State of New Hampshire
Public Utilities Commission

Unitil Energy Systems, Inc.
Docket No. DE 07-064 Energy Efficiency Rate Mechanisms
Responses to March 13, 2008 Request for Comments

Comments Regarding Declining Sales Attributable to Energy Conservation, Energy Efficiency or Demand Response Programs

1. Has Unitil experienced declining sales attributable to energy conservation, energy efficiency or demand response programs?

Yes, Unitil has seen a reduction in sales as a result of energy conservation and energy efficiency. The company will see a 60,911,489 reduction in lifetime kWh sales as a result of implementation of the 2008 CORE energy efficiency programs as approved in DE 07-106 Order # 24,815[1]. Additionally, customers have reduced their average electricity consumption over the past several years through individual energy conservation efforts in response to higher energy prices and other economic factors. This decline is evident in recent UES sales trends as depicted in Figures 1 and 2 attached. Figure 1 depicts average kWh usage per meter, adjusted for annual variations in weather, over a ten year period. Figure 2 depicts the average kWh use per residential customer for the same period. An increasing average usage is evident in both graphs except for a notable decrease in the last several years.

Furthermore, this trend has persisted into the first quarter of 2008, and increasingly appears to be evidence of a long term structural change, and not simply a short term aberration. Electric sales in the first quarter of 2008 are down approximately 1% year-over-year from 2007. If residential sales in the first quarter of 2008 are compared to the first quarter of 2005, use per customer is down over 4% over three years.

2. Does Unitil expect to experience, declining sales attributable to energy conservation, energy efficiency or demand response?

Yes, Unitil expects to experience further declining sales attributable to energy conservation, continued energy efficiency programs and demand reduction efforts. Recent NH energy policy initiatives will serve to accelerate these declines. Coupled with these factors, Unitil has also seen a recent reduction in customer additions which will further exacerbate declining sales.

Several recent energy policy initiatives highlight the desire of the state to promote local supply resources, increase energy efficiency, and promote renewable generation. Senate Bill 451, currently under consideration by the NH House of

[1] See attachment G in DE 07-106

Representatives, states its primary purpose to promote "Distributed energy resources [which] can increase overall energy efficiency and provide energy diversity by eliminating, displacing, or better managing energy delivers from the centralized bulk power grid…" Unitil expects that many of these distributed energy resources (DER) would include behind the meter installations to reduce consumption or demand through such efforts as small renewable generation installations, utility initiated demand response, ice storage systems, increased energy efficiency investments or customer empowerment through information technology. Renewable distributed generation is one such DER example that will receive increasing incentives as a result of the Electric Renewable Portfolio Standard recently passed by the Legislature and enacted by the Commission[2]. Customers installing renewable DG will displace their usage and as a result lower utility sales.

In conjunction with SB 451, Unitil is pursuing several DER projects that could impact sales and expects to support several pilot projects. These projects include means to "freeze" UES system demand, and technology applications that will enable customers to actively participate in energy conservation and demand response programs through utility enabled, in-home controls that utilize wireless or internet communications. The investigation of these opportunities has already highlighted obvious sales impacts.

Unitil has also seen a reduction in the trend of new meter installs which are indicative of customer growth. The rate of new meter installs has declined the past few years (see Figure 3 attached). This decline is expected to magnify the per unit sales reductions due to energy efficiency and DER efforts.

As an exercise in measuring the potential impact of these various variables we performed a scenario analysis (see Figure 4 attached) to highlight the individual and overall affect on UES sales. The baseline scenario is based on a forecast of the historical average growth rate, a compound annual growth rate of 2.16%. Various scenarios were analyzed and presented as incremental impacts. These scenarios included:

- Customer behavior and growth reflecting recent trends
- Energy efficiency program increases
- Renewable Portfolio Standard incentives
- Demand reduction

[2] RSA 362-F and PUC 2500

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Energy Efficiency impacts were estimated by doubling the impact of current programs. The impact of the Renewable Portfolio Standard was estimated by assuming that 50% of the requirements would be satisfied by customers installing renewable generation beyond their meter and displacing current loads. The demand reduction scenario assumed a reduction in peak load to a 2007 level through demand response or energy displacement. The combined effect is a reduction in sales to levels seen in the early 1990's.

