

Exhibit GRG-4  
UES Responses to Staff Information Requests in DE 06-061

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October 20, 2006

## BY HAND DELIVERY

Suzanne Amidon  
Staff Attorney  
New Hampshire Public Utilities Commission  
21 S. Fruit Street, Suite 10  
Concord NH 03301-2429

RE: DE 06-061-- Investigation into Federal Standards Pursuant to Energy Policy Act of 2005; Response to Commission Staff First Set of Data Requests

Dear Ms. Amidon:

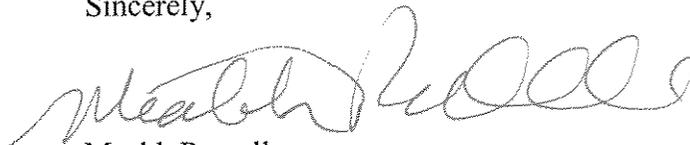
On behalf of Unitil Energy Systems, Inc. please find a copy of the Company's responses to the New Hampshire Public Utilities Commission Staff's First Set of Data Requests in the above-referenced docket.

Also enclosed is a disk containing an electronic copy of the filing, as required by Section PUC 203.03 of the New Hampshire Code of Administrative Rules.

Suzanne Amidon  
Staff Attorney  
New Hampshire Public Utilities Commission  
October 20, 2006  
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Please do not hesitate to contact me if you have any questions concerning this response.

Sincerely,

A handwritten signature in cursive script, appearing to read "Meabh Purcell".

Meabh Purcell

Enclosure

cc: Thomas Frantz, NHPUC  
George McCluskey, NHPUC  
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**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-1:**

Does UES recommend or not recommend that the Commission adopt the standard in Section 1252 of EPAct regarding time-based metering and communications? If not, please explain why.

**Response:**

UES does not recommend that the Commission adopt the standard in Section 1252 of EPAct regarding time-based metering and communications at this time:

1. As a result of the Commission's investigation and order in Dockets DE 03-013 and DE 05-064, which UES believes qualifies as "prior state action," the Commission is exempted from implementing the standard;
2. Since there is no requirement to implement the standard, UES submits that it only be implemented if it will provide net benefits to customers; in particular, benefits that would not otherwise be able to achieved through more effective or efficient alternatives;
3. A determination that the standard would result in net benefits to customers is dependent upon a range of factors and considerations, such as the ability and willingness of customers to respond to the price signals in a way that results in overall lower costs. Accordingly, the determination to implement the standard requires additional study and investigation to determine whether such ability and willingness to respond will result.

**Person Responsible:** Karen M. Asbury

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
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Responses to Staff Data Requests - Set 1

**Request No. Staff 1-2:**

If UES recommends adoption of the standard, does UES also recommend that pricing to large default service customers reflect the hourly variations in the “day ahead” market energy price? If not, please explain why not.

**Response:**

UES does not recommend adoption of the standard at this time.

**Person Responsible:** Karen M. Asbury

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-3:**

Please provide a breakdown by rate schedule of the number of delivery service customers served by UES as of December 31, 2005. Please also provide a breakdown by rate schedule of energy delivered to customers in calendar year 2005.

**Response:**

<u>Class</u>	<u>Customers</u>	<u>kWh delivered</u>
Residential	62,128	509,531,702
Regular General	10,180	365,443,477
Large General	151	376,123,957
<u>OL</u>	<u>1,906</u>	<u>9,276,792</u>
Total	74,365	1,260,375,929

**Person Responsible:** Douglas Debski

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-4:**

Please provide a breakdown by rate schedule of the number of UES customers that have elected to purchase their energy requirements from competitive suppliers as of June 30, 2006. Please also provide a breakdown by rate schedule of energy delivered to customers receiving competitive energy services in calendar year 2005.

