0.18			May-06	350	17.9495
Jun-06	0.13	Jun-12	0.10			Jun-06	122	18.3485
Jul-06	0.08	Jul-12	0.08			Jul-06	11	19.3953
Aug-06	0.07	Aug-12	0.06			Aug-06	0	20.9680
Sep-06	0.08	Sep-12	0.07			Sep-06	24	21.8612
Oct-06	0.10	Oct-12	0.08			Oct-06	172	21.0794
Nov-06	0.20	Nov-12	0.18			Nov-06	435	20.1484
Dec-06	0.29	Dec-12	0.33			Dec-06	609	18.5463
Jan-07	0.38	Jan-13	0.46			Jan-07	800	16.8928
Feb-07	0.60	Feb-13	0.54			Feb-07	1116	16.5052
Mar-07	0.53	Mar-13	0.44			Mar-07	1031	16.0660
Apr-07	0.37	Apr-13	0.31			Apr-07	741	16.0475
May-07	0.21	May-13	0.17			May-07	346	16.4419
Jun-07	0.11	Jun-13	0.10			Jun-07	104	16.6794
Jul-07	0.07	Jul-13	0.07			Jul-07	13	18.4798
Aug-07	0.06	Aug-13	0.06			Aug-07	4	19.7570
Sep-07	0.08	Sep-13	0.06			Sep-07	18	20.3007
Oct-07	0.08	Oct-13	0.08			Oct-07	83	19.7488
Nov-07	0.17	Nov-13	0.17			Nov-07	393	19.5618
Dec-07	0.35	Dec-13	0.32			Dec-07	883	17.3142
Jan-08	0.50	Jan-14	0.46			Jan-08	1015	16.1249
Feb-08	0.55	Feb-14	0.53			Feb-08	951	15.7469
Mar-08	0.43	Mar-14	0.43			Mar-08	896	15.6487
Apr-08	0.34	Apr-14	0.31			Apr-08	673	15.8107
May-08	0.22	May-14	0.17			May-08	341	16.0537
Jun-08	0.12	Jun-14	0.10			Jun-08	139	16.2845
Jul-08	0.08	Jul-14	0.07			Jul-08	9	17.7040
Aug-08	0.07	Aug-14	0.06			Aug-08	1	19.1100
Sep-08	0.07	Sep-14	0.06			Sep-08	18	20.3414
Oct-08	0.08	Oct-14	0.07			Oct-08	165	20.2282
Nov-08	0.18	Nov-14	0.17			Nov-08	480	20.1513
Dec-08	0.35	Dec-14	0.31			Dec-08	844	18.8686
Jan-09	0.50	Jan-15	0.46			Jan-09	1147	16.7888
Feb-09	0.62	Feb-15	0.54			Feb-09	1164	15.6937
Mar-09	0.44	Mar-15	0.43			Mar-09	951	15.6089
Apr-09	0.35	Apr-15	0.31			Apr-09	710	15.9709

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 1247 1301 Residential Heating  
Model: Use per Customer (Dth/Customer/Day)

GOF R-Square= 0.992892 DW= 1.937691 SSE= 0.189765 MSE= 0.003329  
Model:  $Y(t) = 0.388124 + .001301 * X1(t) - .01029 * X2(t) + .010148 * d2 - .04118 * d5 - .04118 * d6 - .10987 * d10 - .18017 * d11 - .14412 * d12 + E(t)$   
Where:  $X1(t) = BBDA$   $X2(t) = PRCG\_2$   
d2, d5, d6, d10, d11, d12 are dummy variables for month Feb, May, Jun, Oct, Nov and Dec respectively  
 $E(t) = -0.2931 * (Y(t) - Y(t-1)) - 0.3754 * (Y(t-1) - Y(t-2)) - 0.23246 * (Y(t-2) - Y(t-3)) - 0.066 * (Y(t-3) - Y(t-4)) - 0.0457 * (Y(t-4) - Y(t-5)) + \epsilon$

Actual Use Per		Forecasted Use Per		Year	Annual Use Per Dth/MC/Day	Economic Data		
date	Dth/MC/Day	date	Dth/MC/Day			Date	BBDA	PRCG_2
May-09	0.17	May-15	0.17			May-09	329	16.3740
Jun-09	0.10	Jun-15	0.10			Jun-09	147	17.6022
Jul-09	0.08	Jul-15	0.07			Jul-09	32	19.3318
Aug-09	0.07	Aug-15	0.06			Aug-09	2	19.8752
Sep-09	0.07	Sep-15	0.06			Sep-09	27	19.4442
Oct-09	0.10	Oct-15	0.08			Oct-09	218	19.7391
Nov-09	0.19	Nov-15	0.17			Nov-09	433	19.1485
Dec-09	0.30	Dec-15	0.32			Dec-09	680	17.0744
Jan-10	0.56	Jan-16	0.49			Jan-10	1168	16.2706
Feb-10	0.56	Feb-16	0.56			Feb-10	1057	15.2926
Mar-10	0.41	Mar-16	0.46			Mar-10	801	15.4095
Apr-10	0.25	Apr-16	0.29			Apr-10	471	15.6998
May-10	0.14	May-16	0.16			May-10	261	16.5857
Jun-10	0.09	Jun-16	0.09			Jun-10	67	17.5776
Jul-10	0.07	Jul-16	0.07			Jul-10	7	19.3859
Aug-10	0.06	Aug-16	0.06			Aug-10	1	20.5737
Sep-10	0.07	Sep-16	0.06			Sep-10	15	21.3825
Oct-10	0.08	Oct-16	0.07			Oct-10	128	21.0087
Nov-10	0.17	Nov-16	0.16			Nov-10	408	22.1820
Dec-10	0.36	Dec-16	0.30			Dec-10	825	23.3355
Jan-11	0.52					Jan-11		

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2107  
Model: Customer Counts

GOF R-Square= 0.682827  
Model:  $5.00457 * x + 17391$   
Where: X= time

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data time
Jan-05	18,025	Jan-11	18,810	2005	18,130	
Feb-05	18,049	Feb-11	18,805	2006	18,213	
Mar-05	18,027	Mar-11	18,742	2007	18,389	
Apr-05	17,841	Apr-11	18,543	2008	18,411	
May-05	17,668	May-11	18,338	2009	18,581	
Jun-05	17,521	Jun-11	18,166	2010	18,706	
Jul-05	17,353	Jul-11	18,070	2011	18,565	
Aug-05	17,319	Aug-11	17,971	2012	18,656	
Sep-05	17,428	Sep-11	17,946	2013	18,636	
Oct-05	17,598	Oct-11	18,061	2014	18,594	
Nov-05	17,840	Nov-11	18,342	2015	18,551	
Dec-05	18,130	Dec-11	18,565			
Jan-06	18,149	Jan-12	18,719			
Feb-06	18,213	Feb-12	18,737			
Mar-06	18,170	Mar-12	18,588			
Apr-06	18,051	Apr-12	18,464			
May-06	17,878	May-12	18,271			
Jun-06	17,705	Jun-12	18,084			
Jul-06	17,564	Jul-12	17,953			
Aug-06	17,504	Aug-12	17,884			
Sep-06	17,497	Sep-12	17,990			
Oct-06	17,648	Oct-12	18,204			
Nov-06	17,912	Nov-12	18,466			
Dec-06	18,213	Dec-12	18,656			
Jan-07	18,368	Jan-13	18,719			
Feb-07	18,382	Feb-13	18,731			
Mar-07	18,454	Mar-13	18,585			
Apr-07	18,276	Apr-13	18,454			
May-07	18,137	May-13	18,264			
Jun-07	17,954	Jun-13	18,077			
Jul-07	17,771	Jul-13	17,952			
Aug-07	17,683	Aug-13	17,884			
Sep-07	17,683	Sep-13	17,992			
Oct-07	17,735	Oct-13	18,205			
Nov-07	18,185	Nov-13	18,450			
Dec-07	18,389	Dec-13	18,636			
Jan-08	18,467	Jan-14	18,709			
Feb-08	18,461	Feb-14	18,717			
Mar-08	18,441	Mar-14	18,568			
Apr-08	18,295	Apr-14	18,425			
May-08	18,154	May-14	18,232			
Jun-08	17,948	Jun-14	18,044			
Jul-08	17,799	Jul-14	17,919			
Aug-08	17,712	Aug-14	17,850			
Sep-08	17,665	Sep-14	17,970			
Oct-08	17,876	Oct-14	18,192			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2107  
Model: Customer Counts

GOF R-Square= 0.682827  
Model:  $5.00457 * x + 17391$   
Where: X= time

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Economic Year End Data Customers	time
Nov-08	18,182	Nov-14	18,407			
Dec-08	18,411	Dec-14	18,594			
Jan-09	18,529	Jan-15	18,678			
Feb-09	18,523	Feb-15	18,684			
Mar-09	18,355	Mar-15	18,551			
Apr-09	18,202	Apr-15	18,361			
May-09	18,059	May-15	18,188			
Jun-09	17,878	Jun-15	18,004			
Jul-09	17,772	Jul-15	17,876			
Aug-09	17,776	Aug-15	17,811			
Sep-09	17,831	Sep-15	17,953			
Oct-09	18,092	Oct-15	18,159			
Nov-09	18,282	Nov-15	18,364			
Dec-09	18,581	Dec-15	18,551			
Jan-10	18,651	Jan-16	18,643			
Feb-10	18,683	Feb-16	18,657			
Mar-10	18,574	Mar-16	18,523			
Apr-10	18,378	Apr-16	18,329			
May-10	18,182	May-16	18,155			
Jun-10	17,984	Jun-16	17,976			
Jul-10	17,839	Jul-16	17,850			
Aug-10	17,828	Aug-16	17,874			
Sep-10	17,833	Sep-16	17,945			
Oct-10	18,051	Oct-16	18,135			
Nov-10	18,392	Nov-16	18,327			
Dec-10	18,706	Dec-16	18,510			
Jan-11	18,809					



**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2017  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.2132 SSE= 2.66E-06  
Par (X) = P1 \* X + P2 X= FRTFSQ  
Coefficients (with 95% confidence bounds):  
p1 = -0.0006257 (-0.001826 0.000575)  
p2 = 0.01911 (-0.008568 0.04679)

**Slope Model**

GOF: R-Square= 0.247 SSE= 1.65E-08  
Par (X)=P1\*X+P2 X= NG  
Coefficients (with 95% confidence bounds):  
p1 = 3.72E-05 (-2.766e-06 0.000102)  
p2 = 0.0002727 (-0.000801 0.001347)

alpha: Jan 0.0703 Feb 0.2285 Mar 0.2477 Apr 0.3344 May 0.0928 Jun 0.1761 Jul 0.0555 Aug -0.0204 Sep -0.3603 Oct -0.606 Nov -0.4226 Dec -0.2241

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data FRTFSQ NG		date	For Monthly Allocation HDD	
Jan-05	0.74	Jan-11	0.83	2005	4.54	23.44385	16.954	Jan-05	37.32	
Feb-05	0.98	Feb-11	0.94	2006	3.94	24.33336	16.544	Feb-05	33.43	
Mar-05	0.75	Mar-11	0.70	2007	4.19	24.57284	16.224	Mar-05	29.94	
Apr-05	0.54	Apr-11	0.50	2008	4.01	23.44826	17.002	Apr-05	14.93	
May-05	0.22	May-11	0.22	2009	4.21	22.11386	16.43	May-05	11.35	
Jun-05	0.16	Jun-11	0.13	2010	4.07	22.95631	17.33875	Jun-05	1.40	
Jul-05	0.09	Jul-11	0.10	2011	4.23	24.09252	16.20737	Jul-05	0.19	
Aug-05	0.08	Aug-11	0.08	2012	4.38	24.27346	16.14208	Aug-05	0.00	
Sep-05	0.10	Sep-11	0.09	2013	4.40	24.31277	16.86811	Sep-05	1.30	
Oct-05	0.11	Oct-11	0.09	2014	4.51	24.43596	17.47011	Oct-05	10.35	
Nov-05	0.23	Nov-11	0.22	2015	4.51	24.72369	17.8157	Nov-05	18.90	
Dec-05	0.53	Dec-11	0.35					Dec-05	32.39	
Jan-06	0.72	Jan-12	0.87					Jan-06	27.61	
Feb-06	0.64	Feb-12	0.80					Feb-06	33.14	
Mar-06	0.70	Mar-12	0.74					Mar-06	25.71	
Apr-06	0.49	Apr-12	0.48					Apr-06	14.23	
May-06	0.23	May-12	0.25					May-06	7.00	
Jun-06	0.15	Jun-12	0.13					Jun-06	1.27	
Jul-06	0.10	Jul-12	0.13					Jul-06	0.00	
Aug-06	0.08	Aug-12	0.09					Aug-06	0.16	
Sep-06	0.09	Sep-12	0.07					Sep-06	2.57	
Oct-06	0.12	Oct-12	0.11					Oct-06	11.03	
Nov-06	0.21	Nov-12	0.24					Nov-06	15.57	
Dec-06	0.39	Dec-12	0.48					Dec-06	24.13	
Jan-07	0.50	Jan-13	0.89					Jan-07	30.58	
Feb-07	0.92	Feb-13	0.81					Feb-07	37.68	
Mar-07	0.80	Mar-13	0.75					Mar-07	26.61	
Apr-07	0.52	Apr-13	0.48					Apr-07	18.03	
May-07	0.26	May-13	0.24					May-07	5.74	
Jun-07	0.12	Jun-13	0.13					Jun-07	1.10	
Jul-07	0.08	Jul-13	0.11					Jul-07	0.00	
Aug-07	0.08	Aug-13	0.08					Aug-07	0.26	
Sep-07	0.09	Sep-13	0.08					Sep-07	1.27	
Oct-07	0.08	Oct-13	0.11					Oct-07	6.55	
Nov-07	0.24	Nov-13	0.23					Nov-07	22.07	
Dec-07	0.49	Dec-13	0.48					Dec-07	32.03	
Jan-08	0.77	Jan-14	0.91					Jan-08	31.35	
Feb-08	0.74	Feb-14	0.84					Feb-08	31.86	
Mar-08	0.64	Mar-14	0.76					Mar-08	25.23	
Apr-08	0.44	Apr-14	0.49					Apr-08	13.47	
May-08	0.24	May-14	0.25					May-08	7.32	
Jun-08	0.14	Jun-14	0.14					Jun-08	0.63	
Jul-08	0.13	Jul-14	0.12					Jul-08	0.00	
Aug-08	0.11	Aug-14	0.09					Aug-08	0.06	
Sep-08	0.02	Sep-14	0.08					Sep-08	2.40	

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2017  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.2132 SSE= 2.66E-06  
Par (X) = P1 \* X + P2 X= FRTFSQ  
Coefficients (with 95% confidence bounds):  
p1 = -0.0006257 (-0.001826 0.000575)  
p2 = 0.01911 (-0.008568 0.04679)

**Slope Model**

GOF: R-Square= 0.247 SSE= 1.65E-08  
Par (X)=P1\*X+P2 X= NG  
Coefficients (with 95% confidence bounds):  
p1 = 3.72E-05 (-2.766e-06 0.000102)  
p2 = 0.0002727 (-0.000801 0.001347)

alpha: Jan 0.0703 Feb 0.2285 Mar 0.2477 Apr 0.3344 May 0.0928 Jun 0.1761 Jul 0.0555 Aug -0.0204 Sep -0.3603 Oct -0.606 Nov -0.4226 Dec -0.2241

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data FRTFSQ NG	date	For Monthly Allocation HDD
Oct-08	0.09	Oct-14	0.11				Oct-08	12.61
Nov-08	0.24	Nov-14	0.24				Nov-08	22.17
Dec-08	0.44	Dec-14	0.49				Dec-08	29.48
Jan-09	0.82	Jan-15	0.90				Jan-09	40.81
Feb-09	0.86	Feb-15	0.84				Feb-09	32.11
Mar-09	0.71	Mar-15	0.76				Mar-09	27.32
Apr-09	0.49	Apr-15	0.49				Apr-09	15.45
May-09	0.24	May-15	0.25				May-09	6.71
Jun-09	0.11	Jun-15	0.14				Jun-09	2.10
Jul-09	0.09	Jul-15	0.12				Jul-09	0.19
Aug-09	0.13	Aug-15	0.09				Aug-09	0.10
Sep-09	0.03	Sep-15	0.08				Sep-09	3.03
Oct-09	0.11	Oct-15	0.11				Oct-09	12.77
Nov-09	0.23	Nov-15	0.24				Nov-09	15.80
Dec-09	0.40	Dec-15	0.49				Dec-09	31.84
Jan-10	1.07	Jan-16	0.91				Jan-10	35.68
Feb-10	0.69	Feb-16	0.82				Feb-10	31.79
Mar-10	0.62	Mar-16	0.77				Mar-10	19.61
Apr-10	0.33	Apr-16	0.49				Apr-10	11.13
May-10	0.18	May-16	0.25				May-10	3.90
Jun-10	0.11	Jun-16	0.13				Jun-10	0.53
Jul-10	0.09	Jul-16	0.12				Jul-10	0.00
Aug-10	0.08	Aug-16	0.09				Aug-10	0.06
Sep-10	0.09	Sep-16	0.08				Sep-10	1.03
Oct-10	0.12	Oct-16	0.11				Oct-10	9.45
Nov-10	0.21	Nov-16	0.24				Nov-10	20.07
Dec-10	0.50	Dec-16	0.48				Dec-10	33.65
Jan-11	0.84						Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2237 2231  
Model: Customer Counts

GOF R-Square= 0.980351  
Model:  $3635.5 - 804.296 / (1 + \exp(-0.140966 * (t-78.0482)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	3,865	Jan-11	2,959	2005	3,763	0
Feb-05	3,880	Feb-11	2,957	2006	3,634	
Mar-05	3,883	Mar-11	2,941	2007	3,605	
Apr-05	3,866	Apr-11	2,916	2008	3,538	
May-05	3,837	May-11	2,899	2009	3,215	
Jun-05	3,836	Jun-11	2,884	2010	2,964	
Jul-05	3,822	Jul-11	2,876	2011	2,958	
Aug-05	3,720	Aug-11	2,890	2012	2,837	
Sep-05	3,644	Sep-11	2,896	2013	2,832	
Oct-05	3,679	Oct-11	2,928	2014	2,831	
Nov-05	3,721	Nov-11	2,939	2015	2,831	
Dec-05	3,763	Dec-11	2,958			
Jan-06	3,774	Jan-12	2,855			
Feb-06	3,790	Feb-12	2,851			
Mar-06	3,765	Mar-12	2,848			
Apr-06	3,684	Apr-12	2,846			
May-06	3,654	May-12	2,844			
Jun-06	3,634	Jun-12	2,842			
Jul-06	3,617	Jul-12	2,840			
Aug-06	3,558	Aug-12	2,839			
Sep-06	3,583	Sep-12	2,838			
Oct-06	3,605	Oct-12	2,838			
Nov-06	3,634	Nov-12	2,838			
Dec-06	3,634	Dec-12	2,837			
Jan-07	3,644	Jan-13	2,836			
Feb-07	3,641	Feb-13	2,835			
Mar-07	3,638	Mar-13	2,834			
Apr-07	3,617	Apr-13	2,833			
May-07	3,584	May-13	2,832			
Jun-07	3,596	Jun-13	2,832			
Jul-07	3,587	Jul-13	2,831			
Aug-07	3,593	Aug-13	2,831			
Sep-07	3,607	Sep-13	2,832			
Oct-07	3,608	Oct-13	2,832			
Nov-07	3,603	Nov-13	2,833			
Dec-07	3,605	Dec-13	2,832			
Jan-08	3,604	Jan-14	2,832			
Feb-08	3,609	Feb-14	2,831			
Mar-08	3,606	Mar-14	2,831			
Apr-08	3,651	Apr-14	2,830			
May-08	3,639	May-14	2,830			
Jun-08	3,626	Jun-14	2,829			
Jul-08	3,609	Jul-14	2,829			
Aug-08	3,486	Aug-14	2,829			
Sep-08	3,483	Sep-14	2,830			
Oct-08	3,505	Oct-14	2,831			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2237 2231  
Model: Customer Counts

GOF R-Square= 0.980351  
Model:  $3635.5 - 804.296 / (1 + \exp(-0.140966 * (t-78.0482)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	3,518	Nov-14	2,831			0
Dec-08	3,538	Dec-14	2,831			
Jan-09	3,527	Jan-15	2,831			
Feb-09	3,534	Feb-15	2,830			
Mar-09	3,499	Mar-15	2,830			
Apr-09	3,500	Apr-15	2,829			
May-09	3,463	May-15	2,829			
Jun-09	3,415	Jun-15	2,828			
Jul-09	3,381	Jul-15	2,828			
Aug-09	3,212	Aug-15	2,828			
Sep-09	3,228	Sep-15	2,829			
Oct-09	3,251	Oct-15	2,830			
Nov-09	3,211	Nov-15	2,831			
Dec-09	3,215	Dec-15	2,831			
Jan-10	3,224	Jan-16	2,830			
Feb-10	3,210	Feb-16	2,830			
Mar-10	3,204	Mar-16	2,829			
Apr-10	3,148	Apr-16	2,828			
May-10	3,135	May-16	2,828			
Jun-10	3,106	Jun-16	2,828			
Jul-10	3,082	Jul-16	2,828			
Aug-10	2,977	Aug-16	2,828			
Sep-10	2,983	Sep-16	2,829			
Oct-10	2,982	Oct-16	2,830			
Nov-10	2,967	Nov-16	2,830			
Dec-10	2,964	Dec-16	2,831			
Jan-11	2,956					