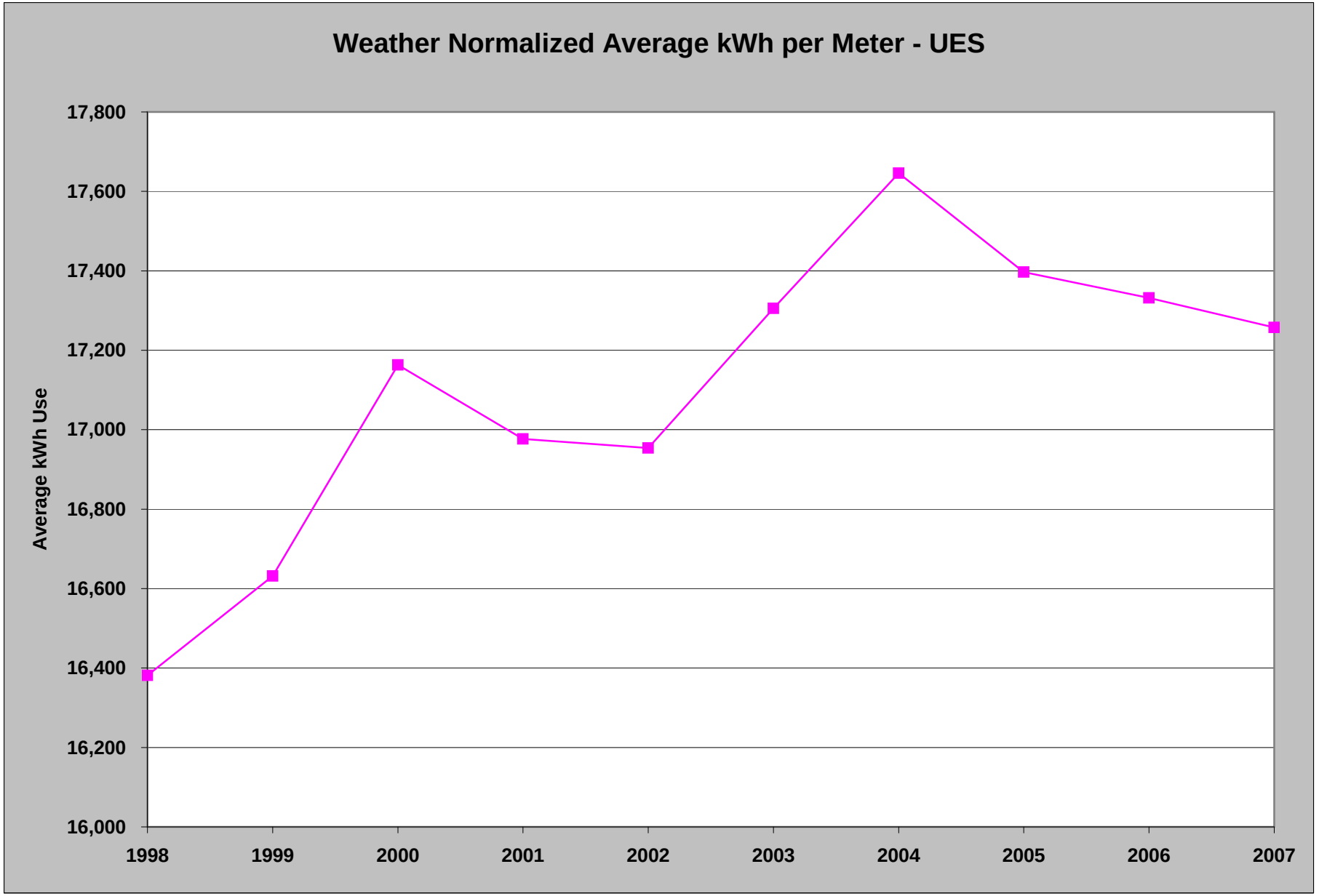
Weather Normalized Average kWh per Meter - UES
Average kWh Use
17,800
17,600
17,400
17,200
17,000
16,800
16,600
16,400
16,200
16,000
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007