**Response:**

<u>Class</u>	<u>6/30/06 customers of competitive suppliers</u>	<u>2005 kWh delivered to customers receiving competitive energy services</u>
Residential	0	0
Regular General	73	0
Large General	64	21,533,711
<u>OL</u>	<u>35</u>	<u>0</u>
Total	172	21,533,711

**Person Responsible:** Douglas Debski

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
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**Request No. Staff 1-5:**

Ref. UES Comments, page 3. UES urges the Commission to address the “distinction between a vertically integrated utility and a distribution-only utility” when evaluating whether to implement time-based metering and communications. Please respond to the following:

- a. In the context of time-based pricing, what is the critical difference between a vertically integrated utility and a distribution-only utility?
- b. How should this difference effect the Commission’s decision on time-based pricing?

**Response:**

A major objective of time-based metering and rates is to produce efficiencies by providing the opportunity to better align retail prices for energy with the wholesale price and cost of energy at different times. A vertically integrated utility, which is responsible for the ownership of generation and/or the management of a power supply portfolio, has both the ability and incentive to achieve such efficiencies by providing retail prices which match their wholesale costs at different times of the day. A distribution-only utility is in a very different situation, particularly in regard to residential and small commercial customers. As a distribution-only utility in New Hampshire, UES only supplies energy as a provider of last resort and, consistent with the Commission's policies for default service, purchases that energy from the wholesale market at fixed, rather than time-differentiated, prices.

Accordingly, a distribution-only utility operating under the Commission's current default service policies has neither the ability nor incentive to capture efficiencies by better aligning retail prices with the wholesale costs of energy. A distribution-only utility can, under appropriate Commission policies, seek time-differentiated pricing from the wholesale market, but it is uncertain whether the wholesale market would, in fact, provide such wholesale products in response to a request for default service supply. Thus, in considering appropriate policies for time-of-use retail pricing, the Commission must address the threshold question of the appropriate role of distribution-only utilities in providing default service.

**Person Responsible:** Karen M. Asbury

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
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**Request No. Staff 1-6:**

Ref. UES Comments, page 4. Please identify the "other optional services" and explain how those services plus the installation advanced metering for large customers encourages conservation of supply.

**Response:**

The other optional services are interval data service and enhanced metering service, including remote access metering and pulse output service. These services allow customers to access the required metering information to allow them to contract with a competitive supplier which provides time based pricing options or demand response programs that may encourage conservation of supply.

**Person Responsible:** Douglas Debski

**Date:** October 20, 2006

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Public Utilities Commission**

Unitil Energy Systems, Inc.  
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**Request No. Staff 1-7:**

Ref. UES Comments, page 4. UES states that it may be significantly limited in its ability to offer time differentiated rates to non-G1 customers over the next several years. Does UES agree that the Commission could, under the existing default service model, eliminate the existing non-G1 rate structure whereby customers pay a fixed price equal to the average of six monthly prices and insert in its place a fixed price that varies monthly? If not, explain why.

**Response:**

The Commission could eliminate the six-month rate setting process that currently exists in UES' tariffs and implement monthly pricing. For clarification, UES' comments concern current supply contracts that go out into 2009 that do not have prices that change intraday or during a month.

**Person Responsible:** David K. Foote

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-8:**

Ref. UES Comments, page 5. UES states that without a demand component to rates for energy supply, customers do not have a price signal to reduce their demand. Is UES suggesting that the capacity component of default service supply costs should be collected through a demand charge? If not, please explain the point of the statement. If yes, explain why the recovery of these costs through a kWh rate that reflects capacity cost incurrence will not send the appropriate cost message.

**Response:**

No, UES does not suggest the capacity component of default service be collected through a demand charge. UES simply states that customers do not have an incentive to reduce their monthly billing demand component through the commodity portion of their rates because it is billed on a flat cents per kWh basis. That incentive is provided by the demand component of distribution and stranded cost charges.

**Person Responsible:** Douglas Debski

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
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**Request No. Staff 1-9:**

Ref. UES Comments, page 6. UES states that these “services would permit a customer to participate in RTP options for electric generation service provided to the customer by a competitive electric power supplier. Would these options also permit a large customer to participate in RTP options for default service provided by UES? If not, please explain why and discuss the changes needed to make hourly priced default service an option.