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2237 2231  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.2632 SSE= 8.94E-05  
Par (X) = P1 \* X + P2 X= FRTFSQ  
Coefficients (with 95% confidence bounds):  
p1 = -0.004164 (-0.01112, 0.002796)  
p2 = 0.1475 (-0.01295, 0.308)

**Slope Model**

GOF: R-Square= 0.4299 SSE= 4.00E-07  
Par (X) = P1 \* X + P2 X= NG  
Coefficients (with 95% confidence bounds):  
p1 = 0.0002772 (-4.17e-005, 0.0005961)  
p2 = 0.001816 (-0.00347, 0.007103)

alpha: Jan 0.005 Feb 0.2209 Mar 0.2702 Apr 0.224 May 0.1599 Jun 0.2763 Jul 0.065 Aug -0.0126 Sep -0.1617 Oct -0.4175 Nov -0.2301 Dec -0.2499

date	Actual Use		Forecasted		Year	Annual			For Monthly Allocation	
	Per	date	Use Per	Dth/MC/Day		Use Per	Economic Data	NG	date	HDD
Jan-05	5.69	Jan-11	6.00		2005	37.22	23.44385	16.954	Jan-05	37.32
Feb-05	6.71	Feb-11	6.87		2006	34.56	24.33336	16.544	Feb-05	33.43
Mar-05	5.54	Mar-11	5.42		2007	35.65	24.57284	16.224	Mar-05	29.94
Apr-05	4.13	Apr-11	4.05		2008	34.46	23.44826	17.002	Apr-05	14.93
May-05	2.19	May-11	2.25		2009	36.21	22.11386	16.43	May-05	11.35
Jun-05	1.71	Jun-11	1.39		2010	34.38	22.95631	17.33875	Jun-05	1.40
Jul-05	1.12	Jul-11	1.39		2011	35.58	24.09252	16.20737	Jul-05	0.19
Aug-05	0.98	Aug-11	0.62		2012	36.37	24.27346	16.14208	Aug-05	0.00
Sep-05	1.18	Sep-11	1.10		2013	37.14	24.31277	16.86811	Sep-05	1.30
Oct-05	1.21	Oct-11	1.08		2014	36.29	24.43596	17.47011	Oct-05	10.35
Nov-05	2.38	Nov-11	2.29		2015	36.42	24.72369	17.8157	Nov-05	18.90
Dec-05	4.37	Dec-11	3.13						Dec-05	32.39
Jan-06	5.46	Jan-12	5.99						Jan-06	27.61
Feb-06	5.09	Feb-12	6.69						Feb-06	33.14
Mar-06	5.44	Mar-12	5.86						Mar-06	25.71
Apr-06	4.08	Apr-12	3.66						Apr-06	14.23
May-06	2.45	May-12	2.32						May-06	7.00
Jun-06	1.63	Jun-12	1.52						Jun-06	1.27
Jul-06	1.09	Jul-12	1.24						Jul-06	0.00
Aug-06	0.99	Aug-12	0.87						Aug-06	0.16
Sep-06	1.15	Sep-12	0.99						Sep-06	2.57
Oct-06	1.36	Oct-12	1.33						Oct-06	11.03
Nov-06	2.39	Nov-12	2.63						Nov-06	15.57
Dec-06	3.43	Dec-12	3.27						Dec-06	24.13
Jan-07	4.30	Jan-13	6.13						Jan-07	30.58
Feb-07	6.90	Feb-13	6.93						Feb-07	37.68
Mar-07	6.02	Mar-13	5.78						Mar-07	26.61
Apr-07	4.22	Apr-13	3.99						Apr-07	18.03
May-07	2.53	May-13	2.40						May-07	5.74
Jun-07	1.51	Jun-13	1.55						Jun-07	1.10
Jul-07	0.99	Jul-13	1.18						Jul-07	0.00
Aug-07	0.95	Aug-13	0.81						Aug-07	0.26
Sep-07	1.08	Sep-13	1.02						Sep-07	1.27
Oct-07	1.15	Oct-13	1.26						Oct-07	6.55
Nov-07	2.14	Nov-13	2.54						Nov-07	22.07
Dec-07	3.85	Dec-13	3.54						Dec-07	32.03
Jan-08	5.58	Jan-14	5.98						Jan-08	31.35
Feb-08	6.22	Feb-14	6.81						Feb-08	31.86
Mar-08	7.49	Mar-14	5.69						Mar-08	25.23
Apr-08	1.78	Apr-14	3.88						Apr-08	13.47
May-08	1.78	May-14	2.34						May-08	7.32
Jun-08	1.39	Jun-14	1.49						Jun-08	0.63
Jul-08	1.15	Jul-14	1.18						Jul-08	0.00
Aug-08	1.13	Aug-14	0.76						Aug-08	0.06
Sep-08	0.86	Sep-14	0.99						Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2237 2231  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.2632 SSE= 8.94E-05  
Par (X) = P1 \* X + P2 X= FRTFSQ  
Coefficients (with 95% confidence bounds):  
p1 = -0.004164 (-0.01112, 0.002796)  
p2 = 0.1475 (-0.01295, 0.308)

**Slope Model**

GOF: R-Square= 0.4299 SSE= 4.00E-07  
Par (X) = P1 \* X + P2 X= NG  
Coefficients (with 95% confidence bounds):  
p1 = 0.0002772 (-4.17e-005, 0.0005961)  
p2 = 0.001816 (-0.00347, 0.007103)

alpha: Jan 0.005 Feb 0.2209 Mar 0.2702 Apr 0.224 May 0.1599 Jun 0.2763 Jul 0.065 Aug -0.0126 Sep -0.1617 Oct -0.4175 Nov -0.2301 Dec -0.2499

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data FRTFSQ NG	date	For Monthly Allocation HDD
Oct-08	1.92	Oct-14	1.21				Oct-08	12.61
Nov-08	2.94	Nov-14	2.44				Nov-08	22.17
Dec-08	2.21	Dec-14	3.51				Dec-08	29.48
Jan-09	6.13	Jan-15	6.00				Jan-09	40.81
Feb-09	6.65	Feb-15	6.84				Feb-09	32.11
Mar-09	4.89	Mar-15	5.74				Mar-09	27.32
Apr-09	3.77	Apr-15	3.82				Apr-09	15.45
May-09	2.19	May-15	2.34				May-09	6.71
Jun-09	1.63	Jun-15	1.51				Jun-09	2.10
Jul-09	1.19	Jul-15	1.19				Jul-09	0.19
Aug-09	1.25	Aug-15	0.81				Aug-09	0.10
Sep-09	0.97	Sep-15	0.99				Sep-09	3.03
Oct-09	1.56	Oct-15	1.26				Oct-09	12.77
Nov-09	3.26	Nov-15	2.52				Nov-09	15.80
Dec-09	2.71	Dec-15	3.41				Dec-09	31.84
Jan-10	6.33	Jan-16	7.06				Jan-10	35.68
Feb-10	6.42	Feb-16	7.77				Feb-10	31.79
Mar-10	4.66	Mar-16	6.75				Mar-10	19.61
Apr-10	3.13	Apr-16	3.14				Apr-10	11.13
May-10	1.99	May-16	1.92				May-10	3.90
Jun-10	1.30	Jun-16	1.24				Jun-10	0.53
Jul-10	1.09	Jul-16	0.99				Jul-10	0.00
Aug-10	0.91	Aug-16	0.66				Aug-10	0.06
Sep-10	1.07	Sep-16	0.82				Sep-10	1.03
Oct-10	1.23	Oct-16	1.03				Oct-10	9.45
Nov-10	2.18	Nov-16	2.07				Nov-10	20.07
Dec-10	4.07	Dec-16	2.80				Dec-10	33.65
Jan-11	6.04						Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 22EN  
Model: Customer Counts

GOF R-Square= 0.935153  
Model:  $388 + 41 / (1 + \exp(-0.422764 * (t - 72.5)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	414	Jan-11	429	2005	412	0
Feb-05	409	Feb-11	430	2006	382	
Mar-05	409	Mar-11	430	2007	390	
Apr-05	412	Apr-11	430	2008	404	
May-05	413	May-11	429	2009	427	
Jun-05	412	Jun-11	432	2010	429	
Jul-05	412	Jul-11	432	2011	430	
Aug-05	413	Aug-11	432	2012	430	
Sep-05	423	Sep-11	441	2013	431	
Oct-05	423	Oct-11	433	2014	432	
Nov-05	410	Nov-11	432	2015	434	
Dec-05	412	Dec-11	430			
Jan-06	406	Jan-12	429			
Feb-06	403	Feb-12	428			
Mar-06	409	Mar-12	428			
Apr-06	409	Apr-12	428			
May-06	409	May-12	428			
Jun-06	401	Jun-12	429			
Jul-06	398	Jul-12	428			
Aug-06	397	Aug-12	428			
Sep-06	394	Sep-12	428			
Oct-06	394	Oct-12	429			
Nov-06	391	Nov-12	429			
Dec-06	382	Dec-12	430			
Jan-07	383	Jan-13	430			
Feb-07	383	Feb-13	430			
Mar-07	386	Mar-13	430			
Apr-07	386	Apr-13	430			
May-07	387	May-13	430			
Jun-07	392	Jun-13	430			
Jul-07	392	Jul-13	430			
Aug-07	394	Aug-13	430			
Sep-07	393	Sep-13	430			
Oct-07	393	Oct-13	431			
Nov-07	391	Nov-13	431			
Dec-07	390	Dec-13	431			
Jan-08	387	Jan-14	431			
Feb-08	389	Feb-14	431			
Mar-08	384	Mar-14	431			
Apr-08	382	Apr-14	431			
May-08	382	May-14	431			
Jun-08	383	Jun-14	432			
Jul-08	383	Jul-14	432			
Aug-08	382	Aug-14	432			
Sep-08	390	Sep-14	432			
Oct-08	405	Oct-14	432			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 22EN  
Model: Customer Counts

GOF R-Square= 0.935153  
Model:  $388 + 41 / (1 + \exp(-0.422764 * (t - 72.5)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Economic Year End Customers	Data
Nov-08	403	Nov-14	432			0
Dec-08	404	Dec-14	432			
Jan-09	392	Jan-15	433			
Feb-09	391	Feb-15	433			
Mar-09	390	Mar-15	434			
Apr-09	392	Apr-15	432			
May-09	399	May-15	433			
Jun-09	407	Jun-15	433			
Jul-09	413	Jul-15	433			
Aug-09	412	Aug-15	433			
Sep-09	424	Sep-15	434			
Oct-09	426	Oct-15	434			
Nov-09	430	Nov-15	434			
Dec-09	427	Dec-15	434			
Jan-10	425	Jan-16	434			
Feb-10	426	Feb-16	435			
Mar-10	427	Mar-16	435			
Apr-10	428	Apr-16	434			
May-10	430	May-16	434			
Jun-10	430	Jun-16	435			
Jul-10	431	Jul-16	435			
Aug-10	432	Aug-16	436			
Sep-10	420	Sep-16	437			
Oct-10	418	Oct-16	436			
Nov-10	422	Nov-16	436			
Dec-10	429	Dec-16	435			
Jan-11	428					



**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 22EN  
Model: Use per Customer (Dth/Customer/Day)

Base Model

GOF: R-Square= 0.5858 SSE= 7.49E-02  
Par (X) = P1 \* X + P2 X= FHSTMFQ  
Coefficients (with 95% confidence bounds):  
p1 = -0.0007958 (-0.001464 -0.0001274)  
p2 = 2.474 (2.192, 2.756)

Slope Model

GOF: R-Square= 0.3538 SSE= 9.88E-04  
Par (X) = P1 \* X + P2 X= FRTFSQ  
Coefficients (with 95% confidence bounds):  
p1 = 0.01714 (-0.005999 0.04029)  
p2 = -0.2181 (-0.7516, 0.3154)

alpha: Jan 0.0167 Feb 0.1273 Mar -0.1007 Apr 0.0498 May -0.1942 Jun 0.0256 Jul -0.0117 Aug -0.0094 Sep 0.0361 Oct -0.173 Nov -0.1388 Dec 0.03

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data FHSTMFQ	FRTFSQ	date	For Monthly Allocation HDD
Jan-05	8.81	Jan-11	8.75	2005	57.52	773.6476	23.44385	Jan-05	37.32
Feb-05	8.14	Feb-11	9.44	2006	53.25	815.3507	24.33336	Feb-05	33.43
Mar-05	7.52	Mar-11	6.46	2007	57.00	576.9624	24.57284	Mar-05	29.94
Apr-05	4.48	Apr-11	5.29	2008	55.03	207.9252	23.44826	Apr-05	14.93
May-05	3.80	May-11	2.63	2009	51.86	196.7776	22.11386	May-05	11.35
Jun-05	2.31	Jun-11	2.64	2010	56.86	150.953	22.95631	Jun-05	1.40
Jul-05	2.02	Jul-11	1.97	2011	55.92	467.1277	24.09252	Jul-05	0.19
Aug-05	1.88	Aug-11	2.24	2012	64.81	785.2471	24.27346	Aug-05	0.00
Sep-05	2.20	Sep-11	2.42	2013	60.87	869.2539	24.31277	Sep-05	1.30
Oct-05	3.64	Oct-11	3.24	2014	55.97	859.3866	24.43596	Oct-05	10.35
Nov-05	4.66	Nov-11	5.44	2015	54.51	900.3557	24.72369	Nov-05	18.90
Dec-05	8.06	Dec-11	5.39					Dec-05	32.39
Jan-06	7.18	Jan-12	10.10					Jan-06	27.61
Feb-06	8.25	Feb-12	9.63					Feb-06	33.14
Mar-06	6.83	Mar-12	6.10					Mar-06	25.71
Apr-06	4.18	Apr-12	5.61					Apr-06	14.23
May-06	3.25	May-12	3.74					May-06	7.00
Jun-06	2.47	Jun-12	3.28					Jun-06	1.27
Jul-06	1.93	Jul-12	2.23					Jul-06	0.00
Aug-06	1.68	Aug-12	2.32					Aug-06	0.16
Sep-06	2.63	Sep-12	2.99					Sep-06	2.57
Oct-06	2.37	Oct-12	4.34					Oct-06	11.03
Nov-06	5.50	Nov-12	6.27					Nov-06	15.57
Dec-06	6.98	Dec-12	8.20					Dec-06	24.13
Jan-07	6.69	Jan-13	9.40					Jan-07	30.58
Feb-07	10.44	Feb-13	9.37					Feb-07	37.68
Mar-07	8.00	Mar-13	6.47					Mar-07	26.61
Apr-07	5.46	Apr-13	5.24					Apr-07	18.03
May-07	1.94	May-13	3.57					May-07	5.74
Jun-07	2.10	Jun-13	3.13					Jun-07	1.10
Jul-07	1.75	Jul-13	1.95					Jul-07	0.00
Aug-07	1.81	Aug-13	2.05					Aug-07	0.26
Sep-07	2.05	Sep-13	2.79					Sep-07	1.27
Oct-07	2.41	Oct-13	3.81					Oct-07	6.55
Nov-07	5.93	Nov-13	5.72					Nov-07	22.07
Dec-07	8.39	Dec-13	7.38					Dec-07	32.03
Jan-08	7.38	Jan-14	8.50					Jan-08	31.35
Feb-08	11.69	Feb-14	8.75					Feb-08	31.86
Mar-08	4.74	Mar-14	5.86					Mar-08	25.23
Apr-08	7.34	Apr-14	4.99					Apr-08	13.47
May-08	0.98	May-14	3.05					May-08	7.32
Jun-08	2.17	Jun-14	2.81					Jun-08	0.63
Jul-08	2.32	Jul-14	1.83					Jul-08	0.00
Aug-08	2.41	Aug-14	1.88					Aug-08	0.06
Sep-08	2.68	Sep-14	2.58					Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 22EN  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.5858 SSE= 7.49E-02  
Par (X) = P1 \* X + P2 X= FHSTMFQ  
Coefficients (with 95% confidence bounds):  
p1 = -0.0007958 (-0.001464 -0.0001274)  
p2 = 2.474 (2.192, 2.756)

**Slope Model**

GOF: R-Square= 0.3538 SSE= 9.88E-04  
Par (X) = P1 \* X + P2 X= FRTFSQ  
Coefficients (with 95% confidence bounds):  
p1 = 0.01714 (-0.005999 0.04029)  
p2 = -0.2181 (-0.7516, 0.3154)

alpha: Jan 0.0167 Feb 0.1273 Mar -0.1007 Apr 0.0498 May -0.1942 Jun 0.0256 Jul -0.0117 Aug -0.0094 Sep 0.0361 Oct -0.173 Nov -0.1388 Dec 0.03

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data FHSTMFQ FRTFSQ	date	For Monthly Allocation HDD
Oct-08	2.44	Oct-14	3.55				Oct-08	12.61
Nov-08	3.19	Nov-14	5.57				Nov-08	22.17
Dec-08	7.68	Dec-14	6.61				Dec-08	29.48
Jan-09	9.07	Jan-15	8.39				Jan-09	40.81
Feb-09	7.51	Feb-15	8.42				Feb-09	32.11
Mar-09	2.90	Mar-15	5.52				Mar-09	27.32
Apr-09	4.45	Apr-15	4.76				Apr-09	15.45
May-09	2.63	May-15	3.10				May-09	6.71
Jun-09	2.63	Jun-15	2.77				Jun-09	2.10
Jul-09	2.24	Jul-15	1.80				Jul-09	0.19
Aug-09	2.53	Aug-15	1.87				Aug-09	0.10
Sep-09	2.53	Sep-15	2.50				Sep-09	3.03
Oct-09	4.09	Oct-15	3.50				Oct-09	12.77
Nov-09	4.30	Nov-15	5.26				Nov-09	15.80
Dec-09	6.98	Dec-15	6.64				Dec-09	31.84
Jan-10	9.92	Jan-16	10.59				Jan-10	35.68
Feb-10	8.54	Feb-16	10.23				Feb-10	31.79
Mar-10	5.55	Mar-16	6.97				Mar-10	19.61
Apr-10	3.88	Apr-16	3.89				Apr-10	11.13
May-10	3.10	May-16	2.54				May-10	3.90
Jun-10	2.33	Jun-16	2.26				Jun-10	0.53
Jul-10	2.05	Jul-16	1.47				Jul-10	0.00
Aug-10	2.22	Aug-16	1.52				Aug-10	0.06
Sep-10	2.35	Sep-16	2.04				Sep-10	1.03
Oct-10	3.45	Oct-16	2.86				Oct-10	9.45
Nov-10	4.88	Nov-16	4.30				Nov-10	20.07
Dec-10	8.60	Dec-16	5.44				Dec-10	33.65
Jan-11	8.74						Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2221  
Model: Customer Counts

GOF R-Square= 0.989056  
Model:  $381.278 + 647.492 / (1 + \exp(-0.143158 * (t - 79.5598)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	298	Jan-11	943	2005	265	0
Feb-05	301	Feb-11	959	2006	390	
Mar-05	299	Mar-11	966	2007	427	
Apr-05	303	Apr-11	979	2008	441	
May-05	301	May-11	981	2009	704	
Jun-05	301	Jun-11	989	2010	924	
Jul-05	301	Jul-11	992	2011	1,051	
Aug-05	298	Aug-11	1,004	2012	1,026	
Sep-05	294	Sep-11	1,008	2013	1,033	
Oct-05	280	Oct-11	1,014	2014	1,037	
Nov-05	274	Nov-11	1,032	2015	1,040	
Dec-05	265	Dec-11	1,051			
Jan-06	253	Jan-12	1,006			
Feb-06	264	Feb-12	1,008			
Mar-06	280	Mar-12	1,010			
Apr-06	297	Apr-12	1,013			
May-06	343	May-12	1,015			
Jun-06	355	Jun-12	1,017			
Jul-06	364	Jul-12	1,018			
Aug-06	357	Aug-12	1,019			
Sep-06	358	Sep-12	1,020			
Oct-06	352	Oct-12	1,022			
Nov-06	362	Nov-12	1,024			
Dec-06	390	Dec-12	1,026			
Jan-07	391	Jan-13	1,027			
Feb-07	396	Feb-13	1,027			
Mar-07	397	Mar-13	1,027			
Apr-07	400	Apr-13	1,028			
May-07	400	May-13	1,029			
Jun-07	400	Jun-13	1,029			
Jul-07	396	Jul-13	1,030			
Aug-07	391	Aug-13	1,030			
Sep-07	387	Sep-13	1,030			
Oct-07	393	Oct-13	1,032			
Nov-07	415	Nov-13	1,032			
Dec-07	427	Dec-13	1,033			
Jan-08	450	Jan-14	1,034			
Feb-08	442	Feb-14	1,034			
Mar-08	445	Mar-14	1,034			
Apr-08	395	Apr-14	1,034			
May-08	394	May-14	1,034			
Jun-08	394	Jun-14	1,035			
Jul-08	399	Jul-14	1,035			
Aug-08	414	Aug-14	1,035			
Sep-08	404	Sep-14	1,036			
Oct-08	399	Oct-14	1,037			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2221  
Model: Customer Counts