Figure 1

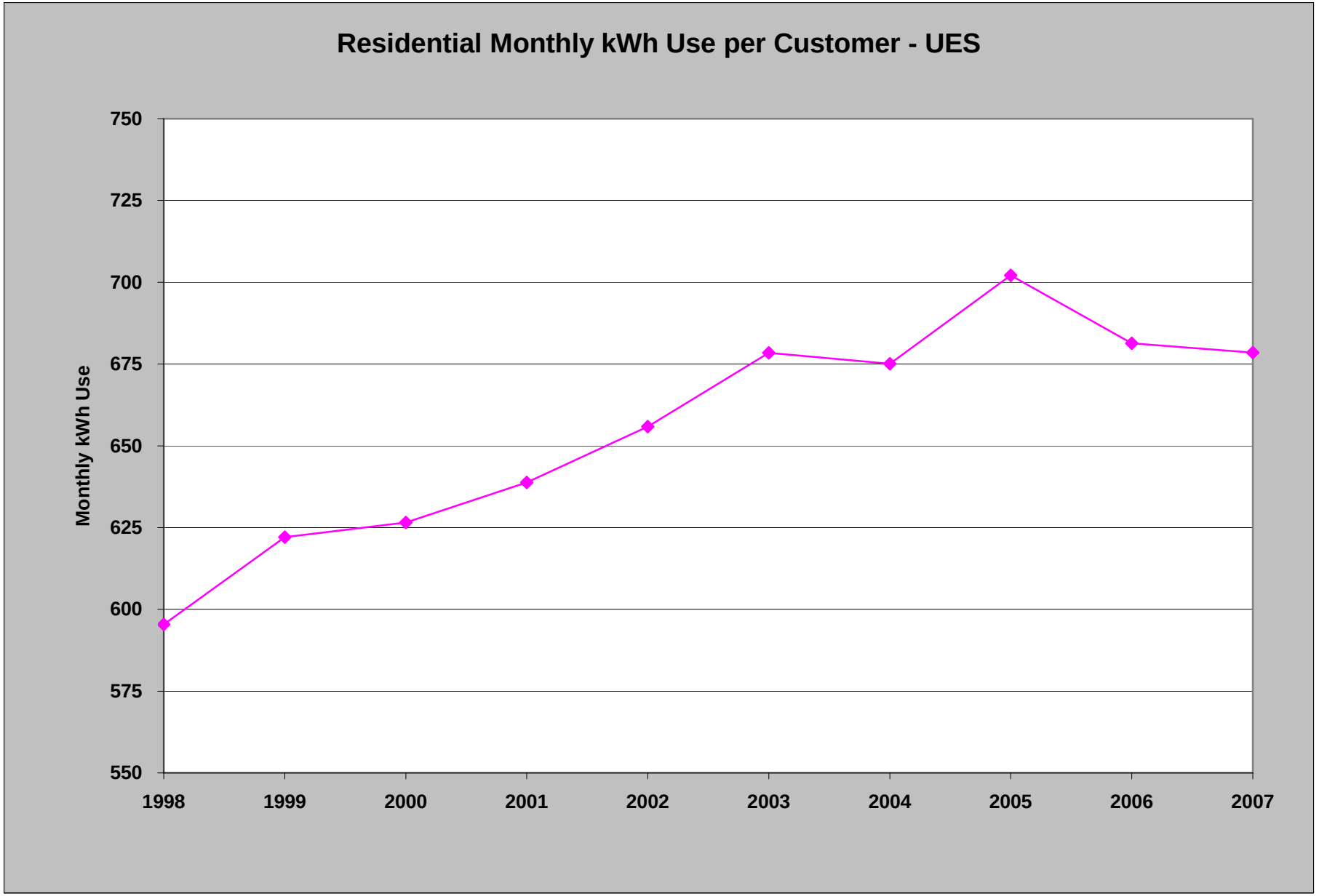
Residential Monthly kWh Use per Customer - UES
Monthly kWh Use
750
725
700
675
650
625
600
575
550
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007