**Response:**

These options would provide the necessary metering information which is utilized as part of the RTP process. It would not provide the necessary communications system with the meter, any type of price signals to the customer, nor enable the required billing system modifications needed to bill RTP based rates.

**Person Responsible:** Douglas Debski

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
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**Request No. Staff 1-10:**

Please provide the number of customers by rate schedule that have purchased optional metering and billing services.

**Response:**

Below is a summary of the information contained in the advanced metering report provided to the commission on a quarterly basis.

<u>Quarter</u>	<u>Class</u>	<u>Enhanced Metering</u>	<u>Pulse Output</u>	<u>Interval Data</u>
2004 Q1	G1	0	0	0
2004 Q2	G2	0	0	1
	G1	0	0	1
2004 Q3	G1	0	0	0
2004 Q4	G1	0	0	1
2005 Q1	G1	0	0	11
2005 Q2	G1	0	0	21
2005 Q3	G1	0	0	17
2005 Q4	G1	0	0	35
2006 Q1	G1	0	1	26
2006 Q2	G2	0	0	5
	G1	0	0	27

**Person Responsible:** Douglas Debski

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
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**Request No. Staff 1-11:**

What is the availability of interval meters and communications equipment by customer class for UES?

**Response:**

All G1 customers have interval meters. A limited number of G1 installations have a phone line installed. These types of meters are available on a cost basis to other customer classes as part of the tariffed enhanced metering service.

**Person Responsible:** Douglas Debski

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-12:**

Does UES currently have the capability to bill large customers based on hourly prices? If not, please describe the changes that need to be made to UES' automated billing system in order to implement hourly pricing and provide an estimate of the time to implement such changes.

**Response:**

UES does not currently have the capability to bill large customers based on hourly prices. Under the settlement in Docket DE 05-064, UES is obligated to file a response to a similar question by November 1, 2006 and will provide that filing as a supplemental response to this question.

**Person Responsible:** David K. Foote

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
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Responses to Staff Data Requests - Set 1

**Request No. Staff 1-13:**

Assuming the NHPUC decides to require time-based pricing, does UES believe that implementation should be mandatory or voluntary? Please explain the basis for your answer. In addition, which time-based rate structure is appropriate for each customer class?

**Response:**

If it is determined that time-based pricing provides net benefits, past experience suggests it would have to be implemented on a mandatory basis. UES has offered optional time-of-use rates to its smaller customers in the past and participation was nearly non-existent.

**Person Responsible:** Karen M. Asbury

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-14:**

Please provide a status report on investigations by the Massachusetts Department of Telecommunications and Energy into hourly pricing or demand response for large default service customers in Massachusetts. Please also provide copies of relevant MDTE decisions and FG&E comments, pleadings, etc.

**Response:**

In June 2002, the MDTE opened an investigation into the provision of Default Service in Docket D.T.E. 02-40. The objective was to ensure that the manner in which Default Service is provided is compatible with the development of an efficient competitive market. Attachment Staff 1-14 are relevant pages from Order D.T.E. 02-40-B dated April 25, 2003. UES is not aware of any other investigations into hourly pricing or demand response for large default service customers in Massachusetts.

**Person Responsible:** Douglas Debski

**Date:** October 20, 2006

power suppliers and customers (WMICG Comments at 4-5). WMICG states that, at least for large C&I customers, default service prices should be adjusted monthly based on an accepted fuel or electricity price index, in order to more properly reflect current market prices.

WMICG argues that customers seeking to purchase a longer-term, fixed price product should properly do so in the competitive market. Finally, WMICG supports time-of-use default service pricing for large customers (id.).

## 2. Analysis and Findings

The manner in which default service is procured and priced for medium and large C&I customers clearly will have a large effect on whether these customers will have the appropriate incentives to turn to the competitive market for more sophisticated or advantageous service offerings (see Section II, above). Commenters in this proceeding identify the six-to-twelve month procurement period for larger customers as a deficiency in default service, because the resulting prices are not indicative of wholesale market price over the course of the procurement period (i.e., default service customers are not receiving efficient price signals). In addition, the current procurement terms provide default service customers with a level of price certainty that is more appropriate provided by the competitive market, thus promoting default service as a longer-term alternative to competitive supply, rather than as a short-term, last resort service.