GOF R-Square= 0.989056  
Model:  $381.278 + 647.492 / (1 + \exp(-0.143158 * (t - 79.5598)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	390	Nov-14	1,037			0
Dec-08	441	Dec-14	1,037			
Jan-09	472	Jan-15	1,038			
Feb-09	482	Feb-15	1,038			
Mar-09	491	Mar-15	1,040			
Apr-09	504	Apr-15	1,037			
May-09	534	May-15	1,038			
Jun-09	561	Jun-15	1,038			
Jul-09	581	Jul-15	1,039			
Aug-09	589	Aug-15	1,039			
Sep-09	590	Sep-15	1,042			
Oct-09	602	Oct-15	1,041			
Nov-09	658	Nov-15	1,041			
Dec-09	704	Dec-15	1,040			
Jan-10	721	Jan-16	1,041			
Feb-10	738	Feb-16	1,042			
Mar-10	745	Mar-16	1,043			
Apr-10	773	Apr-16	1,041			
May-10	785	May-16	1,041			
Jun-10	807	Jun-16	1,042			
Jul-10	819	Jul-16	1,043			
Aug-10	831	Aug-16	1,045			
Sep-10	834	Sep-16	1,047			
Oct-10	848	Oct-16	1,046			
Nov-10	897	Nov-16	1,045			
Dec-10	924	Dec-16	1,044			
Jan-11	943					

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2221  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.9282 SSE= 3.33E-05  
Par (X) = P1 \* X + P2 X= FYPDPI\$Q  
Coefficients (with 95% confidence bounds):  
p1 = -8.61E-06 (-1.1e-005, -6.219e-006)  
p2 = 0.5229 (0.3961, 0.6497)

**Slope Model**

GOF: R-Square= 0.7603 SSE= 7.50E-07  
Par (X) = P1 \* X + P2 X= NG  
Coefficients (with 95% confidence bounds):  
p1 = 0.0007787 (0.0003419, 0.001215)  
p2 = -0.005952 (-0.01319, 0.001289)

alpha: Jan -0.0504 Feb 0.1538 Mar 0.2332 Apr 0.428 May 0.3084 Jun 0.3129 Jul 0.0238 Aug -0.0092 Sep -0.1207 Oct -0.3735 Nov -0.2486 Dec -0.1575

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data FYPDPI\$QNG	date	For Monthly Allocation HDD
Jan-05	5.98	Jan-11	6.85	2005	45.11	50416.76	Jan-05	37.32
Feb-05	6.81	Feb-11	7.99	2006	40.27	51728.7	Feb-05	33.43
Mar-05	6.14	Mar-11	6.87	2007	42.14	52092.52	Mar-05	29.94
Apr-05	4.99	Apr-11	4.53	2008	43.61	52392.21	Apr-05	14.93
May-05	3.17	May-11	2.73	2009	40.42	53982.05	May-05	11.35
Jun-05	2.72	Jun-11	1.85	2010	40.77	54266.02	Jun-05	1.40
Jul-05	1.91	Jul-11	1.37	2011	43.02	54704.92	Jul-05	0.19
Aug-05	1.76	Aug-11	1.15	2012	39.57	54368.53	Aug-05	0.00
Sep-05	1.82	Sep-11	1.31	2013	41.46	54291.72	Sep-05	1.30
Oct-05	1.88	Oct-11	1.76	2014	43.65	53861.59	Oct-05	10.35
Nov-05	3.02	Nov-11	2.75	2015	44.48	53733.52	Nov-05	18.90
Dec-05	4.92	Dec-11	3.86				Dec-05	32.39
Jan-06	6.25	Jan-12	5.35				Jan-06	27.61
Feb-06	5.40	Feb-12	6.48				Feb-06	33.14
Mar-06	5.63	Mar-12	5.87				Mar-06	25.71
Apr-06	4.50	Apr-12	4.24				Apr-06	14.23
May-06	3.00	May-12	2.70				May-06	7.00
Jun-06	2.26	Jun-12	1.87				Jun-06	1.27
Jul-06	1.68	Jul-12	1.16				Jul-06	0.00
Aug-06	1.37	Aug-12	1.12				Aug-06	0.16
Sep-06	1.82	Sep-12	1.20				Sep-06	2.57
Oct-06	1.85	Oct-12	1.69				Oct-06	11.03
Nov-06	3.01	Nov-12	2.94				Nov-06	15.57
Dec-06	3.49	Dec-12	4.95				Dec-06	24.13
Jan-07	4.89	Jan-13	5.78				Jan-07	30.58
Feb-07	6.93	Feb-13	6.95				Feb-07	37.68
Mar-07	6.52	Mar-13	6.24				Mar-07	26.61
Apr-07	5.00	Apr-13	4.47				Apr-07	18.03
May-07	3.19	May-13	2.79				May-07	5.74
Jun-07	2.23	Jun-13	2.05				Jun-07	1.10
Jul-07	1.60	Jul-13	1.10				Jul-07	0.00
Aug-07	1.49	Aug-13	1.15				Aug-07	0.26
Sep-07	1.71	Sep-13	1.24				Sep-07	1.27
Oct-07	1.52	Oct-13	1.80				Oct-07	6.55
Nov-07	2.45	Nov-13	2.93				Nov-07	22.07
Dec-07	4.60	Dec-13	4.96				Dec-07	32.03
Jan-08	4.65	Jan-14	6.04				Jan-08	31.35
Feb-08	6.57	Feb-14	7.34				Feb-08	31.86
Mar-08	6.37	Mar-14	6.64				Mar-08	25.23
Apr-08	5.54	Apr-14	4.58				Apr-08	13.47
May-08	3.55	May-14	2.93				May-08	7.32
Jun-08	2.48	Jun-14	2.05				Jun-08	0.63
Jul-08	1.74	Jul-14	1.28				Jul-08	0.00
Aug-08	1.54	Aug-14	1.21				Aug-08	0.06
Sep-08	1.79	Sep-14	1.33				Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2221  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.9282 SSE= 3.33E-05  
Par (X) = P1 \* X + P2 X= FYPDPI\$Q  
Coefficients (with 95% confidence bounds):  
p1 = -8.61E-06 (-1.1e-005, -6.219e-006)  
p2 = 0.5229 (0.3961, 0.6497)

**Slope Model**

GOF: R-Square= 0.7603 SSE= 7.50E-07  
Par (X) = P1 \* X + P2 X= NG  
Coefficients (with 95% confidence bounds):  
p1 = 0.0007787 (0.0003419, 0.001215)  
p2 = -0.005952 (-0.01319, 0.001289)

alpha: Jan -0.0504 Feb 0.1538 Mar 0.2332 Apr 0.428 May 0.3084 Jun 0.3129 Jul 0.0238 Aug -0.0092 Sep -0.1207 Oct -0.3735 Nov -0.2486 Dec -0.1575

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data FYPDPI\$QNG	date	For Monthly Allocation HDD
Oct-08	1.64	Oct-14	1.98				Oct-08	12.61
Nov-08	2.86	Nov-14	3.11				Nov-08	22.17
Dec-08	4.88	Dec-14	5.16				Dec-08	29.48
Jan-09	5.60	Jan-15	6.09				Jan-09	40.81
Feb-09	7.02	Feb-15	7.47				Feb-09	32.11
Mar-09	6.49	Mar-15	6.65				Mar-09	27.32
Apr-09	4.89	Apr-15	4.73				Apr-09	15.45
May-09	2.72	May-15	3.00				May-09	6.71
Jun-09	1.54	Jun-15	2.13				Jun-09	2.10
Jul-09	1.50	Jul-15	1.26				Jul-09	0.19
Aug-09	1.11	Aug-15	1.24				Aug-09	0.10
Sep-09	1.16	Sep-15	1.34				Sep-09	3.03
Oct-09	1.62	Oct-15	1.95				Oct-09	12.77
Nov-09	2.81	Nov-15	3.21				Nov-09	15.80
Dec-09	3.97	Dec-15	5.40				Dec-09	31.84
Jan-10	7.36	Jan-16	6.93				Jan-10	35.68
Feb-10	7.48	Feb-16	8.20				Feb-10	31.79
Mar-10	5.82	Mar-16	7.57				Mar-10	19.61
Apr-10	3.96	Apr-16	4.49				Apr-10	11.13
May-10	2.48	May-16	2.85				May-10	3.90
Jun-10	1.88	Jun-16	2.02				Jun-10	0.53
Jul-10	0.72	Jul-16	1.20				Jul-10	0.00
Aug-10	1.13	Aug-16	1.18				Aug-10	0.06
Sep-10	1.16	Sep-16	1.27				Sep-10	1.03
Oct-10	1.49	Oct-16	1.85				Oct-10	9.45
Nov-10	2.50	Nov-16	3.04				Nov-10	20.07
Dec-10	4.78	Dec-16	5.12				Dec-10	33.65
Jan-11	6.90						Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3367  
Model: Customer Counts

GOF R-Square= 0.983151  
Model:  $216.004 - 89.5095 / (1 + \exp(-0.562696 * (t - 72.5935)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	243	Jan-11	133	2005	244	0
Feb-05	243	Feb-11	132	2006	231	
Mar-05	245	Mar-11	132	2007	198	
Apr-05	242	Apr-11	129	2008	221	
May-05	242	May-11	129	2009	133	
Jun-05	244	Jun-11	126	2010	127	
Jul-05	245	Jul-11	124	2011	131	
Aug-05	237	Aug-11	120	2012	127	
Sep-05	232	Sep-11	120	2013	127	
Oct-05	238	Oct-11	123	2014	127	
Nov-05	243	Nov-11	124	2015	127	
Dec-05	244	Dec-11	131			
Jan-06	246	Jan-12	126			
Feb-06	246	Feb-12	126			
Mar-06	244	Mar-12	126			
Apr-06	243	Apr-12	126			
May-06	223	May-12	126			
Jun-06	224	Jun-12	126			
Jul-06	223	Jul-12	126			
Aug-06	228	Aug-12	126			
Sep-06	236	Sep-12	126			
Oct-06	242	Oct-12	126			
Nov-06	229	Nov-12	127			
Dec-06	231	Dec-12	127			
Jan-07	227	Jan-13	126			
Feb-07	227	Feb-13	126			
Mar-07	225	Mar-13	126			
Apr-07	224	Apr-13	126			
May-07	223	May-13	126			
Jun-07	222	Jun-13	126			
Jul-07	221	Jul-13	126			
Aug-07	219	Aug-13	126			
Sep-07	215	Sep-13	126			
Oct-07	212	Oct-13	126			
Nov-07	202	Nov-13	126			
Dec-07	198	Dec-13	127			
Jan-08	205	Jan-14	126			
Feb-08	203	Feb-14	126			
Mar-08	205	Mar-14	126			
Apr-08	223	Apr-14	126			
May-08	218	May-14	126			
Jun-08	221	Jun-14	126			
Jul-08	219	Jul-14	126			
Aug-08	208	Aug-14	126			
Sep-08	207	Sep-14	126			
Oct-08	218	Oct-14	126			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3367  
Model: Customer Counts

GOF R-Square= 0.983151  
Model:  $216.004 - 89.5095 / (1 + \exp(-0.562696 * (t - 72.5935)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Economic Year End Customers	Data
Nov-08	222	Nov-14	126			0
Dec-08	221	Dec-14	127			
Jan-09	214	Jan-15	126			
Feb-09	210	Feb-15	126			
Mar-09	203	Mar-15	126			
Apr-09	200	Apr-15	126			
May-09	190	May-15	126			
Jun-09	179	Jun-15	126			
Jul-09	176	Jul-15	126			
Aug-09	142	Aug-15	126			
Sep-09	138	Sep-15	126			
Oct-09	143	Oct-15	126			
Nov-09	136	Nov-15	126			
Dec-09	133	Dec-15	127			
Jan-10	131	Jan-16	127			
Feb-10	135	Feb-16	126			
Mar-10	134	Mar-16	126			
Apr-10	132	Apr-16	126			
May-10	126	May-16	126			
Jun-10	126	Jun-16	126			
Jul-10	126	Jul-16	126			
Aug-10	122	Aug-16	126			
Sep-10	123	Sep-16	125			
Oct-10	124	Oct-16	126			
Nov-10	127	Nov-16	126			
Dec-10	127	Dec-16	127			
Jan-11	130					



**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3367  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.7597 SSE= 1.80E-03  
Par (X) = P1 \* X + P2 X= FET  
Coefficients (with 95% confidence bounds):  
p1 = 0.001775 (0.00077780, 0.002772)  
p2 = -1.121 (-1.804, -0.438)

**Slope Model**

GOF: R-Square= 0.4457 SSE= 1.56E-05  
Par (X) = P1 \* X + P2 X= NG  
Coefficients (with 95% confidence bounds):  
p1 = 0.001788 (-0.000204, 0.003781)  
p2 = 0.01229 (-0.02074, 0.04532)

alpha: Jan -0.0371 Feb 0.1817 Mar 0.2476 Apr 0.6343 May 0.2421 Jun 0.6348 Jul 0.4947 Aug -0.0381 Sep 0.0988 Oct -0.4988 Nov -0.2565 Dec -0.2014

date	Actual Use		Forecasted		Year	Annual			For Monthly Allocation	
	Per	date	Use Per	date		Use Per	Economic Data	NG	date	HDD
	Dth/MC/Day		Dth/MC/Day			Dth/MC/Da	FET			
Jan-05	31.58	Jan-11	28.13		2005	197.70	716.3244	16.954	Jan-05	37.32
Feb-05	37.40	Feb-11	40.21		2006	183.05	719.1648	16.544	Feb-05	33.43
Mar-05	30.72	Mar-11	28.55		2007	188.32	717.8742	16.224	Mar-05	29.94
Apr-05	24.95	Apr-11	23.49		2008	178.50	703.853	17.002	Apr-05	14.93
May-05	12.32	May-11	7.72		2009	174.56	670.2346	16.43	May-05	11.35
Jun-05	7.40	Jun-11	7.10		2010	174.09	657.7883	17.33875	Jun-05	1.40
Jul-05	4.26	Jul-11	2.97		2011	173.61	665.7408	16.20737	Jul-05	0.19
Aug-05	2.50	Aug-11	3.10		2012	173.92	684.8364	16.14208	Aug-05	0.00
Sep-05	3.18	Sep-11	1.53		2013	186.84	697.9501	16.86811	Sep-05	1.30
Oct-05	5.04	Oct-11	3.11		2014	206.70	718.511	17.47011	Oct-05	10.35
Nov-05	13.84	Nov-11	11.57		2015	217.69	735.1096	17.8157	Nov-05	18.90
Dec-05	24.51	Dec-11	16.13						Dec-05	32.39
Jan-06	29.60	Jan-12	29.36						Jan-06	27.61
Feb-06	30.64	Feb-12	34.31						Feb-06	33.14
Mar-06	33.78	Mar-12	30.94						Mar-06	25.71
Apr-06	18.73	Apr-12	28.07						Apr-06	14.23
May-06	11.82	May-12	6.89						May-06	7.00
Jun-06	6.56	Jun-12	5.32						Jun-06	1.27
Jul-06	3.64	Jul-12	2.41						Jul-06	0.00
Aug-06	2.73	Aug-12	1.45						Aug-06	0.16
Sep-06	4.43	Sep-12	2.65						Sep-06	2.57
Oct-06	5.99	Oct-12	4.21						Oct-06	11.03
Nov-06	13.06	Nov-12	10.78						Nov-06	15.57
Dec-06	22.07	Dec-12	17.52						Dec-06	24.13
Jan-07	25.84	Jan-13	29.70						Jan-07	30.58
Feb-07	39.48	Feb-13	38.22						Feb-07	37.68
Mar-07	34.16	Mar-13	33.85						Mar-07	26.61
Apr-07	25.46	Apr-13	29.76						Apr-07	18.03
May-07	12.64	May-13	7.26						May-07	5.74
Jun-07	4.43	Jun-13	5.42						Jun-07	1.10
Jul-07	3.34	Jul-13	2.57						Jul-07	0.00
Aug-07	2.88	Aug-13	1.44						Aug-07	0.26
Sep-07	3.20	Sep-13	3.06						Sep-07	1.27
Oct-07	3.30	Oct-13	4.41						Oct-07	6.55
Nov-07	14.64	Nov-13	11.56						Nov-07	22.07
Dec-07	18.96	Dec-13	19.58						Dec-07	32.03
Jan-08	31.81	Jan-14	33.21						Jan-08	31.35
Feb-08	36.21	Feb-14	43.29						Feb-08	31.86
Mar-08	26.48	Mar-14	36.48						Mar-08	25.23
Apr-08	18.61	Apr-14	30.91						Apr-08	13.47
May-08	13.62	May-14	8.63						May-08	7.32
Jun-08	5.72	Jun-14	6.98						Jun-08	0.63
Jul-08	3.06	Jul-14	3.00						Jul-08	0.00
Aug-08	2.59	Aug-14	1.94						Aug-08	0.06
Sep-08	2.87	Sep-14	2.75						Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3367  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.7597 SSE= 1.80E-03  
Par (X) = P1 \* X + P2 X= FET  
Coefficients (with 95% confidence bounds):  
p1 = 0.001775 (0.00077780, 0.002772)  
p2 = -1.121 (-1.804, -0.438)

**Slope Model**

GOF: R-Square= 0.4457 SSE= 1.56E-05  
Par (X) = P1 \* X + P2 X= NG  
Coefficients (with 95% confidence bounds):  
p1 = 0.001788 (-0.000204, 0.003781)  
p2 = 0.01229 (-0.02074, 0.04532)

alpha: Jan -0.0371 Feb 0.1817 Mar 0.2476 Apr 0.6343 May 0.2421 Jun 0.6348 Jul 0.4947 Aug -0.0381 Sep 0.0988 Oct -0.4988 Nov -0.2565 Dec -0.2014

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data FET NG	date	For Monthly Allocation HDD
Oct-08	2.83	Oct-14	4.64				Oct-08	12.61
Nov-08	13.40	Nov-14	13.09				Nov-08	22.17
Dec-08	21.29	Dec-14	21.79				Dec-08	29.48
Jan-09	30.91	Jan-15	35.35				Jan-09	40.81
Feb-09	31.83	Feb-15	44.75				Feb-09	32.11
Mar-09	25.55	Mar-15	38.76				Mar-09	27.32
Apr-09	26.75	Apr-15	34.03				Apr-09	15.45
May-09	6.32	May-15	8.70				May-09	6.71
Jun-09	6.32	Jun-15	6.76				Jun-09	2.10
Jul-09	2.50	Jul-15	3.06				Jul-09	0.19
Aug-09	2.31	Aug-15	1.84				Aug-09	0.10
Sep-09	2.67	Sep-15	3.25				Sep-09	3.03
Oct-09	7.47	Oct-15	5.09				Oct-09	12.77
Nov-09	14.09	Nov-15	13.58				Nov-09	15.80
Dec-09	17.86	Dec-15	22.51				Dec-09	31.84
Jan-10	31.91	Jan-16	33.30				Jan-10	35.68
Feb-10	33.72	Feb-16	41.03				Feb-10	31.79
Mar-10	31.05	Mar-16	36.81				Mar-10	19.61
Apr-10	25.92	Apr-16	39.71				Apr-10	11.13
May-10	4.61	May-16	10.16				May-10	3.90
Jun-10	2.66	Jun-16	7.89				Jun-10	0.53
Jul-10	2.28	Jul-16	3.55				Jul-10	0.00
Aug-10	0.54	Aug-16	2.15				Aug-10	0.06
Sep-10	5.14	Sep-16	3.82				Sep-10	1.03
Oct-10	5.17	Oct-16	5.93				Oct-10	9.45
Nov-10	10.26	Nov-16	15.85				Nov-10	20.07
Dec-10	20.81	Dec-16	26.26				Dec-10	33.65
Jan-11	27.89						Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 33EN  
Model: Customer Counts

GOF R-Square= 0.605161  
Model:  $168.972 - 20.2098 / (1 + \exp(-2.6773 * (t - 62.649)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	162	Jan-11	159	2005	160	0
Feb-05	161	Feb-11	162	2006	171	
Mar-05	161	Mar-11	162	2007	165	
Apr-05	186	Apr-11	162	2008	143	
May-05	186	May-11	161	2009	140	
Jun-05	186	Jun-11	161	2010	156	
Jul-05	164	Jul-11	161	2011	165	
Aug-05	163	Aug-11	162	2012	149	
Sep-05	165	Sep-11	160	2013	150	
Oct-05	161	Oct-11	166	2014	150	
Nov-05	160	Nov-11	168	2015	151	
Dec-05	160	Dec-11	165			
Jan-06	159	Jan-12	149			
Feb-06	159	Feb-12	149			
Mar-06	160	Mar-12	148			
Apr-06	160	Apr-12	148			
May-06	175	May-12	149			
Jun-06	176	Jun-12	149			
Jul-06	178	Jul-12	149			
Aug-06	177	Aug-12	148			
Sep-06	173	Sep-12	148			
Oct-06	173	Oct-12	149			
Nov-06	174	Nov-12	149			
Dec-06	171	Dec-12	149			
Jan-07	174	Jan-13	149			
Feb-07	174	Feb-13	149			
Mar-07	176	Mar-13	149			
Apr-07	177	Apr-13	149			
May-07	175	May-13	149			
Jun-07	175	Jun-13	149			
Jul-07	175	Jul-13	149			
Aug-07	175	Aug-13	149			
Sep-07	170	Sep-13	149			
Oct-07	165	Oct-13	149			
Nov-07	166	Nov-13	150			
Dec-07	165	Dec-13	150			
Jan-08	161	Jan-14	150			
Feb-08	164	Feb-14	150			
Mar-08	167	Mar-14	150			
Apr-08	164	Apr-14	150			
May-08	166	May-14	150			
Jun-08	165	Jun-14	150			
Jul-08	165	Jul-14	150			
Aug-08	166	Aug-14	150			
Sep-08	155	Sep-14	150			
Oct-08	147	Oct-14	150			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 33EN  
Model: Customer Counts