Figure 2

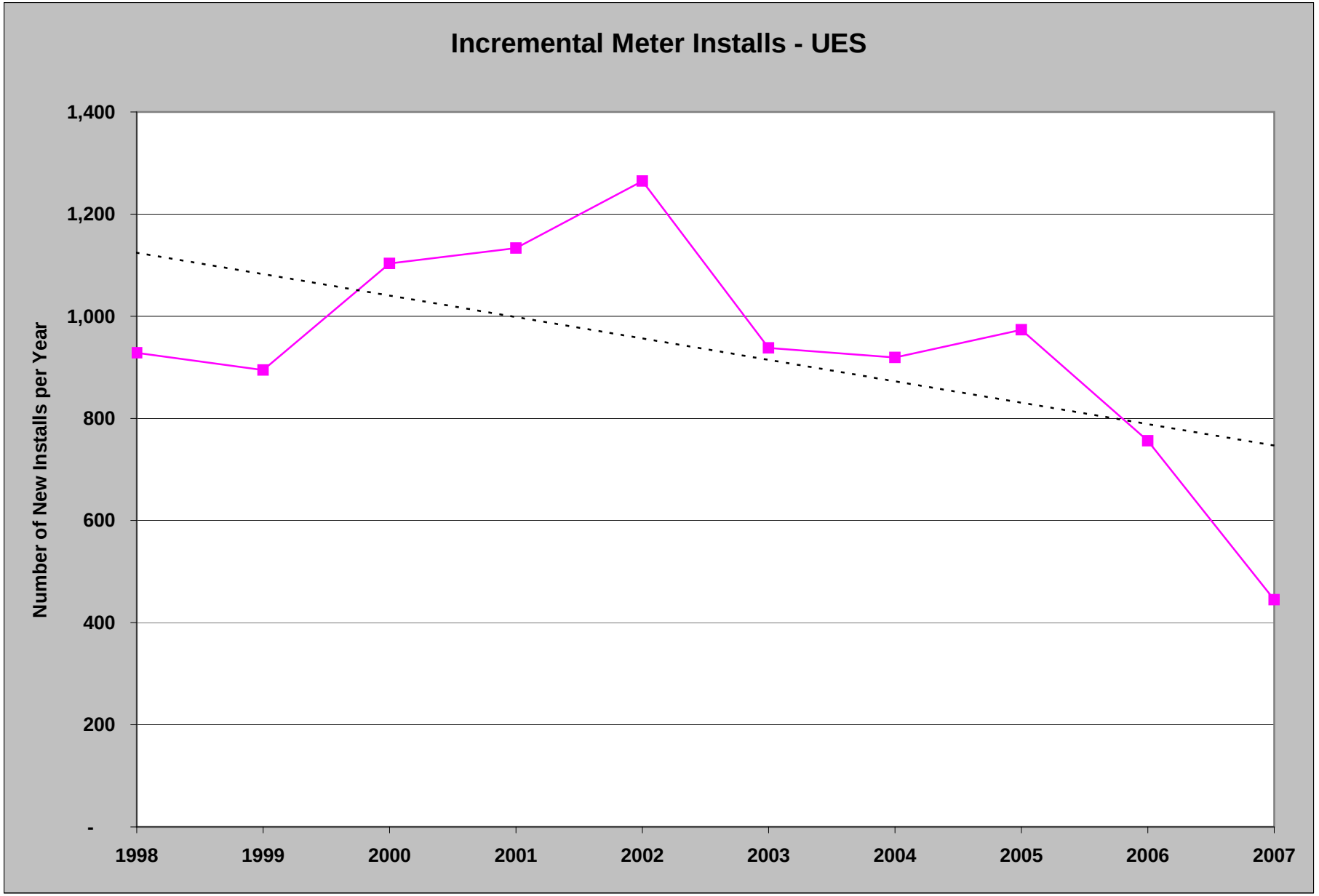
Incremental Meter Installs - UES
Number of New Installs per Year
1,400
1,200
1,000
800
600
400
200
-
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007