Default service may serve as a viable alternative to competitive supply if it provides similar types of services in three areas: (1) the level of protection from spot market price

volatility; (2) the degree of price certainty; and (3) the actual price to be charged.<sup>17</sup> Under the current procurement and pricing model, default service competes with competitive services in all three areas. First, default service provides full protection to customers against spot market price volatility. A customer that seeks protection against price volatility will view default service as a viable supply option. Second, default service provides customers with price certainty for periods of six months. Again, a customer that seeks price certainty will view default service as viable supply option, although in this case, competitive suppliers can provide certainty over a longer time period. Finally, default service prices may be at or below market levels, depending on market conditions at the time that the distribution company conducts its competitive solicitation. To the extent that a company's default service prices are competitive with market prices, a customer evaluating supply options will likely choose default service. A customer may defer a decision on whether to enter into an agreement with a competitive supplier until default service prices for the subsequent six-month procurement term are known.

In order to function as a basic service, default service should provide customers with efficient price signals. However, extended periods of price certainty for what is, after all, last-resort service, serves to undermine retail competition. The most direct way to resolve this problem would be to structure default service as a passthrough of the hourly wholesale spot market prices. Customers that value price certainty and protection from price volatility would

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<sup>17</sup> Prices will vary, to some degree, based on the level of protection and price certainty that is included in contractual arrangements, because (1) suppliers require a premium as compensation for the market risk associated with fixing a price for a commodity with relatively volatile input costs, such as fuel, and (2) customers presumably will pay such a premium for increased protections against price volatility and greater price certainty.

appropriately turn to the competitive market for these services. Such a procurement and pricing model would not necessarily result in higher overall costs for default service customers, as spot market pricing does not always result in higher costs than longer-term bilateral contract prices. However, such a model would expose customers to significant risk that spot market prices could skyrocket during certain hours, causing substantial financial harm to customers. See D.T.E. 99-60-A at 16. This is an unacceptable risk for customers that may appropriately be using default service as a short-term, last resort service. California's experience with exposing customers to spot market fluctuation all the time is a cautionary tale whose message should not be dismissed. In addition, basing default service on spot market prices would likely create significant billing complexities for the distribution companies.

A more viable approach to ensuring that default service provides large customers with the appropriate incentives to turn to the competitive market may be to reduce the supply procurement term from its current six-month level. General Laws c. 164, §§ 1B(d) directs distribution companies to design their competitive solicitation for the procurement of default service supply so that "all bids shall include payment options with rates that remain uniform for periods of up to six months." In D.T.E. 99-60-B at 6-7, the Department interpreted the phrase "up to" as requiring that a fixed-price, six-month default service option be available to all default service customers. We recognized, however, that the words "up to six months" could be taken to mean any period from one month but not more than six months.<sup>18</sup>

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<sup>18</sup> The Department stated that "we believe the Legislature intended to extend to customers an option of price stability for "at least" six months. At the time, that conclusion  
(continued...)

At the time that D.T.E. 99-60-B was issued, the competitive market was relatively undeveloped for all customer classes. At the present time, an active competitive market has developed for larger customers. Because of this, we consider it appropriate to reevaluate the six-month pricing option as it relates to medium and large customers. A persuasive, though not yet convincing, case can be made for the proposition that a procurement term of one month would (1) provide efficient price signals to customers because the resulting prices would track wholesale market price on a monthly basis; (2) provide customers with an appropriate level of price certainty; and (3) provide appropriate protection from spot market price volatility. Under this approach, distribution companies would procure their default service supply one month in advance, on an on-going basis (e.g., companies would procure supply for May 2003 during April 2003). Customers, in turn, would know the level of default service prices for only the next month. As discussed above, customers that seek greater price certainty could appropriately turn to the competitive market for these protections. Although ongoing monthly procurements would likely increase the administrative costs incurred by distribution companies, the benefits of monthly procurements, in terms of supporting the continued development of the competitive market for larger customers, should outweigh these additional