GOF R-Square= 0.605161  
Model:  $168.972 - 20.2098 / (1 + \exp(-2.6773 * (t - 62.649)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	143	Nov-14	150			0
Dec-08	143	Dec-14	150			
Jan-09	141	Jan-15	150			
Feb-09	143	Feb-15	150			
Mar-09	145	Mar-15	151			
Apr-09	144	Apr-15	150			
May-09	144	May-15	150			
Jun-09	146	Jun-15	151			
Jul-09	146	Jul-15	151			
Aug-09	144	Aug-15	151			
Sep-09	140	Sep-15	151			
Oct-09	140	Oct-15	151			
Nov-09	137	Nov-15	151			
Dec-09	140	Dec-15	151			
Jan-10	140	Jan-16	151			
Feb-10	140	Feb-16	151			
Mar-10	142	Mar-16	151			
Apr-10	141	Apr-16	151			
May-10	144	May-16	151			
Jun-10	144	Jun-16	151			
Jul-10	143	Jul-16	151			
Aug-10	143	Aug-16	152			
Sep-10	152	Sep-16	152			
Oct-10	151	Oct-16	152			
Nov-10	154	Nov-16	152			
Dec-10	156	Dec-16	151			
Jan-11	154					

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 33EN  
Model: Use per Customer (Dth/Customer/Day)

Base Model

GOF: R-Square= 0.4483 SSE= 2.64E-01  
Par (X) = P1 \* X + P2 X= FHSTMFQ  
Coefficients (with 95% confidence bounds):  
p1 = -0.001133 (-0.002388 0.0001225)  
p2 = 4.255 (3.725, 4.785)

Slope Model

GOF: R-Square= 0.457 SSE= 1.00E-02  
Par (X) = P1 \* X + P2 X= FET  
Coefficients (with 95% confidence bounds):  
p1 = -0.002158 (-0.004507 0.0001917)  
p2 = 2.468 (0.859, 4.078)

alpha: Jan -0.0239 Feb 0.0496 Mar 0.0959 Apr 0.0089 May -0.3017 Jun -0.0535 Jul 0.04 Aug -0.0259 Sep -0.0923 Oct -0.2308 Nov -0.0706 Dec 0.0092

date	Actual Use		Forecasted		Year	Annual			For Monthly Allocation	
	Per	date	Use Per	Dth/MC/Day		Use Per	Economic Data		date	HDD
	Dth/MC/Day		Dth/MC/Day			Dth/MC/Day	FHSTMFQ	FET		
Jan-05	38.29	Jan-11	33.95	2005	205.06	773.6476	716.3244	Jan-05	37.32	
Feb-05	34.37	Feb-11	38.57	2006	197.38	815.3507	719.1648	Feb-05	33.43	
Mar-05	31.20	Mar-11	28.19	2007	215.11	576.9624	717.8742	Mar-05	29.94	
Apr-05	13.56	Apr-11	21.91	2008	200.58	207.9252	703.853	Apr-05	14.93	
May-05	10.09	May-11	8.38	2009	226.93	196.7776	670.2346	May-05	11.35	
Jun-05	3.56	Jun-11	3.70	2010	221.98	150.953	657.7883	Jun-05	1.40	
Jul-05	2.95	Jul-11	3.05	2011	213.50	467.1277	665.7408	Jul-05	0.19	
Aug-05	3.58	Aug-11	3.74	2012	225.20	785.2471	684.8364	Aug-05	0.00	
Sep-05	3.22	Sep-11	5.44	2013	215.26	869.2539	697.9501	Sep-05	1.30	
Oct-05	8.50	Oct-11	8.14	2014	199.57	859.3866	718.511	Oct-05	10.35	
Nov-05	22.74	Nov-11	27.49	2015	190.28	900.3557	735.1096	Nov-05	18.90	
Dec-05	33.00	Dec-11	30.96					Dec-05	32.39	
Jan-06	31.62	Jan-12	40.78					Jan-06	27.61	
Feb-06	35.00	Feb-12	41.63					Feb-06	33.14	
Mar-06	29.20	Mar-12	31.90					Mar-06	25.71	
Apr-06	17.05	Apr-12	19.00					Apr-06	14.23	
May-06	10.32	May-12	8.53					May-06	7.00	
Jun-06	4.30	Jun-12	4.27					Jun-06	1.27	
Jul-06	3.10	Jul-12	3.72					Jul-06	0.00	
Aug-06	2.93	Aug-12	3.78					Aug-06	0.16	
Sep-06	5.59	Sep-12	5.13					Sep-06	2.57	
Oct-06	8.72	Oct-12	10.98					Oct-06	11.03	
Nov-06	21.34	Nov-12	22.01					Nov-06	15.57	
Dec-06	28.21	Dec-12	33.46					Dec-06	24.13	
Jan-07	27.97	Jan-13	40.55					Jan-07	30.58	
Feb-07	43.43	Feb-13	41.11					Feb-07	37.68	
Mar-07	34.00	Mar-13	28.66					Mar-07	26.61	
Apr-07	22.99	Apr-13	17.54					Apr-07	18.03	
May-07	5.37	May-13	9.38					May-07	5.74	
Jun-07	5.00	Jun-13	3.62					Jun-07	1.10	
Jul-07	4.03	Jul-13	3.16					Jul-07	0.00	
Aug-07	3.65	Aug-13	3.47					Aug-07	0.26	
Sep-07	4.36	Sep-13	4.65					Sep-07	1.27	
Oct-07	6.93	Oct-13	10.01					Oct-07	6.55	
Nov-07	22.05	Nov-13	21.06					Nov-07	22.07	
Dec-07	35.32	Dec-13	32.04					Dec-07	32.03	
Jan-08	29.33	Jan-14	36.49					Jan-08	31.35	
Feb-08	34.66	Feb-14	38.51					Feb-08	31.86	
Mar-08	33.08	Mar-14	26.93					Mar-08	25.23	
Apr-08	18.36	Apr-14	16.97					Apr-08	13.47	
May-08	3.60	May-14	7.86					May-08	7.32	
Jun-08	5.46	Jun-14	3.46					Jun-08	0.63	
Jul-08	5.20	Jul-14	3.02					Jul-08	0.00	
Aug-08	4.68	Aug-14	3.24					Aug-08	0.06	
Sep-08	5.81	Sep-14	4.47					Sep-08	2.40	

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 33EN  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.4483 SSE= 2.64E-01  
Par (X) = P1 \* X + P2 X= FHSTMFQ  
Coefficients (with 95% confidence bounds):  
p1 = -0.001133 (-0.002388 0.0001225)  
p2 = 4.255 (3.725, 4.785)

**Slope Model**

GOF: R-Square= 0.457 SSE= 1.00E-02  
Par (X) = P1 \* X + P2 X= FET  
Coefficients (with 95% confidence bounds):  
p1 = -0.002158 (-0.004507 0.0001917)  
p2 = 2.468 (0.859, 4.078)

alpha: Jan -0.0239 Feb 0.0496 Mar 0.0959 Apr 0.0089 May -0.3017 Jun -0.0535 Jul 0.04 Aug -0.0259 Sep -0.0923 Oct -0.2308 Nov -0.0706 Dec 0.0092

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data FHSTMFQ FET	date	For Monthly Allocation HDD
Oct-08	12.27	Oct-14	8.75				Oct-08	12.61
Nov-08	14.14	Nov-14	20.82				Nov-08	22.17
Dec-08	34.00	Dec-14	29.06				Dec-08	29.48
Jan-09	36.40	Jan-15	35.06				Jan-09	40.81
Feb-09	37.70	Feb-15	36.53				Feb-09	32.11
Mar-09	36.47	Mar-15	25.78				Mar-09	27.32
Apr-09	20.76	Apr-15	15.89				Apr-09	15.45
May-09	3.74	May-15	7.67				May-09	6.71
Jun-09	6.25	Jun-15	3.35				Jun-09	2.10
Jul-09	6.84	Jul-15	2.92				Jul-09	0.19
Aug-09	4.06	Aug-15	3.09				Aug-09	0.10
Sep-09	8.48	Sep-15	4.25				Sep-09	3.03
Oct-09	14.61	Oct-15	8.79				Oct-09	12.77
Nov-09	19.08	Nov-15	18.97				Nov-09	15.80
Dec-09	32.53	Dec-15	28.00				Dec-09	31.84
Jan-10	48.09	Jan-16	35.68				Jan-10	35.68
Feb-10	40.65	Feb-16	35.89				Feb-10	31.79
Mar-10	23.83	Mar-16	26.40				Mar-10	19.61
Apr-10	14.42	Apr-16	14.75				Apr-10	11.13
May-10	8.97	May-16	7.11				May-10	3.90
Jun-10	3.81	Jun-16	3.16				Jun-10	0.53
Jul-10	3.23	Jul-16	2.72				Jul-10	0.00
Aug-10	3.86	Aug-16	2.86				Aug-10	0.06
Sep-10	4.50	Sep-16	3.97				Sep-10	1.03
Oct-10	12.06	Oct-16	8.15				Oct-10	9.45
Nov-10	19.93	Nov-16	17.58				Nov-10	20.07
Dec-10	38.64	Dec-16	26.11				Dec-10	33.65
Jan-11	40.15						Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3321  
Model: Customer Counts

GOF R-Square= 0.965048  
Model:  $50.7057 + 82.7278 / (1 + \exp(-0.149259 * (t - 69.6412)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	29	Jan-11	132	2005	27	0
Feb-05	29	Feb-11	133	2006	52	
Mar-05	29	Mar-11	135	2007	74	
Apr-05	5	Apr-11	137	2008	77	
May-05	4	May-11	137	2009	117	
Jun-05	4	Jun-11	136	2010	131	
Jul-05	27	Jul-11	136	2011	150	
Aug-05	29	Aug-11	141	2012	134	
Sep-05	27	Sep-11	146	2013	135	
Oct-05	27	Oct-11	147	2014	136	
Nov-05	27	Nov-11	147	2015	137	
Dec-05	27	Dec-11	150			
Jan-06	27	Jan-12	133			
Feb-06	27	Feb-12	133			
Mar-06	29	Mar-12	132			
Apr-06	29	Apr-12	133			
May-06	30	May-12	133			
Jun-06	30	Jun-12	133			
Jul-06	30	Jul-12	133			
Aug-06	32	Aug-12	133			
Sep-06	30	Sep-12	133			
Oct-06	30	Oct-12	133			
Nov-06	46	Nov-12	133			
Dec-06	52	Dec-12	134			
Jan-07	52	Jan-13	134			
Feb-07	52	Feb-13	134			
Mar-07	52	Mar-13	134			
Apr-07	51	Apr-13	134			
May-07	50	May-13	134			
Jun-07	49	Jun-13	134			
Jul-07	49	Jul-13	134			
Aug-07	49	Aug-13	134			
Sep-07	52	Sep-13	134			
Oct-07	51	Oct-13	135			
Nov-07	62	Nov-13	135			
Dec-07	74	Dec-13	135			
Jan-08	78	Jan-14	135			
Feb-08	77	Feb-14	135			
Mar-08	76	Mar-14	135			
Apr-08	58	Apr-14	135			
May-08	60	May-14	135			
Jun-08	63	Jun-14	135			
Jul-08	63	Jul-14	135			
Aug-08	62	Aug-14	135			
Sep-08	62	Sep-14	136			
Oct-08	65	Oct-14	136			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3321  
Model: Customer Counts

GOF R-Square= 0.965048  
Model:  $50.7057 + 82.7278 / (1 + \exp(-0.149259 * (t - 69.6412)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Economic Year End Data Customers	0
Nov-08	65	Nov-14	136			
Dec-08	77	Dec-14	136			
Jan-09	89	Jan-15	136			
Feb-09	91	Feb-15	136			
Mar-09	93	Mar-15	137			
Apr-09	95	Apr-15	136			
May-09	105	May-15	136			
Jun-09	111	Jun-15	136			
Jul-09	114	Jul-15	136			
Aug-09	101	Aug-15	136			
Sep-09	103	Sep-15	137			
Oct-09	101	Oct-15	137			
Nov-09	114	Nov-15	137			
Dec-09	117	Dec-15	137			
Jan-10	119	Jan-16	137			
Feb-10	119	Feb-16	137			
Mar-10	121	Mar-16	137			
Apr-10	122	Apr-16	137			
May-10	122	May-16	137			
Jun-10	122	Jun-16	137			
Jul-10	122	Jul-16	138			
Aug-10	124	Aug-16	138			
Sep-10	129	Sep-16	139			
Oct-10	129	Oct-16	138			
Nov-10	128	Nov-16	138			
Dec-10	131	Dec-16	138			
Jan-11	129					



**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3321  
Model: Use per Customer (Dth/Customer/Day)

Base Model

GOF: R-Square= 0 SSE= 1.45E-01  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 0.09555

Slope Model

GOF: R-Square= n/a SSE= 9.68E-04  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 0.04484

alpha: Jan 0.0077 Feb 0.1178 Mar 0.1511 Apr 1.208 May 0.8783 Jun 2.3107 Jul -0.2296 Aug -0.0312 Sep -0.2962 Oct -0.6223 Nov -0.413 Dec -0.2278

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data TimeConst	TimeConst	date	For Monthly Allocation HDD
Jan-05	37.27	Jan-11	33.41	2005	449.32	2005		Jan-05	37.32
Feb-05	36.74	Feb-11	38.80	2006	163.03	2006		Feb-05	33.43
Mar-05	36.46	Mar-11	30.21	2007	173.81	2007		Mar-05	29.94
Apr-05	131.80	Apr-11	21.55	2008	188.18	2008		Apr-05	14.93
May-05	98.94	May-11	13.25	2009	181.91	2009		May-05	11.35
Jun-05	60.11	Jun-11	3.48	2010	181.15	2010		Jun-05	1.40
Jul-05	3.11	Jul-11	3.77	2011	187.12	2011		Jul-05	0.19
Aug-05	1.67	Aug-11	2.84	2012	246.18	2012		Aug-05	0.00
Sep-05	1.02	Sep-11	3.45	2013	229.43	2013		Sep-05	1.30
Oct-05	4.54	Oct-11	4.35	2014	202.78	2014		Oct-05	10.35
Nov-05	12.76	Nov-11	12.64	2015	191.17	2015		Nov-05	18.90
Dec-05	24.91	Dec-11	19.37					Dec-05	32.39
Jan-06	34.10	Jan-12	38.94					Jan-06	27.61
Feb-06	24.11	Feb-12	44.40					Feb-06	33.14
Mar-06	29.36	Mar-12	39.88					Mar-06	25.71
Apr-06	22.23	Apr-12	31.96					Apr-06	14.23
May-06	11.08	May-12	14.45					May-06	7.00
Jun-06	6.60	Jun-12	7.85					Jun-06	1.27
Jul-06	2.60	Jul-12	5.60					Jul-06	0.00
Aug-06	1.92	Aug-12	2.87					Aug-06	0.16
Sep-06	2.79	Sep-12	4.23					Sep-06	2.57
Oct-06	4.87	Oct-12	7.04					Oct-06	11.03
Nov-06	7.19	Nov-12	17.33					Nov-06	15.57
Dec-06	16.18	Dec-12	31.64					Dec-06	24.13
Jan-07	26.86	Jan-13	36.57					Jan-07	30.58
Feb-07	33.19	Feb-13	42.54					Feb-07	37.68
Mar-07	30.11	Mar-13	38.40					Mar-07	26.61
Apr-07	23.46	Apr-13	28.55					Apr-07	18.03
May-07	13.31	May-13	13.53					May-07	5.74
Jun-07	7.26	Jun-13	6.85					Jun-07	1.10
Jul-07	1.82	Jul-13	5.33					Jul-07	0.00
Aug-07	2.66	Aug-13	2.60					Aug-07	0.26
Sep-07	3.33	Sep-13	3.87					Sep-07	1.27
Oct-07	3.62	Oct-13	6.99					Oct-07	6.55
Nov-07	7.90	Nov-13	15.65					Nov-07	22.07
Dec-07	20.31	Dec-13	28.57					Dec-07	32.03
Jan-08	32.04	Jan-14	32.14					Jan-08	31.35
Feb-08	36.96	Feb-14	37.70					Feb-08	31.86
Mar-08	32.65	Mar-14	33.02					Mar-08	25.23
Apr-08	30.28	Apr-14	24.53					Apr-08	13.47
May-08	9.94	May-14	13.01					May-08	7.32
Jun-08	5.15	Jun-14	5.44					Jun-08	0.63
Jul-08	1.02	Jul-14	4.50					Jul-08	0.00
Aug-08	1.54	Aug-14	2.37					Aug-08	0.06
Sep-08	2.83	Sep-14	3.57					Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3321  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0 SSE= 1.45E-01  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 0.09555

**Slope Model**

GOF: R-Square= n/a SSE= 9.68E-04  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 0.04484

alpha: Jan 0.0077 Feb 0.1178 Mar 0.1511 Apr 1.208 May 0.8783 Jun 2.3107 Jul -0.2296 Aug -0.0312 Sep -0.2962 Oct -0.6223 Nov -0.413 Dec -0.2278

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data TimeConst	TimeConst	date	For Monthly Allocation HDD
Oct-08	4.31	Oct-14	6.09					Oct-08	12.61
Nov-08	9.78	Nov-14	14.31					Nov-08	22.17
Dec-08	21.68	Dec-14	26.10					Dec-08	29.48
Jan-09	31.25	Jan-15	30.33					Jan-09	40.81
Feb-09	37.81	Feb-15	35.56					Feb-09	32.11
Mar-09	25.39	Mar-15	31.05					Mar-09	27.32
Apr-09	28.13	Apr-15	23.90					Apr-09	15.45
May-09	8.81	May-15	11.58					May-09	6.71
Jun-09	6.40	Jun-15	5.64					Jun-09	2.10
Jul-09	3.90	Jul-15	4.34					Jul-09	0.19
Aug-09	2.74	Aug-15	2.21					Aug-09	0.10
Sep-09	2.74	Sep-15	3.27					Sep-09	3.03
Oct-09	4.65	Oct-15	5.66					Oct-09	12.77
Nov-09	11.30	Nov-15	13.29					Nov-09	15.80
Dec-09	18.79	Dec-15	24.32					Dec-09	31.84
Jan-10	37.35	Jan-16	37.98					Jan-10	35.68
Feb-10	36.53	Feb-16	42.99					Feb-10	31.79
Mar-10	30.67	Mar-16	39.17					Mar-10	19.61
Apr-10	17.87	Apr-16	17.48					Apr-10	11.13
May-10	7.26	May-16	8.47					May-10	3.90
Jun-10	5.35	Jun-16	4.13					Jun-10	0.53
Jul-10	3.32	Jul-16	3.17					Jul-10	0.00
Aug-10	1.91	Aug-16	1.60					Aug-10	0.06
Sep-10	2.59	Sep-16	2.38					Sep-10	1.03
Oct-10	5.56	Oct-16	4.14					Oct-10	9.45
Nov-10	10.84	Nov-16	9.72					Nov-10	20.07
Dec-10	21.89	Dec-16	17.78					Dec-10	33.65
Jan-11	33.94							Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2367  
Model: Customer Counts

GOF R-Square= 0.933369  
Model:  $82.3333 - 35.3333 / (1 + \exp(-0.377358 * (t - 74)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	89	Jan-11	49	2005	85	0
Feb-05	89	Feb-11	48	2006	78	
Mar-05	89	Mar-11	45	2007	85	
Apr-05	89	Apr-11	46	2008	82	
May-05	88	May-11	49	2009	62	
Jun-05	87	Jun-11	47	2010	47	
Jul-05	86	Jul-11	47	2011	46	
Aug-05	85	Aug-11	42	2012	47	
Sep-05	82	Sep-11	43	2013	47	
Oct-05	83	Oct-11	45	2014	48	
Nov-05	83	Nov-11	43	2015	48	
Dec-05	85	Dec-11	46			
Jan-06	85	Jan-12	47			
Feb-06	84	Feb-12	46			
Mar-06	84	Mar-12	46			
Apr-06	84	Apr-12	46			
May-06	82	May-12	45			
Jun-06	81	Jun-12	45			
Jul-06	78	Jul-12	45			
Aug-06	80	Aug-12	45			
Sep-06	79	Sep-12	45			
Oct-06	80	Oct-12	46			
Nov-06	78	Nov-12	47			
Dec-06	78	Dec-12	47			
Jan-07	76	Jan-13	47			
Feb-07	76	Feb-13	46			
Mar-07	75	Mar-13	46			
Apr-07	75	Apr-13	46			
May-07	75	May-13	45			
Jun-07	74	Jun-13	45			
Jul-07	74	Jul-13	45			
Aug-07	80	Aug-13	45			
Sep-07	82	Sep-13	45			
Oct-07	84	Oct-13	46			
Nov-07	84	Nov-13	47			
Dec-07	85	Dec-13	47			
Jan-08	84	Jan-14	47			
Feb-08	84	Feb-14	46			
Mar-08	84	Mar-14	46			
Apr-08	84	Apr-14	46			
May-08	86	May-14	45			
Jun-08	85	Jun-14	44			
Jul-08	87	Jul-14	45			
Aug-08	81	Aug-14	45			
Sep-08	82	Sep-14	45			
Oct-08	82	Oct-14	46			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2367  
Model: Customer Counts