Figure 3

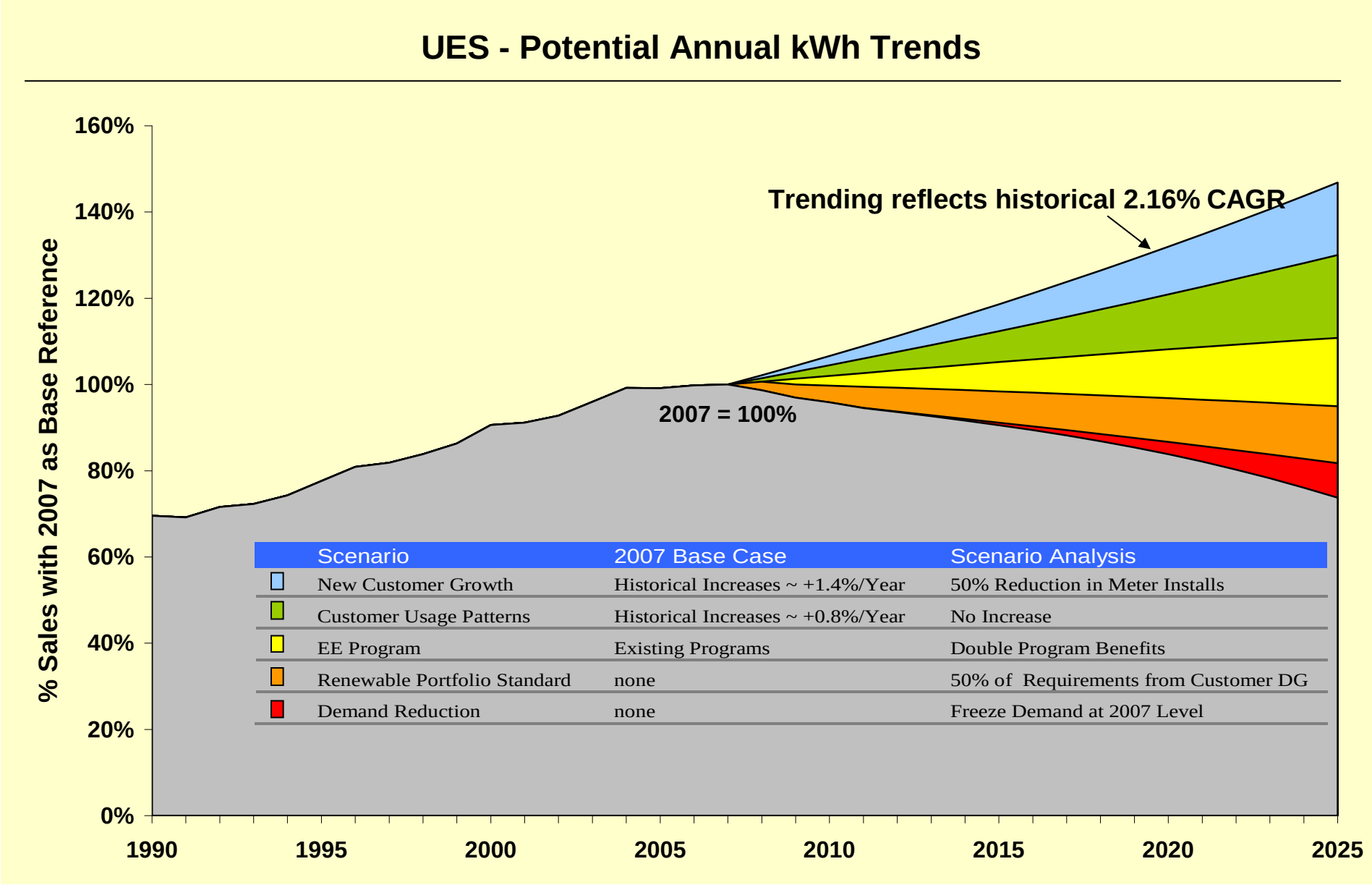
UES - Potential Annual kWh Trends
% Sales with 2007 as Base Reference
160%
140%
120%
100%
80%
60%
40%
20%
0%
1990
1995
2000
2005
2010
2015
2020
2025
Trending reflects historical 2.16% CAGR
2007 = 100%
Scenario
2007 Base Case
Scenario Analysis
New Customer Growth
Historical Increases ~ +1.4%/Year
50% Reduction in Meter Installs
Customer Usage Patterns
Historical Increases ~ +0.8%/Year
No Increase
EE Program
Existing Programs
Double Program Benefits
Renewable Portfolio Standard
none
50% of Requirements from Customer DG
Demand Reduction
none
Freeze Demand at 2007 Level

Figure 4

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Question 1:

Does existing rate treatment pose an obstacle to investment in energy efficiency?

Response:

Traditional cost of service / rate of return regulation, as practiced in New Hampshire, is based on an analysis of a utility's cost of doing business in a recent historical period ("Test Year") to determine the level of revenues ("Revenue Requirement") that would have allowed the utility a reasonable opportunity to earn a fair rate of return in that historical period. The revenue requirement consists of (1) expenses, (2) return of investment in plant (depreciation), (3)return on investment in plant, and (4) taxes. Typically, certain adjustments to test year data are allowed to ensure that the historical costs are representative of the costs that are likely to be experienced in the future period when the new approved rates will take effect. The return on investment component of the revenue requirement accounts for the cost of debt that the utility has issued and the cost of equity, which is determined by analysis to be the return that will allow the utility to maintain credit and attract investors.