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<sup>18</sup>(...continued)

seemed more consonant with the protective purposes of the 1997 Restructuring Act. D.T.E. 99-60-B at 6-7. However, we conclude that it is more appropriate to require price stability up to a maximum of six months. As discussed later, the protective purposes of the Act for smaller customers are better served with longer procurement terms.

costs. The Department expects that monthly procurements would become more routine, standardized, and less costly over time.

Although monthly default service supply procurements for larger customers may fully satisfy the objectives of this proceeding, we do not direct the distribution companies to adopt such an approach at this time. In order to allow us to better understand the logistics associated with monthly procurements, the Department will schedule a technical session to discuss these issues.<sup>19</sup> The technical session will be held at the Department's offices, One South Station, Boston, Massachusetts, at 10:00 a.m. on May 15, 2003.

C. Residential and Small C&I Customers

1. Summary of Comments

Many commenters support longer default service supply procurement terms for residential and small C&I customers as the best way to achieve stable and affordable default service prices (AIM Reply Comments at 2; Attorney General Comments at 6; Cape Light Compact Reply Comments at 10; ISO-NE Reply Comments at 8; MassCap Comments at 17; NSTAR Comments at 12). ISO-NE argues that procurement periods must be sufficiently lengthy to give default service suppliers the financial incentive to encourage their default service customers to pursue demand response actions (ISO-NE Reply Comments at 8). NSTAR suggests a procurement strategy where, every six months, a distribution company would purchase 50 percent of its default service load requirement for a one-year increment.

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<sup>19</sup> The Department seeks comments at the technical on the appropriateness of applying monthly procurements to small C&I customers as well.

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-15:**

Should the connecting utility have the authority to disconnect the distributed resource, which may also mean the disconnection of the customer? If so, under what circumstances or conditions would disconnection be allowed? Should the New Hampshire Public Utilities Commission be notified of the disconnection? If so, should the notification take place prior to the disconnection?

**Response:**

Yes, the utility should have the authority to disconnect the distributed resource for emergency conditions; routine maintenance, construction and repair; and for termination of contract. The PUC should only be notified of instances where the circumstances surrounding the disconnection are in dispute.

- a. **Emergency Conditions.** The utility should have the right to immediately and temporarily disconnect the Facility without prior notification in cases where there is an imminent threat to personnel or property, or a situation which would adversely affect the integrity of the system. No disconnect notice shall be required.
- b. **Routine Maintenance, Construction and Repair.** The utility should have the right to disconnect the Facility from the system when necessary for routine maintenance, construction and repairs. The Company should provide the distributed resource customer with reasonable notice consistent with the utility's planned outage notification protocols.
- c. **Forced Outages.** During any forced outage, the utility should have the right to suspend interconnection service in order to make repairs on the system. No disconnect notice should be required.
- d. **Non-Emergency Adverse Operating Effects.** The utility should have the right to disconnect the distributed resource if the distributed resource is having an adverse operating effect on the system or other customers, and the distributed resource customer fails to immediately take corrective action.
- e. **Modification of the Facility.** The utility should have the right to immediately suspend interconnection service in cases where material modification has been implemented without prior written authorization from the utility.

**State of New Hampshire  
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- f. **Termination of Service Agreement.** The Company should have the right to permanently disconnect the distributed resource upon termination of the Interconnection Service Agreement.

In addition, the distributed resource should be allowed to disconnect from the utility system and should be required to notify the utility prior to disconnecting, so that the utility can plan accordingly.

- a. **Emergency Conditions.** The distributed resource should have the right to immediately and temporarily disconnect the Facility without prior notification in cases where there is likelihood of endangerment to personnel or property. The distributed resource should notify the utility promptly of the emergency condition.
- b. **Routine Maintenance, Construction and Repair.** The distributed resource should have the right to disconnect the Facility from the system when necessary for routine maintenance, construction and repairs. The distributed resource should provide the utility with at least seven calendar days planned outage notification.