GOF R-Square= 0.933369  
Model:  $82.3333 - 35.3333 / (1 + \exp(-0.377358 * (t - 74)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	81	Nov-14	47			0
Dec-08	82	Dec-14	48			
Jan-09	81	Jan-15	47			
Feb-09	81	Feb-15	46			
Mar-09	78	Mar-15	46			
Apr-09	78	Apr-15	45			
May-09	73	May-15	45			
Jun-09	72	Jun-15	44			
Jul-09	73	Jul-15	44			
Aug-09	60	Aug-15	45			
Sep-09	61	Sep-15	45			
Oct-09	63	Oct-15	46			
Nov-09	62	Nov-15	47			
Dec-09	62	Dec-15	48			
Jan-10	60	Jan-16	47			
Feb-10	57	Feb-16	46			
Mar-10	52	Mar-16	47			
Apr-10	48	Apr-16	46			
May-10	44	May-16	45			
Jun-10	43	Jun-16	44			
Jul-10	42	Jul-16	44			
Aug-10	46	Aug-16	44			
Sep-10	48	Sep-16	44			
Oct-10	48	Oct-16	45			
Nov-10	48	Nov-16	47			
Dec-10	47	Dec-16	48			
Jan-11	48					

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2367  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0 SSE= 4.81E-02  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 0.8388

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data TimeConst	0	For Monthly Allocation date	HDD
Jan-05	25.33	Jan-11	23.61	2005	206.05	2005		Jan-05	37.32
Feb-05	24.01	Feb-11	16.48	2006	196.28	2006		Feb-05	33.43
Mar-05	22.49	Mar-11	27.76	2007	180.13	2007		Mar-05	29.94
Apr-05	18.90	Apr-11	18.83	2008	184.27	2008		Apr-05	14.93
May-05	14.71	May-11	12.22	2009	188.87	2009		May-05	11.35
Jun-05	16.79	Jun-11	12.13	2010	201.31	2010		Jun-05	1.40
Jul-05	11.22	Jul-11	10.95	2011	188.45	2011		Jul-05	0.19
Aug-05	11.21	Aug-11	12.76	2012	194.40	2012		Aug-05	0.00
Sep-05	12.39	Sep-11	12.01	2013	197.42	2013		Sep-05	1.30
Oct-05	12.07	Oct-11	10.21	2014	199.99	2014		Oct-05	10.35
Nov-05	15.79	Nov-11	16.60	2015	200.86	2015		Nov-05	18.90
Dec-05	21.14	Dec-11	14.88					Dec-05	32.39
Jan-06	21.40	Jan-12	26.19					Jan-06	27.61
Feb-06	19.32	Feb-12	21.96					Feb-06	33.14
Mar-06	23.20	Mar-12	24.35					Mar-06	25.71
Apr-06	21.54	Apr-12	20.02					Apr-06	14.23
May-06	16.00	May-12	15.77					May-06	7.00
Jun-06	15.28	Jun-12	12.60					Jun-06	1.27
Jul-06	10.56	Jul-12	10.48					Jul-06	0.00
Aug-06	8.82	Aug-12	9.60					Aug-06	0.16
Sep-06	16.32	Sep-12	11.66					Sep-06	2.57
Oct-06	12.55	Oct-12	10.11					Oct-06	11.03
Nov-06	15.17	Nov-12	15.45					Nov-06	15.57
Dec-06	16.12	Dec-12	16.20					Dec-06	24.13
Jan-07	18.25	Jan-13	27.01					Jan-07	30.58
Feb-07	21.92	Feb-13	21.90					Feb-07	37.68
Mar-07	19.13	Mar-13	25.91					Mar-07	26.61
Apr-07	17.31	Apr-13	20.60					Apr-07	18.03
May-07	13.34	May-13	16.58					May-07	5.74
Jun-07	12.26	Jun-13	11.42					Jun-07	1.10
Jul-07	10.47	Jul-13	10.35					Jul-07	0.00
Aug-07	8.72	Aug-13	9.44					Aug-07	0.26
Sep-07	13.40	Sep-13	11.90					Sep-07	1.27
Oct-07	11.20	Oct-13	10.54					Oct-07	6.55
Nov-07	15.82	Nov-13	15.22					Nov-07	22.07
Dec-07	18.31	Dec-13	16.57					Dec-07	32.03
Jan-08	23.39	Jan-14	26.43					Jan-08	31.35
Feb-08	23.57	Feb-14	21.17					Feb-08	31.86
Mar-08	21.03	Mar-14	26.84					Mar-08	25.23
Apr-08	17.38	Apr-14	20.39					Apr-08	13.47
May-08	14.20	May-14	15.81					May-08	7.32
Jun-08	10.41	Jun-14	13.00					Jun-08	0.63
Jul-08	9.97	Jul-14	11.18					Jul-08	0.00
Aug-08	11.71	Aug-14	10.38					Aug-08	0.06
Sep-08	12.74	Sep-14	12.11					Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2367  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0 SSE= 4.81E-02  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 0.8388

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data TimeConst	0	For Monthly Allocation date	HDD
Oct-08	9.02	Oct-14	10.59					Oct-08	12.61
Nov-08	14.28	Nov-14	15.93					Nov-08	22.17
Dec-08	16.56	Dec-14	16.15					Dec-08	29.48
Jan-09	20.83	Jan-15	26.90					Jan-09	40.81
Feb-09	21.98	Feb-15	22.24					Feb-09	32.11
Mar-09	17.52	Mar-15	26.04					Mar-09	27.32
Apr-09	16.29	Apr-15	21.07					Apr-09	15.45
May-09	12.20	May-15	16.27					May-09	6.71
Jun-09	15.39	Jun-15	12.69					Jun-09	2.10
Jul-09	10.19	Jul-15	11.06					Jul-09	0.19
Aug-09	18.31	Aug-15	9.94					Aug-09	0.10
Sep-09	12.38	Sep-15	12.05					Sep-09	3.03
Oct-09	9.56	Oct-15	10.55					Oct-09	12.77
Nov-09	18.04	Nov-15	15.74					Nov-09	15.80
Dec-09	16.19	Dec-15	16.30					Dec-09	31.84
Jan-10	28.49	Jan-16	24.45					Jan-10	35.68
Feb-10	22.52	Feb-16	19.52					Feb-10	31.79
Mar-10	22.40	Mar-16	23.16					Mar-10	19.61
Apr-10	20.13	Apr-16	21.88					Apr-10	11.13
May-10	19.86	May-16	17.28					May-10	3.90
Jun-10	9.59	Jun-16	13.47					Jun-10	0.53
Jul-10	10.15	Jul-16	11.74					Jul-10	0.00
Aug-10	7.79	Aug-16	10.79					Aug-10	0.06
Sep-10	13.24	Sep-16	13.08					Sep-10	1.03
Oct-10	12.71	Oct-16	11.45					Oct-10	9.45
Nov-10	14.82	Nov-16	16.71					Nov-10	20.07
Dec-10	19.63	Dec-16	17.31					Dec-10	33.65
Jan-11	23.27							Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 23EN  
Model: Customer Counts

GOF R-Square= 0.462579  
Model:  $62.5763 + 7.82994 / (1 + \exp(-0.343024 * (t - 67.4015)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	64	Jan-11	69	2005	56	0
Feb-05	64	Feb-11	69	2006	62	
Mar-05	64	Mar-11	69	2007	62	
Apr-05	64	Apr-11	69	2008	66	
May-05	64	May-11	69	2009	74	
Jun-05	64	Jun-11	69	2010	68	
Jul-05	64	Jul-11	69	2011	63	
Aug-05	64	Aug-11	69	2012	68	
Sep-05	58	Sep-11	65	2013	69	
Oct-05	59	Oct-11	65	2014	69	
Nov-05	58	Nov-11	63	2015	69	
Dec-05	56	Dec-11	63			
Jan-06	56	Jan-12	68			
Feb-06	56	Feb-12	68			
Mar-06	56	Mar-12	69			
Apr-06	57	Apr-12	69			
May-06	57	May-12	69			
Jun-06	57	Jun-12	69			
Jul-06	57	Jul-12	69			
Aug-06	57	Aug-12	69			
Sep-06	62	Sep-12	69			
Oct-06	62	Oct-12	68			
Nov-06	63	Nov-12	68			
Dec-06	62	Dec-12	68			
Jan-07	63	Jan-13	69			
Feb-07	63	Feb-13	69			
Mar-07	64	Mar-13	69			
Apr-07	64	Apr-13	69			
May-07	64	May-13	69			
Jun-07	64	Jun-13	69			
Jul-07	64	Jul-13	69			
Aug-07	65	Aug-13	69			
Sep-07	63	Sep-13	69			
Oct-07	62	Oct-13	69			
Nov-07	62	Nov-13	69			
Dec-07	62	Dec-13	69			
Jan-08	62	Jan-14	69			
Feb-08	62	Feb-14	69			
Mar-08	62	Mar-14	69			
Apr-08	62	Apr-14	69			
May-08	61	May-14	69			
Jun-08	61	Jun-14	69			
Jul-08	62	Jul-14	69			
Aug-08	61	Aug-14	69			
Sep-08	70	Sep-14	69			
Oct-08	69	Oct-14	69			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 23EN  
Model: Customer Counts

GOF R-Square= 0.462579  
Model:  $62.5763 + 7.82994 / (1 + \exp(-0.343024 * (t - 67.4015)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	67	Nov-14	69			0
Dec-08	66	Dec-14	69			
Jan-09	65	Jan-15	69			
Feb-09	66	Feb-15	69			
Mar-09	66	Mar-15	69			
Apr-09	67	Apr-15	69			
May-09	68	May-15	69			
Jun-09	68	Jun-15	69			
Jul-09	67	Jul-15	69			
Aug-09	67	Aug-15	69			
Sep-09	69	Sep-15	69			
Oct-09	69	Oct-15	69			
Nov-09	72	Nov-15	69			
Dec-09	74	Dec-15	69			
Jan-10	75	Jan-16	69			
Feb-10	75	Feb-16	69			
Mar-10	76	Mar-16	69			
Apr-10	75	Apr-16	69			
May-10	75	May-16	69			
Jun-10	75	Jun-16	69			
Jul-10	75	Jul-16	69			
Aug-10	75	Aug-16	69			
Sep-10	70	Sep-16	69			
Oct-10	69	Oct-16	69			
Nov-10	67	Nov-16	69			
Dec-10	68	Dec-16	69			
Jan-11	68					



**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 23EN  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0.2673 SSE= 4.66E+00  
Par (X) = P1 \* X + P2 X= FO  
Coefficients (with 95% confidence bounds):  
p1 = 0.01811 (-0.01184, 0.04805)  
p2 = 16.68 (11.51, 21.84)

GOF: R-Square= SSE=

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data FO	0	For Monthly Allocation date	HDD
Jan-05	28.66	Jan-11	28.54	2005	233.28	128.18		Jan-05	37.32
Feb-05	26.20	Feb-11	31.93	2006	234.58	118.16		Feb-05	33.43
Mar-05	24.49	Mar-11	24.44	2007	253.91	187.88		Mar-05	29.94
Apr-05	17.60	Apr-11	21.74	2008	209.56	125.18		Apr-05	14.93
May-05	16.63	May-11	16.77	2009	216.12	192.0333		May-05	11.35
Jun-05	15.63	Jun-11	15.21	2010	254.29	203.05		Jun-05	1.40
Jul-05	12.86	Jul-11	12.09	2011	237.85	198.6718		Jul-05	0.19
Aug-05	14.49	Aug-11	14.47	2012	281.55	182.3452		Aug-05	0.00
Sep-05	15.97	Sep-11	15.56	2013	310.62	192.3639		Sep-05	1.30
Oct-05	13.95	Oct-11	16.09	2014	304.91	201.8616		Oct-05	10.35
Nov-05	24.86	Nov-11	20.53	2015	314.67	211.21		Nov-05	18.90
Dec-05	21.92	Dec-11	20.47					Dec-05	32.39
Jan-06	21.73	Jan-12	29.29					Jan-06	27.61
Feb-06	27.52	Feb-12	28.52					Feb-06	33.14
Mar-06	26.49	Mar-12	28.41					Mar-06	25.71
Apr-06	18.13	Apr-12	23.55					Apr-06	14.23
May-06	17.61	May-12	21.89					May-06	7.00
Jun-06	16.34	Jun-12	19.71					Jun-06	1.27
Jul-06	13.95	Jul-12	16.09					Jul-06	0.00
Aug-06	14.98	Aug-12	17.12					Aug-06	0.16
Sep-06	19.83	Sep-12	20.41					Sep-06	2.57
Oct-06	13.40	Oct-12	22.98					Oct-06	11.03
Nov-06	21.39	Nov-12	24.16					Nov-06	15.57
Dec-06	23.21	Dec-12	29.41					Dec-06	24.13
Jan-07	20.05	Jan-13	36.11					Jan-07	30.58
Feb-07	26.68	Feb-13	37.02					Feb-07	37.68
Mar-07	24.86	Mar-13	31.35					Mar-07	26.61
Apr-07	19.70	Apr-13	26.62					Apr-07	18.03
May-07	13.26	May-13	24.54					May-07	5.74
Jun-07	15.73	Jun-13	22.31					Jun-07	1.10
Jul-07	13.58	Jul-13	16.74					Jul-07	0.00
Aug-07	38.54	Aug-13	18.26					Aug-07	0.26
Sep-07	14.64	Sep-13	21.55					Sep-07	1.27
Oct-07	15.18	Oct-13	21.62					Oct-07	6.55
Nov-07	24.98	Nov-13	24.93					Nov-07	22.07
Dec-07	26.68	Dec-13	29.57					Dec-07	32.03
Jan-08	23.42	Jan-14	34.26					Jan-08	31.35
Feb-08	30.09	Feb-14	36.26					Feb-08	31.86
Mar-08	29.50	Mar-14	31.17					Mar-08	25.23
Apr-08	22.97	Apr-14	26.80					Apr-08	13.47
May-08	14.75	May-14	23.35					May-08	7.32
Jun-08	14.56	Jun-14	21.11					Jun-08	0.63
Jul-08	19.45	Jul-14	16.59					Jul-08	0.00
Aug-08	16.36	Aug-14	17.98					Aug-08	0.06
Sep-08	11.01	Sep-14	21.07					Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 23EN  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0.2673 SSE= 4.66E+00  
Par (X) = P1 \* X + P2 X= FO  
Coefficients (with 95% confidence bounds):  
p1 = 0.01811 (-0.01184, 0.04805)  
p2 = 16.68 (11.51, 21.84)

GOF: R-Square= SSE=

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data FO	0	For Monthly Allocation date	HDD
Oct-08	9.39	Oct-14	22.03					Oct-08	12.61
Nov-08	7.46	Nov-14	25.46					Nov-08	22.17
Dec-08	10.61	Dec-14	28.83					Dec-08	29.48
Jan-09	14.18	Jan-15	34.77					Jan-09	40.81
Feb-09	12.71	Feb-15	35.86					Feb-09	32.11
Mar-09	23.23	Mar-15	31.93					Mar-09	27.32
Apr-09	17.27	Apr-15	27.01					Apr-09	15.45
May-09	15.36	May-15	24.50					May-09	6.71
Jun-09	14.13	Jun-15	22.16					Jun-09	2.10
Jul-09	14.71	Jul-15	17.37					Jul-09	0.19
Aug-09	14.69	Aug-15	18.75					Aug-09	0.10
Sep-09	19.55	Sep-15	22.15					Sep-09	3.03
Oct-09	25.75	Oct-15	23.34					Oct-09	12.77
Nov-09	18.89	Nov-15	26.07					Nov-09	15.80
Dec-09	25.66	Dec-15	30.74					Dec-09	31.84
Jan-10	33.30	Jan-16	37.70					Jan-10	35.68
Feb-10	30.23	Feb-16	37.54					Feb-10	31.79
Mar-10	22.34	Mar-16	34.62					Mar-10	19.61
Apr-10	18.90	Apr-16	26.40					Apr-10	11.13
May-10	18.85	May-16	23.94					May-10	3.90
Jun-10	16.85	Jun-16	21.66					Jun-10	0.53
Jul-10	13.58	Jul-16	16.98					Jul-10	0.00
Aug-10	15.60	Aug-16	18.33					Aug-10	0.06
Sep-10	17.58	Sep-16	21.65					Sep-10	1.03
Oct-10	17.03	Oct-16	22.81					Oct-10	9.45
Nov-10	20.70	Nov-16	25.48					Nov-10	20.07
Dec-10	29.32	Dec-16	30.04					Dec-10	33.65
Jan-11	28.50							Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2321  
Model: Customer Counts

GOF R-Square= 0.983855  
Model:  $15.0032 + 30.8846 / (1 + \exp(-0.171874 * (t - 77.6351)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	8	Jan-11	44	2005	12	0
Feb-05	9	Feb-11	44	2006	15	
Mar-05	9	Mar-11	45	2007	17	
Apr-05	9	Apr-11	42	2008	18	
May-05	9	May-11	41	2009	28	
Jun-05	9	Jun-11	44	2010	43	
Jul-05	11	Jul-11	44	2011	41	
Aug-05	11	Aug-11	41	2012	44	
Sep-05	12	Sep-11	41	2013	44	
Oct-05	12	Oct-11	40	2014	44	
Nov-05	12	Nov-11	40	2015	44	
Dec-05	12	Dec-11	41			
Jan-06	12	Jan-12	43			
Feb-06	13	Feb-12	43			
Mar-06	13	Mar-12	44			
Apr-06	13	Apr-12	44			
May-06	14	May-12	44			
Jun-06	15	Jun-12	44			
Jul-06	15	Jul-12	44			
Aug-06	14	Aug-12	44			
Sep-06	13	Sep-12	44			
Oct-06	13	Oct-12	44			
Nov-06	15	Nov-12	44			
Dec-06	15	Dec-12	44			
Jan-07	14	Jan-13	44			
Feb-07	14	Feb-13	44			
Mar-07	15	Mar-13	44			
Apr-07	15	Apr-13	44			
May-07	15	May-13	44			
Jun-07	15	Jun-13	44			
Jul-07	15	Jul-13	44			
Aug-07	17	Aug-13	44			
Sep-07	17	Sep-13	44			
Oct-07	18	Oct-13	44			
Nov-07	18	Nov-13	44			
Dec-07	17	Dec-13	44			
Jan-08	16	Jan-14	44			
Feb-08	17	Feb-14	44			
Mar-08	17	Mar-14	44			
Apr-08	17	Apr-14	44			
May-08	17	May-14	44			
Jun-08	17	Jun-14	44			
Jul-08	17	Jul-14	44			
Aug-08	16	Aug-14	44			
Sep-08	16	Sep-14	44			
Oct-08	16	Oct-14	44			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2321  
Model: Customer Counts

GOF R-Square= 0.983855  
Model:  $15.0032 + 30.8846 / (1 + \exp(-0.171874 * (t - 77.6351)))$   
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	16	Nov-14	44			0
Dec-08	18	Dec-14	44			
Jan-09	19	Jan-15	44			
Feb-09	19	Feb-15	44			
Mar-09	19	Mar-15	44			
Apr-09	19	Apr-15	44			
May-09	23	May-15	44			
Jun-09	25	Jun-15	44			
Jul-09	25	Jul-15	44			
Aug-09	27	Aug-15	44			
Sep-09	31	Sep-15	44			
Oct-09	31	Oct-15	44			
Nov-09	29	Nov-15	44			
Dec-09	28	Dec-15	44			
Jan-10	30	Jan-16	44			
Feb-10	32	Feb-16	44			
Mar-10	35	Mar-16	44			
Apr-10	37	Apr-16	44			
May-10	38	May-16	44			
Jun-10	40	Jun-16	44			
Jul-10	41	Jul-16	44			
Aug-10	38	Aug-16	44			
Sep-10	39	Sep-16	44			
Oct-10	41	Oct-16	44			
Nov-10	42	Nov-16	44			
Dec-10	43	Dec-16	44			
Jan-11	44					

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2321  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0 SSE= 4.25E-02  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 0.7855