The rates that are charged to customers are determined by dividing the revenue requirement by the units of sales; the units of sales are also determined on a historical test year basis. The detailed determination of the billed rates involves assigning the appropriate and fair portion of the total revenue requirement to each of the rate classes that receives service from the company, and by further separating the class revenue requirement into the portions that will be recovered from each of the types of units of sales – billing determinants - that apply to that rate class, e.g. customer, commodity or energy, and demand. Finally, customer charge rates, volumetric or energy rates and demand rates to be billed to customers in each rate class are calculated.

Under this traditional ratemaking practice, electric and gas distribution companies have a strong incentive to maintain and/or increase sales in order to generate the revenues necessary to offset increasing operations and maintenance ("O&M") expenses and fund needed system reliability and capital expansion projects between rate cases. As long as utility profits are linked to selling more electricity or natural gas, New Hampshire is unlikely to fully realize the economic and environmental benefits from the utility's participation in reducing demand.

The removal of disincentives alone, however, may not be sufficient to engage the capital resources necessary to fully realize the potential of energy efficiency and demand response measures. In order to effectively and fully engage the utility's resources and market advantages in energy efficiency and demand reduction endeavors, a well designed revenue decoupling mechanism incorporating inflation and investment cost tracker mechanisms is necessary, as well as allowing the utility the opportunity to rate base and earn a return on capital investments in demand resources.

A revenue decoupling is more in the nature of a revenue recovery mechanism rather than a cost recovery mechanism, as it does not ensure that a distribution utility can recover its "prudently incurred, just and reasonable costs" over time. As such, it is not a substitute for ratemaking approaches (e.g., performance based regulation or "PBR", long-term rate plans, or cost trackers) that accommodate the periodic recovery of a distribution utilities' growth in capital investment and increases in operating costs. The traditional rate setting model, described above and followed in New Hampshire, which establishes rates based upon an historic test year, implicitly relies upon revenue growth from increased energy and demand usage to fund the ongoing expense growth and investment needs of the distribution utility, which can moderate the frequency of rate filings. While decoupling may provide increased rate stability and revenue certainty, it appears to be focused on the recovery of a target level of revenue that only grows with increases in the number of customers. Unitil's experience, however, has been that growth in the number of customers is not highly correlated with increases in distribution costs and capital investments. If an allowance for recovery of inflation and investment growth is not provided for as part of a revenue decoupling mechanism, the result will likely lead to revenue shortfalls and increasing risk, requiring more frequent base rate proceedings and increased costs to customers.

Once the utilities have been made indifferent to increased energy efficiency, the next step would be to incent them to maximize efficiency, including incentives for utilities to increase the deployment of energy efficiency and energy displacement. This is the objective of SB451 which is currently being considered by the NH legislature.

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Question 2:

Would different rate treatment promote investment in energy efficiency?

Response:

Unitil has previously commented that fully aligning a distribution utility's financial interests with the state's policy interests in energy efficiency and energy displacement technologies requires two things – 1) eliminating the disincentives caused by reductions in distribution revenues and earnings attributable to avoidance or displacement of energy consumption, e.g. revenue decoupling, and 2) providing a positive incentive to utilities for investing in energy efficiency and energy displacement.

In the perfect world where this alignment has occurred, the distribution utility will not be penalized for energy efficiency or displacement and will be provided incentives for investments in energy efficiency or displacement that are as good or better than the incentives for utilities to invest in new distribution equipment to meet increasing peak demands. In this scenario, the financial interests of utilities will cause them to pursue initiatives that are preferred from a public policy standpoint.

This will not be easy to achieve, as the business environment and rate structures for utilities are complex and there are significant trade-offs involved in the ratemaking process. Clearly, over time the level of investment in energy efficiency by distribution utilities will be influenced by the strength of this alignment of interests. The better the alignment and the stronger the incentives, the greater the level of investment.

There are several techniques that could be applied to this problem:

1. Aligning rate design to provide for fixed cost recovery in fixed charges – while this would achieve an alignment in one form, the method has a number of limitations. Significant rate increases would occur in the transition for certain customer segments. More significantly, revenues from fixed charges will tend to increase very slowly, whereas fixed costs, whether driven by salary, pension and health benefits or by the cost of steel, concrete and energy, are escalating at a much faster rate.