**Person Responsible:** Justin Eisfeller

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-16:**

If the distributed resource requires that additional reactive power must be added to the power system, which entity should pay for it? How should it be supplied? Does the size of the distributed resource alter your response?

**Response:**

Facilities less than 1 megawatt ("MW") should not be required to provide reactive capability, except as may be provided by the retail rate schedule and the Terms and Conditions for Distribution Service under which the Customer takes service.

Distributed resource facilities greater than or equal to 1 MW interconnected with the system should be required to provide reactive capability to regulate and maintain voltage at the point of customer connection as per NEPOOL requirements.

**Person Responsible:** Justin Eisfeller

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
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**Request No. Staff 1-17:**

For each primary distribution circuit voltage level, should there be a maximum distributed resource size? If so, please supply your reasoning.

**Response:**

Yes, as determined by the specific design of the respective system to which the distributed resource is to be connected. System design parameters such as conductor capacity, equipment capacity, system protection equipment, system voltage and reactive regulating equipment, radial or looped configuration, and interaction with existing loads (i.e. harmonic producing) all contribute to the maximum distributed resource size. Alternatively there could be a minimum size at which less study is necessary in order to determine whether any adverse system impact may occur. This approach may simplify the process of interconnection review.

**Person Responsible:** Justin Eisfeller

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-18:**

For each primary distribution circuit voltage level, should there be a limit to the number of distributed resources that can be placed on a circuit? If so, please supply your reasoning.

**Response:**

Yes, there should be a limit to the amount of distributed resource placed on a circuit in order to prevent adverse system impacts as a result of the interaction of the system and the distributed resource. The capacity of a given system to provide service to distributed resource is determined by the design of the specific system at the point of customer connection as mentioned in response to Staff 1-17. A limit could be applied to expedite the review of a distributed resource. For example, The Massachusetts's Uniform Standards for Interconnecting Distributed Generation – Revised Model Tariff<sup>1</sup> allows for several review expediting screens related to the number, or quantity of distributed resource on a circuit. More specifically,

- Distributed resource Customers using qualified inverter-based facilities with ratings less than 10 kW where the aggregate distributed resource capacity on the circuit is less than 7.5% of circuit annual peak load may qualify for the "Simplified Interconnection".
- The distributed resource Facility, in aggregation with other generation on the distribution circuit, will not contribute more than 10% to the distribution circuit's maximum fault current under normal operating conditions at the point on the high voltage (primary) level nearest the proposed point of customer connection may qualify for "Expedited Interconnection".

**Person Responsible:** Justin Eisfeller

**Date:** October 20, 2006

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<sup>1</sup> See Fitchburg Gas and Electric Light Company Interconnection Tariff Schedule IC provided in response to PSNH 1-7

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-19:**

For each primary distribution circuit voltage level, should there be a limit to the total installed capacity for distributed resources for a circuit regardless of size? If so, please supply your reasoning.

**Response:**

See response to Staff 1-18.

**Person Responsible:** Justin Eisfeller

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-20:**

Should there be requirements for initial testing of the interconnection? If so, should periodic inspections or tests of the interconnection be conducted? If periodic inspections or tests are required, what should be the frequency, who should bear the cost, and does the size of the distributed resource require a different response?

**Response:**

Yes, there should be requirements for commissioning tests at the initiation of the interconnection and periodically as defined in IEEE Standard 1547-2003. The distributed resource facility should be equipped with whatever equipment is required to perform these tests. The cost of these tests should be born by the distributed resource customer.

The distributed resource customer should also have the full responsibility for the proper periodic maintenance of its generating equipment and its associated control, protective equipment and interrupting devices which may include testing. The utility should have the right to monitor the periodic maintenance and/or testing performed.