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data TimeConst	0	date	For Monthly Allocation HDD
Jan-05	18.81	Jan-11	22.43	2005	186.18	2005		Jan-05	37.32
Feb-05	21.04	Feb-11	24.17	2006	159.54	2006		Feb-05	33.43
Mar-05	19.35	Mar-11	21.05	2007	166.74	2007		Mar-05	29.94
Apr-05	17.33	Apr-11	19.47	2008	172.04	2008		Apr-05	14.93
May-05	11.65	May-11	14.66	2009	173.37	2009		May-05	11.35
Jun-05	19.39	Jun-11	11.89	2010	188.52	2010		Jun-05	1.40
Jul-05	12.69	Jul-11	11.01	2011	192.15	2011		Jul-05	0.19
Aug-05	13.29	Aug-11	10.45	2012	213.95	2012		Aug-05	0.00
Sep-05	12.53	Sep-11	11.47	2013	232.18	2013		Sep-05	1.30
Oct-05	10.42	Oct-11	11.06	2014	236.98	2014		Oct-05	10.35
Nov-05	13.78	Nov-11	16.14	2015	242.12	2015		Nov-05	18.90
Dec-05	15.91	Dec-11	18.34					Dec-05	32.39
Jan-06	18.55	Jan-12	21.09					Jan-06	27.61
Feb-06	15.72	Feb-12	22.94					Feb-06	33.14
Mar-06	18.09	Mar-12	22.04					Mar-06	25.71
Apr-06	16.79	Apr-12	20.35					Apr-06	14.23
May-06	12.78	May-12	15.44					May-06	7.00
Jun-06	10.58	Jun-12	14.18					Jun-06	1.27
Jul-06	8.92	Jul-12	15.37					Jul-06	0.00
Aug-06	9.09	Aug-12	11.75					Aug-06	0.16
Sep-06	10.91	Sep-12	13.39					Sep-06	2.57
Oct-06	10.22	Oct-12	14.31					Oct-06	11.03
Nov-06	11.41	Nov-12	17.94					Nov-06	15.57
Dec-06	16.47	Dec-12	25.16					Dec-06	24.13
Jan-07	17.64	Jan-13	23.08					Jan-07	30.58
Feb-07	19.65	Feb-13	26.33					Feb-07	37.68
Mar-07	23.25	Mar-13	25.90					Mar-07	26.61
Apr-07	16.83	Apr-13	22.62					Apr-07	18.03
May-07	14.47	May-13	16.76					May-07	5.74
Jun-07	12.37	Jun-13	15.28					Jun-07	1.10
Jul-07	9.10	Jul-13	17.61					Jul-07	0.00
Aug-07	7.51	Aug-13	12.77					Aug-07	0.26
Sep-07	9.74	Sep-13	13.85					Sep-07	1.27
Oct-07	8.09	Oct-13	14.45					Oct-07	6.55
Nov-07	12.54	Nov-13	18.98					Nov-07	22.07
Dec-07	15.56	Dec-13	24.55					Dec-07	32.03
Jan-08	18.63	Jan-14	24.47					Jan-08	31.35
Feb-08	20.44	Feb-14	27.28					Feb-08	31.86
Mar-08	17.61	Mar-14	26.19					Mar-08	25.23
Apr-08	16.64	Apr-14	22.91					Apr-08	13.47
May-08	14.05	May-14	17.43					May-08	7.32
Jun-08	12.54	Jun-14	15.61					Jun-08	0.63
Jul-08	8.46	Jul-14	16.40					Jul-08	0.00
Aug-08	10.19	Aug-14	12.84					Aug-08	0.06
Sep-08	9.88	Sep-14	14.23					Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2321  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0 SSE= 4.25E-02  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 0.7855

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data TimeConst	0	For Monthly Allocation date	HDD
Oct-08	10.44	Oct-14	14.63					Oct-08	12.61
Nov-08	15.65	Nov-14	19.45					Nov-08	22.17
Dec-08	17.50	Dec-14	25.54					Dec-08	29.48
Jan-09	19.62	Jan-15	24.14					Jan-09	40.81
Feb-09	20.90	Feb-15	27.21					Feb-09	32.11
Mar-09	16.70	Mar-15	26.24					Mar-09	27.32
Apr-09	19.44	Apr-15	23.35					Apr-09	15.45
May-09	12.53	May-15	17.59					May-09	6.71
Jun-09	11.27	Jun-15	15.98					Jun-09	2.10
Jul-09	9.81	Jul-15	17.51					Jul-09	0.19
Aug-09	8.34	Aug-15	13.25					Aug-09	0.10
Sep-09	9.74	Sep-15	14.72					Sep-09	3.03
Oct-09	11.70	Oct-15	15.41					Oct-09	12.77
Nov-09	12.66	Nov-15	19.99					Nov-09	15.80
Dec-09	20.68	Dec-15	26.73					Dec-09	31.84
Jan-10	23.62	Jan-16	27.07					Jan-10	35.68
Feb-10	25.15	Feb-16	29.46					Feb-10	31.79
Mar-10	22.32	Mar-16	29.43					Mar-10	19.61
Apr-10	16.89	Apr-16	22.12					Apr-10	11.13
May-10	12.27	May-16	16.66					May-10	3.90
Jun-10	10.97	Jun-16	15.14					Jun-10	0.53
Jul-10	11.94	Jul-16	16.58					Jul-10	0.00
Aug-10	11.04	Aug-16	12.55					Aug-10	0.06
Sep-10	11.11	Sep-16	13.94					Sep-10	1.03
Oct-10	11.35	Oct-16	14.59					Oct-10	9.45
Nov-10	13.98	Nov-16	18.94					Nov-10	20.07
Dec-10	17.88	Dec-16	25.32					Dec-10	33.65
Jan-11	22.43							Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3496  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	12	Jan-11	2	2005	10	0
Feb-05	12	Feb-11	3	2006	7	
Mar-05	11	Mar-11	2	2007	7	
Apr-05	11	Apr-11	2	2008	9	
May-05	11	May-11	3	2009	5	
Jun-05	11	Jun-11	3	2010	2	
Jul-05	11	Jul-11	3	2011	5	
Aug-05	11	Aug-11	4	2012	2	
Sep-05	11	Sep-11	5	2013	2	
Oct-05	11	Oct-11	5	2014	2	
Nov-05	10	Nov-11	5	2015	2	
Dec-05	10	Dec-11	5			
Jan-06	10	Jan-12	2			
Feb-06	10	Feb-12	2			
Mar-06	10	Mar-12	2			
Apr-06	10	Apr-12	2			
May-06	10	May-12	2			
Jun-06	10	Jun-12	2			
Jul-06	10	Jul-12	2			
Aug-06	8	Aug-12	2			
Sep-06	7	Sep-12	2			
Oct-06	7	Oct-12	2			
Nov-06	7	Nov-12	2			
Dec-06	7	Dec-12	2			
Jan-07	6	Jan-13	2			
Feb-07	6	Feb-13	2			
Mar-07	6	Mar-13	2			
Apr-07	6	Apr-13	2			
May-07	6	May-13	2			
Jun-07	6	Jun-13	2			
Jul-07	6	Jul-13	2			
Aug-07	6	Aug-13	2			
Sep-07	7	Sep-13	2			
Oct-07	7	Oct-13	2			
Nov-07	7	Nov-13	2			
Dec-07	7	Dec-13	2			
Jan-08	7	Jan-14	2			
Feb-08	8	Feb-14	2			
Mar-08	8	Mar-14	2			
Apr-08	8	Apr-14	2			
May-08	8	May-14	2			
Jun-08	8	Jun-14	2			
Jul-08	8	Jul-14	2			
Aug-08	8	Aug-14	2			
Sep-08	9	Sep-14	2			
Oct-08	9	Oct-14	2			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3496  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	9	Nov-14	2			0
Dec-08	9	Dec-14	2			
Jan-09	8	Jan-15	2			
Feb-09	9	Feb-15	2			
Mar-09	8	Mar-15	2			
Apr-09	9	Apr-15	2			
May-09	8	May-15	2			
Jun-09	8	Jun-15	2			
Jul-09	8	Jul-15	2			
Aug-09	9	Aug-15	2			
Sep-09	8	Sep-15	2			
Oct-09	8	Oct-15	2			
Nov-09	5	Nov-15	2			
Dec-09	5	Dec-15	2			
Jan-10	4	Jan-16	2			
Feb-10	4	Feb-16	2			
Mar-10	4	Mar-16	2			
Apr-10	4	Apr-16	2			
May-10	4	May-16	2			
Jun-10	4	Jun-16	2			
Jul-10	4	Jul-16	2			
Aug-10	2	Aug-16	2			
Sep-10	2	Sep-16	2			
Oct-10	2	Oct-16	2			
Nov-10	2	Nov-16	2			
Dec-10	2	Dec-16	2			
Jan-11	2					



**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3496  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.7233 SSE= 8.07E-02  
Par (X) = P1 \* X + P2 X= FHSTMFQ  
Coefficients (with 95% confidence bounds):  
p1 = -0.001123 (-0.001816 -0.0004291)  
p2 = 1.073 (0.7807, 1.366)

**Slope Model**

GOF: R-Square= 0.6948 SSE= 3.00E-04  
Par (X) = P1 \* X + P2 X= FET  
Coefficients (with 95% confidence bounds):  
p1 = 0.0006142 (0.00020750.001021)  
p2 = -0.292 (-0.5705, -0.01344)

alpha: Jan 0.0211 Feb 0.1283 Mar 0.3426 Apr 0.3591 May 0.1872 Jun 1.1594 Jul 0.7116 Aug -0.0524 Sep -0.3862 Oct -0.6322 Nov -0.1148 Dec -0.2269

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data FHSTMFQ FET		date	For Monthly Allocation HDD
Jan-05	115.68	Jan-11	87.12	2005	632.33	773.6476	716.3244	Jan-05	37.32
Feb-05	112.95	Feb-11	67.38	2006	533.81	815.3507	719.1648	Feb-05	33.43
Mar-05	133.63	Mar-11	69.61	2007	523.78	576.9624	717.8742	Mar-05	29.94
Apr-05	59.96	Apr-11	68.26	2008	789.57	207.9252	703.8553	Apr-05	14.93
May-05	26.23	May-11	29.79	2009	893.71	196.7776	670.2346	May-05	11.35
Jun-05	14.27	Jun-11	19.77	2010	578.07	150.953	657.7883	Jun-05	1.40
Jul-05	5.42	Jul-11	9.48	2011	480.96	467.1277	665.7408	Jul-05	0.19
Aug-05	4.26	Aug-11	8.67	2012	647.27	785.2471	684.8364	Aug-05	0.00
Sep-05	4.70	Sep-11	4.67	2013	642.66	869.2539	697.9501	Sep-05	1.30
Oct-05	9.08	Oct-11	31.18	2014	634.14	859.3866	718.511	Oct-05	10.35
Nov-05	45.71	Nov-11	38.71	2015	671.16	900.3557	735.1096	Nov-05	18.90
Dec-05	100.43	Dec-11	46.32					Dec-05	32.39
Jan-06	93.56	Jan-12	96.52					Jan-06	27.61
Feb-06	85.00	Feb-12	94.26					Feb-06	33.14
Mar-06	111.36	Mar-12	96.17					Mar-06	25.71
Apr-06	61.37	Apr-12	72.84					Apr-06	14.23
May-06	29.46	May-12	48.37					May-06	7.00
Jun-06	12.03	Jun-12	58.05					Jun-06	1.27
Jul-06	3.83	Jul-12	26.66					Jul-06	0.00
Aug-06	4.07	Aug-12	6.73					Aug-06	0.16
Sep-06	6.70	Sep-12	8.45					Sep-06	2.57
Oct-06	15.24	Oct-12	39.04					Oct-06	11.03
Nov-06	41.75	Nov-12	52.58					Nov-06	15.57
Dec-06	69.44	Dec-12	47.59					Dec-06	24.13
Jan-07	76.75	Jan-13	87.14					Jan-07	30.58
Feb-07	117.39	Feb-13	98.41					Feb-07	37.68
Mar-07	102.30	Mar-13	101.93					Mar-07	26.61
Apr-07	60.97	Apr-13	69.29					Apr-07	18.03
May-07	23.02	May-13	49.45					May-07	5.74
Jun-07	9.07	Jun-13	43.17					Jun-07	1.10
Jul-07	4.12	Jul-13	19.71					Jul-07	0.00
Aug-07	2.44	Aug-13	7.42					Aug-07	0.26
Sep-07	9.61	Sep-13	8.17					Sep-07	1.27
Oct-07	14.43	Oct-13	47.27					Oct-07	6.55
Nov-07	35.00	Nov-13	51.34					Nov-07	22.07
Dec-07	68.67	Dec-13	59.35					Dec-07	32.03
Jan-08	112.20	Jan-14	81.87					Jan-08	31.35
Feb-08	115.73	Feb-14	89.61					Feb-08	31.86
Mar-08	122.91	Mar-14	84.04					Mar-08	25.23
Apr-08	96.45	Apr-14	64.08					Apr-08	13.47
May-08	52.63	May-14	44.99					May-08	7.32
Jun-08	43.13	Jun-14	41.68					Jun-08	0.63
Jul-08	30.96	Jul-14	19.50					Jul-08	0.00
Aug-08	23.03	Aug-14	6.40					Aug-08	0.06
Sep-08	8.81	Sep-14	8.57					Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3496  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.7233 SSE= 8.07E-02  
Par (X) = P1 \* X + P2 X= FHSTMFQ  
Coefficients (with 95% confidence bounds):  
p1 = -0.001123 (-0.001816 -0.0004291)  
p2 = 1.073 (0.7807, 1.366)

**Slope Model**

GOF: R-Square= 0.6948 SSE= 3.00E-04  
Par (X) = P1 \* X + P2 X= FET  
Coefficients (with 95% confidence bounds):  
p1 = 0.0006142 (0.00020750.001021)  
p2 = -0.292 (-0.5705, -0.01344)

alpha: Jan 0.0211 Feb 0.1283 Mar 0.3426 Apr 0.3591 May 0.1872 Jun 1.1594 Jul 0.7116 Aug -0.0524 Sep -0.3862 Oct -0.6322 Nov -0.1148 Dec -0.2269

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Da	Economic Data FHSTMFQ FET	date	For Monthly Allocation HDD
Oct-08	16.00	Oct-14	59.42				Oct-08	12.61
Nov-08	65.33	Nov-14	61.13				Nov-08	22.17
Dec-08	102.38	Dec-14	72.85				Dec-08	29.48
Jan-09	157.73	Jan-15	92.41				Jan-09	40.81
Feb-09	103.54	Feb-15	99.45				Feb-09	32.11
Mar-09	89.88	Mar-15	98.21				Mar-09	27.32
Apr-09	90.29	Apr-15	71.78				Apr-09	15.45
May-09	47.34	May-15	49.72				May-09	6.71
Jun-09	134.70	Jun-15	49.69				Jun-09	2.10
Jul-09	96.68	Jul-15	22.90				Jul-09	0.19
Aug-09	16.21	Aug-15	7.16				Aug-09	0.10
Sep-09	16.60	Sep-15	8.77				Sep-09	3.03
Oct-09	21.03	Oct-15	50.84				Oct-09	12.77
Nov-09	102.55	Nov-15	57.52				Nov-09	15.80
Dec-09	17.16	Dec-15	62.72				Dec-09	31.84
Jan-10	103.72	Jan-16	150.02				Jan-10	35.68
Feb-10	110.82	Feb-16	155.88				Feb-10	31.79
Mar-10	121.46	Mar-16	159.41				Mar-10	19.61
Apr-10	55.55	Apr-16	39.18				Apr-10	11.13
May-10	43.88	May-16	27.13				May-10	3.90
Jun-10	25.62	Jun-16	27.15				Jun-10	0.53
Jul-10	8.84	Jul-16	12.68				Jul-10	0.00
Aug-10	16.86	Aug-16	3.91				Aug-10	0.06
Sep-10	11.60	Sep-16	4.79				Sep-10	1.03
Oct-10	14.43	Oct-16	27.74				Oct-10	9.45
Nov-10	33.85	Nov-16	31.38				Nov-10	20.07
Dec-10	31.45	Dec-16	34.22				Dec-10	33.65
Jan-11	87.82						Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 34EN  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monhhtly Customer Counts		Forecast Monhhtly Customer Counts	Year	Year End Customers	Economic Data
	date					
Jan-05	27	Jan-11	22	2005	24	
Feb-05	27	Feb-11	22	2006	24	
Mar-05	28	Mar-11	25	2007	28	
Apr-05	28	Apr-11	25	2008	22	
May-05	27	May-11	25	2009	21	
Jun-05	27	Jun-11	25	2010	24	
Jul-05	27	Jul-11	25	2011	27	
Aug-05	27	Aug-11	26	2012	24	
Sep-05	23	Sep-11	27	2013	24	
Oct-05	23	Oct-11	27	2014	24	
Nov-05	24	Nov-11	27	2015	24	
Dec-05	24	Dec-11	27			
Jan-06	25	Jan-12	24			
Feb-06	25	Feb-12	24			
Mar-06	24	Mar-12	24			
Apr-06	24	Apr-12	24			
May-06	24	May-12	24			
Jun-06	24	Jun-12	24			
Jul-06	24	Jul-12	24			
Aug-06	23	Aug-12	24			
Sep-06	25	Sep-12	24			
Oct-06	24	Oct-12	24			
Nov-06	24	Nov-12	24			
Dec-06	24	Dec-12	24			
Jan-07	26	Jan-13	24			
Feb-07	26	Feb-13	24			
Mar-07	26	Mar-13	24			
Apr-07	26	Apr-13	24			
May-07	26	May-13	24			
Jun-07	27	Jun-13	24			
Jul-07	27	Jul-13	24			
Aug-07	27	Aug-13	24			
Sep-07	26	Sep-13	24			
Oct-07	26	Oct-13	24			
Nov-07	28	Nov-13	24			
Dec-07	28	Dec-13	24			
Jan-08	29	Jan-14	24			
Feb-08	29	Feb-14	24			
Mar-08	29	Mar-14	24			
Apr-08	29	Apr-14	24			
May-08	28	May-14	24			
Jun-08	28	Jun-14	24			
Jul-08	28	Jul-14	24			
Aug-08	28	Aug-14	24			
Sep-08	22	Sep-14	24			
Oct-08	22	Oct-14	24			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 34EN  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monhthly Customer Counts	date	Forecast Monhthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	22	Nov-14	24			0
Dec-08	22	Dec-14	24			
Jan-09	22	Jan-15	24			
Feb-09	22	Feb-15	24			
Mar-09	22	Mar-15	24			
Apr-09	22	Apr-15	24			
May-09	22	May-15	24			
Jun-09	22	Jun-15	24			
Jul-09	22	Jul-15	24			
Aug-09	22	Aug-15	24			
Sep-09	19	Sep-15	24			
Oct-09	19	Oct-15	24			
Nov-09	21	Nov-15	24			
Dec-09	21	Dec-15	24			
Jan-10	22	Jan-16	24			
Feb-10	22	Feb-16	24			
Mar-10	22	Mar-16	24			
Apr-10	22	Apr-16	24			
May-10	22	May-16	24			
Jun-10	22	Jun-16	24			
Jul-10	22	Jul-16	24			
Aug-10	22	Aug-16	24			
Sep-10	23	Sep-16	24			
Oct-10	23	Oct-16	24			
Nov-10	24	Nov-16	24			
Dec-10	24	Dec-16	24			
Jan-11	22					

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 34EN  
Model: Use per Customer (Dth/Customer/Day)

Base Model

GOF: R-Square= 0.1685 SSE= 1.21E+02  
Par (X) = P1 \* X + P2 X= NGdivFO  
Coefficients (with 95% confidence bounds):  
p1 = -114.7 (-369.2, 139.8)  
p2 = 33.09 (7.189, 58.98)

Slope Model

GOF: R-Square= 0.5832 SSE= 3.87E-01  
Par (X) = P1 \* X + P2 X= FET  
Coefficients (with 95% confidence bounds):  
p1 = -0.0173 (-0.03191, -0.002688)  
p2 = 15.66 (5.648, 25.66)

alpha: Jan -0.0563 Feb 0.1048 Mar 0.0831 Apr 0.1648 May -0.1914 Jun 0.02 Jul 0.0446 Aug -0.0183 Sep -0.0336 Oct -0.2717 Nov -0.1254 Dec -0.0115

date	Actual Use		Forecasted		Year	Annual Use			For Monthly Allocation	
	Per	date	Use Per	date		Per	Economic Data	FET	date	HDD
	Dth/MC/Day		Dth/MC/Day			Dth/MC/Day	NGdivFO	FET		
Jan-05	149.15	Jan-11	191.82		2005	871.12	0.140014	716.3244	Jan-05	37.32
Feb-05	147.67	Feb-11	229.42		2006	748.81	0.086353	719.1648	Feb-05	33.43
Mar-05	117.22	Mar-11	155.11		2007	811.70	0.13582	717.8742	Mar-05	29.94
Apr-05	69.31	Apr-11	143.71		2008	964.01	0.085558	703.853	Apr-05	14.93
May-05	49.78	May-11	64.30		2009	917.32	0.085392	670.2346	May-05	11.35
Jun-05	20.97	Jun-11	17.32		2010	988.75	0.081579	657.7883	Jun-05	1.40
Jul-05	16.52	Jul-11	16.48		2011	1,251.04	0.088525	665.7408	Jul-05	0.19
Aug-05	17.03	Aug-11	19.58		2012	1,040.32	0.087689	684.8364	Aug-05	0.00
Sep-05	25.46	Sep-11	26.10		2013	970.02	0.086545	697.9501	Sep-05	1.30
Oct-05	48.48	Oct-11	50.53		2014	823.17	0.084351	718.511	Oct-05	10.35
Nov-05	81.46	Nov-11	172.61		2015	737.53	0.080889	735.1096	Nov-05	18.90
Dec-05	128.07	Dec-11	164.05						Dec-05	32.39
Jan-06	116.16	Jan-12	157.31						Jan-06	27.61
Feb-06	131.19	Feb-12	180.95						Feb-06	33.14
Mar-06	102.14	Mar-12	140.13						Mar-06	25.71
Apr-06	67.11	Apr-12	105.45						Apr-06	14.23
May-06	36.52	May-12	49.95						May-06	7.00
Jun-06	19.27	Jun-12	23.28						Jun-06	1.27
Jul-06	15.99	Jul-12	16.83						Jul-06	0.00
Aug-06	17.46	Aug-12	18.77						Aug-06	0.16
Sep-06	23.89	Sep-12	23.64						Sep-06	2.57
Oct-06	31.19	Oct-12	48.66						Oct-06	11.03
Nov-06	84.07	Nov-12	108.25						Nov-06	15.57
Dec-06	103.82	Dec-12	167.10						Dec-06	24.13
Jan-07	101.42	Jan-13	145.56						Jan-07	30.58
Feb-07	160.76	Feb-13	170.78						Feb-07	37.68
Mar-07	138.17	Mar-13	117.15						Mar-07	26.61
Apr-07	79.96	Apr-13	85.01						Apr-07	18.03
May-07	18.13	May-13	52.06						May-07	5.74
Jun-07	18.09	Jun-13	20.55						Jun-07	1.10
Jul-07	18.38	Jul-13	14.67						Jul-07	0.00
Aug-07	18.34	Aug-13	16.87						Aug-07	0.26
Sep-07	18.71	Sep-13	22.41						Sep-07	1.27
Oct-07	31.97	Oct-13	45.02						Oct-07	6.55
Nov-07	75.18	Nov-13	111.91						Nov-07	22.07
Dec-07	132.59	Dec-13	168.04						Dec-07	32.03
Jan-08	137.73	Jan-14	126.29						Jan-08	31.35
Feb-08	157.86	Feb-14	147.19						Feb-08	31.86
Mar-08	129.07	Mar-14	104.75						Mar-08	25.23
Apr-08	115.37	Apr-14	80.13						Apr-08	13.47
May-08	58.06	May-14	41.49						May-08	7.32
Jun-08	60.25	Jun-14	15.78						Jun-08	0.63
Jul-08	37.54	Jul-14	12.29						Jul-08	0.00
Aug-08	39.68	Aug-14	14.05						Aug-08	0.06
Sep-08	64.81	Sep-14	18.78						Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 34EN  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= 0.1685 SSE= 1.21E+02  
Par (X) = P1 \* X + P2 X= NGdivFO  
Coefficients (with 95% confidence bounds):  
p1 = -114.7 (-369.2, 139.8)  
p2 = 33.09 (7.189, 58.98)