2. Revenue requirement adjustments – an automated adjustment to revenue requirements and corresponding rates to account for changes in costs

over time, Some form of revenue requirement adjustment is required to keep any financial/policy alignment in place through time. Under traditional ratemaking, as long as increases in distribution costs were matched by increases in sales, base rate increases could be avoided. Periodically, the utility would need to file a full base rate case. With revenues de-linked from sales in order to encourage energy conservation, some mechanism to scale the revenue requirement to increasing costs through time will be required to avoid an ever increasing need for base rate cases. The delicate balance will be to maintain an appropriate standard for distribution utility cost efficiencies relative to the consequences of inflationary factors affecting the various cost elements.

3. Performance Based Ratemaking – this is an alternative to revenue requirement adjustments that generally provides flexibility to the distribution utility to increase rates annually for inflation net of a productivity factor without a specific revenue requirements analysis. There are often earning caps and collars, and provision for adjustments for exogenous factors, as well as baseline performance standards and performance penalties to insure that costs are not cut at the expense of service.

4. Forecasted test year – this is a method used in some jurisdictions to address inflation by setting future rates based on forecasted test year cost data. The method is an alternate form of revenue requirement adjustment for future conditions and helps address inflation or other upward cost pressures for the period of the forecast. This ratemaking method may be costly to implement due to the added complexity and uncertainty the forecasting process adds to the ratemaking process.

5. Step increases – a method providing for cost recovery after an abbreviated regulatory review of increases for specific items, most often a capital investment program. A step increase is a one-time, permanent increase in rates and has proven to be a effective and workable ratemaking method, particularly for recovery of costs associated with non-revenue producing investments.

6. Tracking mechanisms – a frequently used approach to providing cost recovery for highly variable cost items or reconciling rate components. Tracking mechanisms separate out specific cost elements or items and adjusts rates periodically for changes in costs. Trackers are usually put in place on a permanent basis, and the corresponding rates can go up or

down over time. Tracking mechanisms are presently used for specific cost items in many states.

7. Financial incentives – a specific financial reward for utility actions or performance. Shared Savings Incentive for implementation of energy efficiency programs provides some opportunity for a distribution utility to earn from successful programs - this technique is presently used for energy efficiency programs in many states.

8. Rate of Return Incentive – a premium on the rate of return on equity for specific investments. This technique has been used by FERC to boost investment in needed transmission facilities to meet reliability requirements. Such an incentive is also included in SB451 being considered by the New Hampshire legislature.

9. Allowing alternative investments – providing an opportunity for utilities to earn on alternative investments to traditional distribution and transmission equipment. SB451 would allow such alternative investments in distributed energy resources, subject to review and approval by the Commission.

The right combination of the above techniques can achieve the goal of eliminating disincentives and creating incentives for increased utility investments in energy efficiency. It will take a combination of measures, however, and, in the abstract, revenue decoupling in-and-of-itself will not achieve the alignment of finances and policies that we believe are necessary.

The appropriate solution is one that provides a process for determining a base revenue requirement, incorporates administratively efficient mechanisms for increases in costs and investments and neutralizes the negative impact on revenues for decreases in customer sales due to energy conservation. In addition an effective solution would also provide an earnings incentive for energy efficiency such as shared savings incentives for externally (e.g. SBC, RGGI) funded programs or a return on investment for utility investments as contemplated in SB451.

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Question 3:

Should these issues be pursued further in this docket, through utility-specific rate cases, as part of a rulemaking, or through some other means?

Response:

Unitil recommends that the issues raised in the Commission's initial and supplement Orders of Notice, as well as its Order on Scope (Order No. 24,774) continue to be addressed in this docket, while allowing for utility specific dockets where appropriate to accommodate the particular circumstances of an individual utility, as necessary.

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Question 4:

Would decoupling constitute an alternative form of regulation under RSA 374:3-a?

Response:

No. The de-linking of profits to sales through decoupling may be accomplished without disturbing the traditional rate of return regulation formula for arriving at a periodically established revenue requirement. Between such rate proceedings, rates would be adjusted for reduced sales and investment growth. These growth factors are not unlike rate mechanisms that have been approved in the past by the Commission.

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