**Slope Model**

GOF: R-Square= 0.5832 SSE= 3.87E-01  
Par (X) = P1 \* X + P2 X= FET  
Coefficients (with 95% confidence bounds):  
p1 = -0.0173 (-0.03191, -0.002688)  
p2 = 15.66 (5.648, 25.66)

alpha: Jan -0.0563 Feb 0.1048 Mar 0.0831 Apr 0.1648 May -0.1914 Jun 0.02 Jul 0.0446 Aug -0.0183 Sep -0.0336 Oct -0.2717 Nov -0.1254 Dec -0.0115

date	Actual Use		Forecasted		Year	Annual Use		Economic Data		For Monthly Allocation	
	Per	Dth/MC/Day date	Use Per	Dth/MC/Day		Per	Dth/MC/Day	NGdivFO	FET	date	HDD
Oct-08	32.91	Oct-14	36.90							Oct-08	12.61
Nov-08	40.43	Nov-14	96.81							Nov-08	22.17
Dec-08	90.30	Dec-14	128.70							Dec-08	29.48
Jan-09	141.08	Jan-15	111.21							Jan-09	40.81
Feb-09	150.54	Feb-15	130.90							Feb-09	32.11
Mar-09	159.79	Mar-15	93.75							Mar-09	27.32
Apr-09	137.00	Apr-15	70.45							Apr-09	15.45
May-09	25.18	May-15	37.33							May-09	6.71
Jun-09	26.13	Jun-15	15.92							Jun-09	2.10
Jul-09	16.28	Jul-15	11.32							Jul-09	0.19
Aug-09	17.21	Aug-15	12.85							Aug-09	0.10
Sep-09	25.57	Sep-15	17.27							Sep-09	3.03
Oct-09	53.67	Oct-15	33.92							Oct-09	12.77
Nov-09	55.20	Nov-15	82.66							Nov-09	15.80
Dec-09	109.66	Dec-15	119.95							Dec-09	31.84
Jan-10	144.06	Jan-16	130.57							Jan-10	35.68
Feb-10	164.91	Feb-16	148.32							Feb-10	31.79
Mar-10	87.65	Mar-16	109.86							Mar-10	19.61
Apr-10	54.93	Apr-16	54.36							Apr-10	11.13
May-10	44.52	May-16	28.73							May-10	3.90
Jun-10	22.18	Jun-16	12.59							Jun-10	0.53
Jul-10	22.06	Jul-16	8.69							Jul-10	0.00
Aug-10	22.22	Aug-16	9.87							Aug-10	0.06
Sep-10	25.32	Sep-16	13.91							Sep-10	1.03
Oct-10	50.05	Oct-16	26.24							Oct-10	9.45
Nov-10	116.35	Nov-16	63.66							Nov-10	20.07
Dec-10	234.50	Dec-16	92.02							Dec-10	33.65
Jan-11	229.80									Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3421  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	-	Jan-11	5	2005	1	0
Feb-05	-	Feb-11	5	2006	1	
Mar-05	-	Mar-11	5	2007	1	
Apr-05	-	Apr-11	5	2008	1	
May-05	1	May-11	5	2009	4	
Jun-05	1	Jun-11	5	2010	5	
Jul-05	1	Jul-11	5	2011	3	
Aug-05	1	Aug-11	3	2012	5	
Sep-05	1	Sep-11	3	2013	5	
Oct-05	1	Oct-11	3	2014	5	
Nov-05	1	Nov-11	3	2015	5	
Dec-05	1	Dec-11	3			
Jan-06	1	Jan-12	5			
Feb-06	1	Feb-12	5			
Mar-06	1	Mar-12	5			
Apr-06	1	Apr-12	5			
May-06	1	May-12	5			
Jun-06	1	Jun-12	5			
Jul-06	1	Jul-12	5			
Aug-06	1	Aug-12	5			
Sep-06	1	Sep-12	5			
Oct-06	1	Oct-12	5			
Nov-06	1	Nov-12	5			
Dec-06	1	Dec-12	5			
Jan-07	1	Jan-13	5			
Feb-07	1	Feb-13	5			
Mar-07	1	Mar-13	5			
Apr-07	1	Apr-13	5			
May-07	1	May-13	5			
Jun-07	1	Jun-13	5			
Jul-07	1	Jul-13	5			
Aug-07	1	Aug-13	5			
Sep-07	1	Sep-13	5			
Oct-07	1	Oct-13	5			
Nov-07	1	Nov-13	5			
Dec-07	1	Dec-13	5			
Jan-08	1	Jan-14	5			
Feb-08	1	Feb-14	5			
Mar-08	1	Mar-14	5			
Apr-08	1	Apr-14	5			
May-08	1	May-14	5			
Jun-08	1	Jun-14	5			
Jul-08	1	Jul-14	5			
Aug-08	1	Aug-14	5			
Sep-08	1	Sep-14	5			
Oct-08	1	Oct-14	5			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3421  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	1	Nov-14	5			0
Dec-08	1	Dec-14	5			
Jan-09	1	Jan-15	5			
Feb-09	2	Feb-15	5			
Mar-09	2	Mar-15	5			
Apr-09	1	Apr-15	5			
May-09	2	May-15	5			
Jun-09	2	Jun-15	5			
Jul-09	2	Jul-15	5			
Aug-09	2	Aug-15	5			
Sep-09	2	Sep-15	5			
Oct-09	3	Oct-15	5			
Nov-09	4	Nov-15	5			
Dec-09	4	Dec-15	5			
Jan-10	4	Jan-16	5			
Feb-10	4	Feb-16	5			
Mar-10	4	Mar-16	5			
Apr-10	4	Apr-16	5			
May-10	4	May-16	5			
Jun-10	4	Jun-16	5			
Jul-10	4	Jul-16	5			
Aug-10	5	Aug-16	5			
Sep-10	5	Sep-16	5			
Oct-10	5	Oct-16	5			
Nov-10	5	Nov-16	5			
Dec-10	5	Dec-16	5			
Jan-11	5					



**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3421  
Model: Use per Customer (Dth/Customer/Day)

Base Model

GOF: R-Square= n/a SSE= 1.17E+00  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 0.2799

Slope Model

GOF: R-Square= 0.6431 SSE= 1.93E-03  
Par (X) = P1 \* X + P2 X= FRTFSQ  
Coefficients (with 95% confidence bounds):  
p1 = 0.04351 (0.01113, 0.07589)  
p2 = -0.9143 (-1.661, -0.1678)

alpha: Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
-0.1355 -0.2599 -0.1772 -0.0646 1.0332 2.2884 1.1065 -0.4785 -0.6324 -0.7527 -0.3571 0.1188

date	Actual Use		Forecasted		Year	Annual			For Monthly Allocation	
	Per	date	Use Per	Dth/MC/Day		Use Per	Economic Data		date	HDD
	Dth/MC/Day		Dth/MC/Day			Dth/MC/Da	TimeConst	FRTFSQ		
Jan-05	-	Jan-11	70.77		2005	227.22	2005	23.44385	Jan-05	37.32
Feb-05	-	Feb-11	107.20		2006	608.16	2006	24.33336	Feb-05	33.43
Mar-05	-	Mar-11	74.83		2007	442.45	2007	24.57284	Mar-05	29.94
Apr-05	-	Apr-11	56.93		2008	389.65	2008	23.44826	Apr-05	14.93
May-05	67.32	May-11	24.90		2009	320.19	2009	22.11386	May-05	11.35
Jun-05	16.03	Jun-11	13.44		2010	450.55	2010	22.95631	Jun-05	1.40
Jul-05	3.00	Jul-11	13.72		2011	524.51	2011	24.09252	Jul-05	0.19
Aug-05	0.10	Aug-11	15.33		2012	793.81	2012	24.27346	Aug-05	0.00
Sep-05	-	Sep-11	14.31		2013	712.03	2013	24.31277	Sep-05	1.30
Oct-05	0.16	Oct-11	46.73		2014	568.09	2014	24.43596	Oct-05	10.35
Nov-05	31.80	Nov-11	34.14		2015	558.81	2015	24.72369	Nov-05	18.90
Dec-05	108.81	Dec-11	52.21						Dec-05	32.39
Jan-06	146.00	Jan-12	107.27						Jan-06	27.61
Feb-06	93.39	Feb-12	128.24						Feb-06	33.14
Mar-06	125.32	Mar-12	105.84						Mar-06	25.71
Apr-06	91.13	Apr-12	74.48						Apr-06	14.23
May-06	37.42	May-12	62.17						May-06	7.00
Jun-06	21.30	Jun-12	16.41						Jun-06	1.27
Jul-06	-	Jul-12	15.20						Jul-06	0.00
Aug-06	-	Aug-12	10.96						Aug-06	0.16
Sep-06	0.20	Sep-12	16.31						Sep-06	2.57
Oct-06	-	Oct-12	33.98						Oct-06	11.03
Nov-06	32.13	Nov-12	46.30						Nov-06	15.57
Dec-06	61.26	Dec-12	176.65						Dec-06	24.13
Jan-07	68.42	Jan-13	105.86						Jan-07	30.58
Feb-07	117.61	Feb-13	128.73						Feb-07	37.68
Mar-07	99.48	Mar-13	102.15						Mar-07	26.61
Apr-07	50.03	Apr-13	84.21						Apr-07	18.03
May-07	27.52	May-13	48.60						May-07	5.74
Jun-07	2.40	Jun-13	18.75						Jun-07	1.10
Jul-07	0.58	Jul-13	17.59						Jul-07	0.00
Aug-07	0.16	Aug-13	11.18						Aug-07	0.26
Sep-07	0.10	Sep-13	16.77						Sep-07	1.27
Oct-07	-	Oct-13	36.37						Oct-07	6.55
Nov-07	13.57	Nov-13	42.97						Nov-07	22.07
Dec-07	62.58	Dec-13	98.85						Dec-07	32.03
Jan-08	85.06	Jan-14	80.25						Jan-08	31.35
Feb-08	74.76	Feb-14	106.39						Feb-08	31.86
Mar-08	52.84	Mar-14	83.50						Mar-08	25.23
Apr-08	48.03	Apr-14	62.18						Apr-08	13.47
May-08	24.35	May-14	38.66						May-08	7.32
Jun-08	7.07	Jun-14	14.88						Jun-08	0.63
Jul-08	-	Jul-14	13.78						Jul-08	0.00
Aug-08	-	Aug-14	9.00						Aug-08	0.06
Sep-08	-	Sep-14	11.89						Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 3421  
Model: Use per Customer (Dth/Customer/Day)

**Base Model**

GOF: R-Square= n/a SSE= 1.17E+00  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 0.2799

**Slope Model**

GOF: R-Square= 0.6431 SSE= 1.93E-03  
Par (X) = P1 \* X + P2 X= FRTFSQ  
Coefficients (with 95% confidence bounds):  
p1 = 0.04351 (0.01113, 0.07589)  
p2 = -0.9143 (-1.661, -0.1678)

alpha: Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec  
-0.1355 -0.2599 -0.1772 -0.0646 1.0332 2.2884 1.1065 -0.4785 -0.6324 -0.7527 -0.3571 0.1188

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data TimeConst FRTFSQ	date	For Monthly Allocation HDD
Oct-08	11.29	Oct-14	33.56				Oct-08	12.61
Nov-08	32.47	Nov-14	31.02				Nov-08	22.17
Dec-08	53.77	Dec-14	82.99				Dec-08	29.48
Jan-09	70.90	Jan-15	79.04				Jan-09	40.81
Feb-09	46.77	Feb-15	99.56				Feb-09	32.11
Mar-09	35.65	Mar-15	78.80				Mar-09	27.32
Apr-09	13.27	Apr-15	59.80				Apr-09	15.45
May-09	34.69	May-15	39.90				May-09	6.71
Jun-09	1.12	Jun-15	13.61				Jun-09	2.10
Jul-09	0.33	Jul-15	12.63				Jul-09	0.19
Aug-09	22.37	Aug-15	8.43				Aug-09	0.10
Sep-09	6.94	Sep-15	12.09				Sep-09	3.03
Oct-09	6.01	Oct-15	28.45				Oct-09	12.77
Nov-09	8.95	Nov-15	32.22				Nov-09	15.80
Dec-09	73.19	Dec-15	94.28				Dec-09	31.84
Jan-10	101.30	Jan-16	124.82				Jan-10	35.68
Feb-10	83.65	Feb-16	151.80				Feb-10	31.79
Mar-10	59.95	Mar-16	124.43				Mar-10	19.61
Apr-10	54.50	Apr-16	40.15				Apr-10	11.13
May-10	27.63	May-16	26.78				May-10	3.90
Jun-10	8.02	Jun-16	9.16				Jun-10	0.53
Jul-10	5.17	Jul-16	8.59				Jul-10	0.00
Aug-10	5.60	Aug-16	5.66				Aug-10	0.06
Sep-10	12.30	Sep-16	8.12				Sep-10	1.03
Oct-10	10.07	Oct-16	19.10				Oct-10	9.45
Nov-10	30.20	Nov-16	21.62				Nov-10	20.07
Dec-10	52.15	Dec-16	63.27				Dec-10	33.65
Jan-11	71.35						Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2496  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	15	Jan-11	7	2005	20	0
Feb-05	15	Feb-11	7	2006	16	
Mar-05	16	Mar-11	7	2007	10	
Apr-05	15	Apr-11	7	2008	13	
May-05	15	May-11	7	2009	8	
Jun-05	15	Jun-11	7	2010	6	
Jul-05	15	Jul-11	7	2011	6	
Aug-05	16	Aug-11	8	2012	6	
Sep-05	17	Sep-11	7	2013	6	
Oct-05	17	Oct-11	7	2014	6	
Nov-05	17	Nov-11	6	2015	6	
Dec-05	20	Dec-11	6			
Jan-06	19	Jan-12	6			
Feb-06	19	Feb-12	6			
Mar-06	18	Mar-12	6			
Apr-06	18	Apr-12	6			
May-06	17	May-12	6			
Jun-06	15	Jun-12	6			
Jul-06	15	Jul-12	6			
Aug-06	16	Aug-12	6			
Sep-06	15	Sep-12	6			
Oct-06	15	Oct-12	6			
Nov-06	16	Nov-12	6			
Dec-06	16	Dec-12	6			
Jan-07	16	Jan-13	6			
Feb-07	15	Feb-13	6			
Mar-07	16	Mar-13	6			
Apr-07	16	Apr-13	6			
May-07	16	May-13	6			
Jun-07	15	Jun-13	6			
Jul-07	15	Jul-13	6			
Aug-07	11	Aug-13	6			
Sep-07	12	Sep-13	6			
Oct-07	11	Oct-13	6			
Nov-07	10	Nov-13	6			
Dec-07	10	Dec-13	6			
Jan-08	10	Jan-14	6			
Feb-08	10	Feb-14	6			
Mar-08	10	Mar-14	6			
Apr-08	10	Apr-14	6			
May-08	10	May-14	6			
Jun-08	10	Jun-14	6			
Jul-08	10	Jul-14	6			
Aug-08	12	Aug-14	6			
Sep-08	12	Sep-14	6			
Oct-08	14	Oct-14	6			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2496  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	13	Nov-14	6			0
Dec-08	13	Dec-14	6			
Jan-09	11	Jan-15	6			
Feb-09	10	Feb-15	6			
Mar-09	9	Mar-15	6			
Apr-09	9	Apr-15	6			
May-09	8	May-15	6			
Jun-09	9	Jun-15	6			
Jul-09	10	Jul-15	6			
Aug-09	8	Aug-15	6			
Sep-09	8	Sep-15	6			
Oct-09	8	Oct-15	6			
Nov-09	8	Nov-15	6			
Dec-09	8	Dec-15	6			
Jan-10	6	Jan-16	6			
Feb-10	6	Feb-16	6			
Mar-10	6	Mar-16	6			
Apr-10	5	Apr-16	6			
May-10	7	May-16	6			
Jun-10	8	Jun-16	6			
Jul-10	8	Jul-16	6			
Aug-10	8	Aug-16	6			
Sep-10	8	Sep-16	6			
Oct-10	8	Oct-16	6			
Nov-10	6	Nov-16	6			
Dec-10	6	Dec-16	6			
Jan-11	6					

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2496  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0.9481 SSE= 2.20E-02  
Par (X) = P1 \* X + P2 X= PopXDisPersInc  
Coefficients (with 95% confidence bounds):  
p1 = 0.0001799 (0.0001379 0.000222)  
p2 = -11.38 (-14.95, -7.807)

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data PopXDisPe	0	date	For Monthly Allocation HDD
Jan-05	75.65	Jan-11	161.62	2005	794.30	81154.71		Jan-05	37.32
Feb-05	80.94	Feb-11	96.14	2006	810.91	82964.04		Feb-05	33.43
Mar-05	77.46	Mar-11	110.94	2007	860.56	83321.77		Mar-05	29.94
Apr-05	73.97	Apr-11	81.83	2008	890.48	83791.49		Apr-05	14.93
May-05	64.37	May-11	66.06	2009	1,017.55	86405.94		May-05	11.35
Jun-05	60.88	Jun-11	60.39	2010	1,009.89	86829.92		Jun-05	1.40
Jul-05	48.17	Jul-11	56.27	2011	950.56	87467.69		Jul-05	0.19
Aug-05	51.00	Aug-11	41.45	2012	972.96	87037.66		Aug-05	0.00
Sep-05	60.02	Sep-11	61.46	2013	1,007.68	87287.62		Sep-05	1.30
Oct-05	58.28	Oct-11	52.77	2014	988.34	86944.72		Oct-05	10.35
Nov-05	69.31	Nov-11	80.44	2015	994.48	87031.33		Nov-05	18.90
Dec-05	74.24	Dec-11	81.19					Dec-05	32.39
Jan-06	58.73	Jan-12	135.43					Jan-06	27.61
Feb-06	90.90	Feb-12	108.33					Feb-06	33.14
Mar-06	75.36	Mar-12	82.70					Mar-06	25.71
Apr-06	61.81	Apr-12	86.90					Apr-06	14.23
May-06	52.64	May-12	65.97					May-06	7.00
Jun-06	79.33	Jun-12	78.62					Jun-06	1.27
Jul-06	52.66	Jul-12	75.22					Jul-06	0.00
Aug-06	53.34	Aug-12	63.38					Aug-06	0.16
Sep-06	70.68	Sep-12	63.04					Sep-06	2.57
Oct-06	63.35	Oct-12	48.79					Oct-06	11.03
Nov-06	69.73	Nov-12	66.64					Nov-06	15.57
Dec-06	82.39	Dec-12	97.96					Dec-06	24.13
Jan-07	76.64	Jan-13	151.30					Jan-07	30.58
Feb-07	130.35	Feb-13	106.60					Feb-07	37.68
Mar-07	91.77	Mar-13	97.76					Mar-07	26.61
Apr-07	83.39	Apr-13	84.31					Apr-07	18.03
May-07	68.15	May-13	58.14					May-07	5.74
Jun-07	64.08	Jun-13	77.99					Jun-07	1.10
Jul-07	44.54	Jul-13	74.34					Jul-07	0.00
Aug-07	50.84	Aug-13	62.63					Aug-07	0.26
Sep-07	66.37	Sep-13	64.92					Sep-07	1.27
Oct-07	59.03	Oct-13	51.20					Oct-07	6.55
Nov-07	56.94	Nov-13	68.22					Nov-07	22.07
Dec-07	68.47	Dec-13	110.26					Dec-07	32.03
Jan-08	78.91	Jan-14	152.18					Jan-08	31.35
Feb-08	99.69	Feb-14	106.62					Feb-08	31.86
Mar-08	75.34	Mar-14	99.00					Mar-08	25.23
Apr-08	62.45	Apr-14	85.76					Apr-08	13.47
May-08	57.74	May-14	64.57					May-08	7.32
Jun-08	55.32	Jun-14	73.33					Jun-08	0.63
Jul-08	54.10	Jul-14	69.53					Jul-08	0.00
Aug-08	51.56	Aug-14	58.57					Aug-08	0.06
Sep-08	83.93	Sep-14	64.18					Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2496  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0.9481 SSE= 2.20E-02  
Par (X) = P1 \* X + P2 X= PopXDisPersInc  
Coefficients (with 95% confidence bounds):  
p1 = 0.0001799 (0.0001379 0.000222)  
p2 = -11.38 (-14.95, -7.807)

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data PopXDisPe	0	For Monthly Allocation date	HDD
Oct-08	85.52	Oct-14	51.82					Oct-08	12.61
Nov-08	99.35	Nov-14	69.11					Nov-08	22.17
Dec-08	86.57	Dec-14	93.65					Dec-08	29.48
Jan-09	67.12	Jan-15	146.77					Jan-09	40.81
Feb-09	145.88	Feb-15	108.91					Feb-09	32.11
Mar-09	54.56	Mar-15	93.42					Mar-09	27.32
Apr-09	77.46	Apr-15	85.99					Apr-09	15.45
May-09	124.48	May-15	63.17					May-09	6.71
Jun-09	85.35	Jun-15	76.93					Jun-09	2.10
Jul-09	88.17	Jul-15	73.30					Jul-09	0.19
Aug-09	85.32	Aug-15	61.76					Aug-09	0.10
Sep-09	78.44	Sep-15	64.28					Sep-09	3.03
Oct-09	58.51	Oct-15	50.78					Oct-09	12.77
Nov-09	71.06	Nov-15	68.24					Nov-09	15.80
Dec-09	81.22	Dec-15	100.92					Dec-09	31.84
Jan-10	153.07	Jan-16	128.31					Jan-10	35.68
Feb-10	103.12	Feb-16	91.92					Feb-10	31.79
Mar-10	90.28	Mar-16	81.67					Mar-10	19.61
Apr-10	94.54	Apr-16	94.89					Apr-10	11.13
May-10	24.70	May-16	69.71					May-10	3.90
Jun-10	75.40	Jun-16	84.90					Jun-10	0.53
Jul-10	72.67	Jul-16	80.89					Jul-10	0.00
Aug-10	62.44	Aug-16	68.15					Aug-10	0.06
Sep-10	53.04	Sep-16	70.93					Sep-10	1.03
Oct-10	36.20	Oct-16	56.04					Oct-10	9.45
Nov-10	61.94	Nov-16	75.30					Nov-10	20.07
Dec-10	182.47	Dec-16	111.37					Dec-10	33.65
Jan-11	162.88							Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 24EN  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	41	Jan-11	64	2005	39	0
Feb-05	41	Feb-11	64	2006	46	
Mar-05	40	Mar-11	64	2007	49	
Apr-05	40	Apr-11	65	2008	49	
May-05	41	May-11	66	2009	44	
Jun-05	41	Jun-11	66	2010	50	
Jul-05	41	Jul-11	66	2011	65	
Aug-05	41	Aug-11	66	2012	50	
Sep-05	40	Sep-11	64	2013	50	
Oct-05	40	Oct-11	64	2014	50	
Nov-05	40	Nov-11	65	2015	50	
Dec-05	39	Dec-11	65			
Jan-06	40	Jan-12	50			
Feb-06	40	Feb-12	50			
Mar-06	41	Mar-12	50			
Apr-06	41	Apr-12	50			
May-06	40	May-12	50			
Jun-06	43	Jun-12	50			
Jul-06	41	Jul-12	50			
Aug-06	43	Aug-12	50			
Sep-06	46	Sep-12	50			
Oct-06	46	Oct-12	50			
Nov-06	46	Nov-12	50			
Dec-06	46	Dec-12	50			
Jan-07	46	Jan-13	50			
Feb-07	47	Feb-13	50			
Mar-07	46	Mar-13	50			
Apr-07	46	Apr-13	50			
May-07	47	May-13	50			
Jun-07	49	Jun-13	50			
Jul-07	49	Jul-13	50			
Aug-07	49	Aug-13	50			
Sep-07	53	Sep-13	50			
Oct-07	44	Oct-13	50			
Nov-07	47	Nov-13	50			
Dec-07	49	Dec-13	50			
Jan-08	53	Jan-14	50			
Feb-08	54	Feb-14	50			
Mar-08	53	Mar-14	50			
Apr-08	54	Apr-14	50			
May-08	54	May-14	50			
Jun-08	54	Jun-14	50			
Jul-08	55	Jul-14	50			
Aug-08	55	Aug-14	50			
Sep-08	49	Sep-14	50			
Oct-08	49	Oct-14	50			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 24EN  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	49	Nov-14	50			0
Dec-08	49	Dec-14	50			
Jan-09	47	Jan-15	50			
Feb-09	48	Feb-15	50			
Mar-09	48	Mar-15	50			
Apr-09	49	Apr-15	50			
May-09	49	May-15	50			
Jun-09	48	Jun-15	50			
Jul-09	47	Jul-15	50			
Aug-09	48	Aug-15	50			
Sep-09	44	Sep-15	50			
Oct-09	44	Oct-15	50			
Nov-09	45	Nov-15	50			
Dec-09	44	Dec-15	50			
Jan-10	44	Jan-16	50			
Feb-10	46	Feb-16	50			
Mar-10	46	Mar-16	50			
Apr-10	48	Apr-16	50			
May-10	48	May-16	50			
Jun-10	48	Jun-16	50			
Jul-10	48	Jul-16	50			
Aug-10	48	Aug-16	50			
Sep-10	50	Sep-16	50			
Oct-10	50	Oct-16	50			
Nov-10	50	Nov-16	50			
Dec-10	50	Dec-16	50			
Jan-11	50					



**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 24EN  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= n/a SSE= 6.66E+03  
Par (X) = P1 \* X + P2 X= PopXDisPersInc  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 204.6

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data PopXDisPe	0	date	For Monthly Allocation HDD
Jan-05	328.91	Jan-11	246.80	2005	2,939.54	81154.71		Jan-05	37.32
Feb-05	332.76	Feb-11	270.20	2006	2,453.62	82964.04		Feb-05	33.43
Mar-05	307.70	Mar-11	232.14	2007	2,469.38	83321.77		Mar-05	29.94
Apr-05	437.78	Apr-11	212.78	2008	2,061.32	83791.49		Apr-05	14.93
May-05	208.24	May-11	173.79	2009	2,493.61	86405.94		May-05	11.35
Jun-05	186.11	Jun-11	185.47	2010	2,455.32	86829.92		Jun-05	1.40
Jul-05	164.81	Jul-11	163.11	2011	2,445.36	87467.69		Jul-05	0.19
Aug-05	156.21	Aug-11	183.42	2012	2,570.93	87037.66		Aug-05	0.00
Sep-05	181.05	Sep-11	180.95	2013	2,648.60	87287.62		Sep-05	1.30
Oct-05	196.41	Oct-11	177.00	2014	2,626.69	86944.72		Oct-05	10.35
Nov-05	203.71	Nov-11	209.67	2015	2,647.40	87031.33		Nov-05	18.90
Dec-05	235.86	Dec-11	210.04					Dec-05	32.39
Jan-06	231.12	Jan-12	280.76					Jan-06	27.61
Feb-06	245.72	Feb-12	268.34					Feb-06	33.14
Mar-06	225.58	Mar-12	231.13					Mar-06	25.71
Apr-06	186.08	Apr-12	220.13					Apr-06	14.23
May-06	188.61	May-12	172.15					May-06	7.00
Jun-06	166.20	Jun-12	219.18					Jun-06	1.27
Jul-06	201.39	Jul-12	180.62					Jul-06	0.00
Aug-06	148.77	Aug-12	191.60					Aug-06	0.16
Sep-06	202.94	Sep-12	182.90					Sep-06	2.57
Oct-06	154.07	Oct-12	188.43					Oct-06	11.03
Nov-06	254.21	Nov-12	205.39					Nov-06	15.57
Dec-06	248.94	Dec-12	230.30					Dec-06	24.13
Jan-07	204.32	Jan-13	289.81					Jan-07	30.58
Feb-07	268.69	Feb-13	280.23					Feb-07	37.68
Mar-07	263.43	Mar-13	236.23					Mar-07	26.61
Apr-07	213.07	Apr-13	221.39					Apr-07	18.03
May-07	184.83	May-13	181.50					May-07	5.74
Jun-07	169.12	Jun-13	213.12					Jun-07	1.10
Jul-07	178.26	Jul-13	183.81					Jul-07	0.00
Aug-07	166.30	Aug-13	197.99					Aug-07	0.26
Sep-07	183.17	Sep-13	186.75					Sep-07	1.27
Oct-07	221.07	Oct-13	194.56					Oct-07	6.55
Nov-07	161.52	Nov-13	220.99					Nov-07	22.07
Dec-07	255.61	Dec-13	242.20					Dec-07	32.03
Jan-08	253.72	Jan-14	278.29					Jan-08	31.35
Feb-08	149.80	Feb-14	282.44					Feb-08	31.86
Mar-08	115.86	Mar-14	238.56					Mar-08	25.23
Apr-08	174.99	Apr-14	224.25					Apr-08	13.47
May-08	160.01	May-14	181.75					May-08	7.32
Jun-08	137.03	Jun-14	212.42					Jun-08	0.63
Jul-08	143.27	Jul-14	181.50					Jul-08	0.00
Aug-08	134.34	Aug-14	197.31					Aug-08	0.06
Sep-08	178.37	Sep-14	187.75					Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 24EN  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= n/a SSE= 6.66E+03  
Par (X) = P1 \* X + P2 X= PopXDisPersInc  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 204.6

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data PopXDisPe	0	For Monthly Allocation date	HDD
Oct-08	236.32	Oct-14	190.81					Oct-08	12.61
Nov-08	139.01	Nov-14	218.01					Nov-08	22.17
Dec-08	238.61	Dec-14	233.60					Dec-08	29.48
Jan-09	289.11	Jan-15	286.07					Jan-09	40.81
Feb-09	298.59	Feb-15	283.30					Feb-09	32.11
Mar-09	230.43	Mar-15	237.90					Mar-09	27.32
Apr-09	209.74	Apr-15	224.38					Apr-09	15.45
May-09	135.33	May-15	180.41					May-09	6.71
Jun-09	224.09	Jun-15	217.33					Jun-09	2.10
Jul-09	185.00	Jul-15	183.99					Jul-09	0.19
Aug-09	169.53	Aug-15	197.77					Aug-09	0.10
Sep-09	177.59	Sep-15	187.85					Sep-09	3.03
Oct-09	194.61	Oct-15	193.37					Oct-09	12.77
Nov-09	159.00	Nov-15	217.11					Nov-09	15.80
Dec-09	220.58	Dec-15	237.94					Dec-09	31.84
Jan-10	322.24	Jan-16	294.19					Jan-10	35.68
Feb-10	233.89	Feb-16	281.30					Feb-10	31.79
Mar-10	201.91	Mar-16	244.65					Mar-10	19.61
Apr-10	166.78	Apr-16	222.36					Apr-10	11.13
May-10	157.95	May-16	178.78					May-10	3.90
Jun-10	197.74	Jun-16	215.37					Jun-10	0.53
Jul-10	166.56	Jul-16	182.33					Jul-10	0.00
Aug-10	187.26	Aug-16	195.99					Aug-10	0.06
Sep-10	181.33	Sep-16	186.15					Sep-10	1.03
Oct-10	183.47	Oct-16	191.63					Oct-10	9.45
Nov-10	214.35	Nov-16	215.15					Nov-10	20.07
Dec-10	241.84	Dec-16	235.79					Dec-10	33.65
Jan-11	226.12							Jan-11	38.52

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2421  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Jan-05	-	Jan-11	8	2005	-	0
Feb-05	-	Feb-11	7	2006	1	
Mar-05	-	Mar-11	7	2007	2	
Apr-05	-	Apr-11	7	2008	3	
May-05	-	May-11	7	2009	2	
Jun-05	-	Jun-11	7	2010	8	
Jul-05	-	Jul-11	7	2011	6	
Aug-05	-	Aug-11	8	2012	6	
Sep-05	-	Sep-11	7	2013	6	
Oct-05	-	Oct-11	7	2014	6	
Nov-05	-	Nov-11	6	2015	6	
Dec-05	-	Dec-11	6			
Jan-06	-	Jan-12	6			
Feb-06	-	Feb-12	6			
Mar-06	-	Mar-12	6			
Apr-06	-	Apr-12	6			
May-06	-	May-12	6			
Jun-06	1	Jun-12	6			
Jul-06	1	Jul-12	6			
Aug-06	1	Aug-12	6			
Sep-06	1	Sep-12	6			
Oct-06	1	Oct-12	6			
Nov-06	1	Nov-12	6			
Dec-06	1	Dec-12	6			
Jan-07	1	Jan-13	6			
Feb-07	1	Feb-13	6			
Mar-07	1	Mar-13	6			
Apr-07	1	Apr-13	6			
May-07	1	May-13	6			
Jun-07	1	Jun-13	6			
Jul-07	1	Jul-13	6			
Aug-07	2	Aug-13	6			
Sep-07	2	Sep-13	6			
Oct-07	2	Oct-13	6			
Nov-07	2	Nov-13	6			
Dec-07	2	Dec-13	6			
Jan-08	2	Jan-14	6			
Feb-08	2	Feb-14	6			
Mar-08	2	Mar-14	6			
Apr-08	2	Apr-14	6			
May-08	2	May-14	6			
Jun-08	2	Jun-14	6			
Jul-08	2	Jul-14	6			
Aug-08	2	Aug-14	6			
Sep-08	2	Sep-14	6			
Oct-08	2	Oct-14	6			

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2421  
Model: Customer Counts

GOF R-Square= n/a  
Model: constant  
Where:

date	Actual Monthly Customer Counts	date	Forecast Monthly Customer Counts	Year	Year End Customers	Economic Data
Nov-08	2	Nov-14	6			0
Dec-08	3	Dec-14	6			
Jan-09	4	Jan-15	6			
Feb-09	6	Feb-15	6			
Mar-09	6	Mar-15	6			
Apr-09	5	Apr-15	6			
May-09	5	May-15	6			
Jun-09	5	Jun-15	6			
Jul-09	5	Jul-15	6			
Aug-09	3	Aug-15	6			
Sep-09	3	Sep-15	6			
Oct-09	3	Oct-15	6			
Nov-09	2	Nov-15	6			
Dec-09	2	Dec-15	6			
Jan-10	4	Jan-16	6			
Feb-10	4	Feb-16	6			
Mar-10	5	Mar-16	6			
Apr-10	5	Apr-16	6			
May-10	5	May-16	6			
Jun-10	5	Jun-16	6			
Jul-10	5	Jul-16	6			
Aug-10	5	Aug-16	6			
Sep-10	6	Sep-16	6			
Oct-10	6	Oct-16	6			
Nov-10	7	Nov-16	6			
Dec-10	8	Dec-16	6			
Jan-11	8					

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2421  
Model: Use per Customer (Dth/Customer/Day)

NH Model  
GOF: R-Square= 0 SSE= 2.43E+01  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 2.663

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data TimeConst	0	date	For Monthly Allocation HDD
Jan-05	-	Jan-11	84.28	2005	-	2005		Jan-05	37.32
Feb-05	-	Feb-11	101.43	2006	273.08	2006		Feb-05	33.43
Mar-05	-	Mar-11	80.16	2007	606.54	2007		Mar-05	29.94
Apr-05	-	Apr-11	85.46	2008	447.06	2008		Apr-05	14.93
May-05	-	May-11	63.27	2009	697.56	2009		May-05	11.35
Jun-05	-	Jun-11	60.39	2010	639.20	2010		Jun-05	1.40
Jul-05	-	Jul-11	49.14	2011	835.45	2011		Jul-05	0.19
Aug-05	-	Aug-11	59.13	2012	783.84	2012		Aug-05	0.00
Sep-05	-	Sep-11	61.50	2013	883.08	2013		Sep-05	1.30
Oct-05	-	Oct-11	51.79	2014	886.79	2014		Oct-05	10.35
Nov-05	-	Nov-11	70.58	2015	912.35	2015		Nov-05	18.90
Dec-05	-	Dec-11	68.32					Dec-05	32.39
Jan-06	-	Jan-12	66.49					Jan-06	27.61
Feb-06	-	Feb-12	72.55					Feb-06	33.14
Mar-06	-	Mar-12	70.55					Mar-06	25.71
Apr-06	-	Apr-12	72.17					Apr-06	14.23
May-06	-	May-12	73.13					May-06	7.00
Jun-06	51.20	Jun-12	72.33					Jun-06	1.27
Jul-06	36.71	Jul-12	56.34					Jul-06	0.00
Aug-06	39.03	Aug-12	53.24					Aug-06	0.16
Sep-06	43.80	Sep-12	61.11					Sep-06	2.57
Oct-06	40.23	Oct-12	58.57					Oct-06	11.03
Nov-06	44.57	Nov-12	56.86					Nov-06	15.57
Dec-06	17.55	Dec-12	70.50					Dec-06	24.13
Jan-07	114.97	Jan-13	71.26					Jan-07	30.58
Feb-07	58.86	Feb-13	98.63					Feb-07	37.68
Mar-07	71.55	Mar-13	79.28					Mar-07	26.61
Apr-07	67.93	Apr-13	79.45					Apr-07	18.03
May-07	61.31	May-13	75.82					May-07	5.74
Jun-07	46.43	Jun-13	73.46					Jun-07	1.10
Jul-07	32.03	Jul-13	56.65					Jul-07	0.00
Aug-07	14.40	Aug-13	61.82					Aug-07	0.26
Sep-07	29.43	Sep-13	64.48					Sep-07	1.27
Oct-07	31.84	Oct-13	59.61					Oct-07	6.55
Nov-07	36.77	Nov-13	69.47					Nov-07	22.07
Dec-07	41.02	Dec-13	93.14					Dec-07	32.03
Jan-08	50.85	Jan-14	83.21					Jan-08	31.35
Feb-08	54.53	Feb-14	102.62					Feb-08	31.86
Mar-08	52.63	Mar-14	85.74					Mar-08	25.23
Apr-08	42.90	Apr-14	84.20					Apr-08	13.47
May-08	36.98	May-14	75.42					May-08	7.32
Jun-08	35.68	Jun-14	73.30					Jun-08	0.63
Jul-08	11.65	Jul-14	57.65					Jul-08	0.00
Aug-08	54.66	Aug-14	58.77					Aug-08	0.06
Sep-08	24.28	Sep-14	63.34					Sep-08	2.40

**Narragasset Electric Company d/b/a National Grid  
2011 Delivery Forecast Model Specification**

Class: 2421  
Model: Use per Customer (Dth/Customer/Day)

NH Model

GOF: R-Square= 0 SSE= 2.43E+01  
Par (X) = P1 \* X + P2 X= TimeConst  
Coefficients (with 95% confidence bounds):  
p1 = 0  
p2 = 2.663

date	Actual Use Per Dth/MC/Day	date	Forecasted Use Per Dth/MC/Day	Year	Annual Use Per Dth/MC/Day	Economic Data TimeConst	0	date	For Monthly Allocation HDD
Oct-08	27.97	Oct-14	57.79					Oct-08	12.61
Nov-08	27.97	Nov-14	66.20					Nov-08	22.17
Dec-08	26.95	Dec-14	78.54					Dec-08	29.48
Jan-09	64.04	Jan-15	78.79					Jan-09	40.81
Feb-09	20.81	Feb-15	98.22					Feb-09	32.11
Mar-09	39.74	Mar-15	83.99					Mar-09	27.32
Apr-09	51.80	Apr-15	84.15					Apr-09	15.45
May-09	61.00	May-15	80.25					May-09	6.71
Jun-09	63.12	Jun-15	78.40					Jun-09	2.10
Jul-09	50.21	Jul-15	61.07					Jul-09	0.19
Aug-09	53.91	Aug-15	62.03					Aug-09	0.10
Sep-09	81.58	Sep-15	67.56					Sep-09	3.03
Oct-09	84.82	Oct-15	62.99					Oct-09	12.77
Nov-09	70.71	Nov-15	68.62					Nov-09	15.80
Dec-09	55.82	Dec-15	86.28					Dec-09	31.84
Jan-10	35.60	Jan-16	82.55					Jan-10	35.68
Feb-10	85.99	Feb-16	99.36					Feb-10	31.79
Mar-10	47.69	Mar-16	88.00					Mar-10	19.61
Apr-10	51.80	Apr-16	82.36					Apr-10	11.13
May-10	61.00	May-16	78.55					May-10	3.90
Jun-10	58.57	Jun-16	76.74					Jun-10	0.53
Jul-10	42.53	Jul-16	59.77					Jul-10	0.00
Aug-10	56.11	Aug-16	60.72					Aug-10	0.06
Sep-10	44.78	Sep-16	66.13					Sep-10	1.03
Oct-10	42.90	Oct-16	61.66					Oct-10	9.45
Nov-10	44.78	Nov-16	67.16					Nov-10	20.07
Dec-10	67.46	Dec-16	84.45					Dec-10	33.65
Jan-11	84.28							Jan-11	38.52