For relays installed in accordance with the Northeast Power Coordinating Council Criteria for the Protection of the Bulk Power System, maintenance intervals shall be in accordance with such criteria. The results of these tests should be summarized by the distributed resource customer and reported in writing to the utility and/or the ISO as required.

**Person Responsible:** Justin Eisfeller

**Date:** October 20, 2006

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Public Utilities Commission**

Unitil Energy Systems, Inc.  
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Responses to Staff Data Requests - Set 1

**Request No. Staff 1-21:**

If a distributed resource requires a separate interconnection, what should be the accuracy of the billing meter? Does this requirement change as the size of the distributed resource increases?

**Response:**

The billing meter should meet the accuracy requirements outlined in the NHPUC 300 rules.

**Person Responsible:** Glenn Appleton

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-22:**

If a distributed resource does not require a separate interconnection and is connected to the system of the customer, what should be the accuracy of the customer meter?

**Response:**

The billing meter should meet the accuracy requirements outlined in the NHPUC 300 rules.

**Person Responsible:** Glenn Appleton

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-23:**

What records should the utility and the distributed resource retain and for what period of time? In your response, please also consider the dispute resolution process.

**Response:**

The utility and distributed resource should maintain all application information, application review notes, and study reports for a period of 3 years. UES does not understand the second sentence in the request. However, as indicated in Response No. 27, the Complaint Procedures in N.H. Rules of Admin. Proc. Puc 204 provide an adequate process for the resolution of disputes between the utility and the distributed resource.

**Person Responsible:** Justin Eisfeller

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-24:**

Should the utility be required to file pending interconnection status reports with the New Hampshire Commission? If so, what should be the content of the reports and at what frequency should they be filed?

**Response:**

No. The utilities provide a report of interconnected distributed resource net metered customers on an annual basis, and should not be required to provide pending interconnection reports.

**Person Responsible:** Justin Eisfeller

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-25:**

What charges for services would be candidates for a flat rate? Should those flat rates vary by utility or be applied to all utilities?

**Response:**

A number of services could be considered for a flat rate such as the distributed resource interconnection application review; review costs of smaller, more simplistic installations; meter installation, and distribution system interconnection service. The initial review of the application for completeness and determination of extent of study could be incorporated as a flat charge associated with the filing of the distributed resource application. This application flat charge might also include a checklist review of smaller installations that meet certain pre-described criteria. Meter installation costs, being fairly consistent based on size and type, could be incorporated into a flat charge. These charges could be the same for all utilities.

A distribution system, interconnection service charge (i.e. standby) would be similar to a demand charge relative to the cost to provide system interconnection service for the distributed resource. It should be specific to the utility providing service. Local, facility interconnection construction costs would be specific to the service requested.

**Person Responsible:** Justin Eisfeller and Karen Asbury

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-26:**

Would application of flat rate charges vary with the size of the distributed resource? If so, what should be the break point in terms of size of the distributed resource?

**Response:**

Yes, the application of flat rate charges would vary with the size and type of distributed resource. One logical breakpoint would be 25 kW, consistent with net-metered generation. Additional breakpoints could be established based on cost of review, cost of metering equipment, or service capacity. With respect to standby service, breakpoints should coincide with the retail tariff rate schedules.

**Person Responsible:** Justin Eisfeller and Karen Asbury

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-27:**

Should there be a dispute resolution process for differences between the utility and the distributed resource? If so, should that process be different for distributed resources of different sizes?

**Response:**

To the extent that this request calls for a legal opinion or conclusion, UES objects to the form of the request. Without waiving that objection, UES responds as follows:

UES believes that the Complaint Procedures in N.H. Rules of Admin. Proc. Puc 204 provide a sufficient dispute resolution process. The Complaint Procedures should not differ by resource size.

**Person Responsible:** Karen Asbury

**Date:** October 20, 2006

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-28:**

If there should be a dispute resolution process, should it be under the jurisdiction of the New Hampshire Public Utilities Commission, civil authorities, self resolved, or some combination of jurisdiction?

**Response:**

To the extent that this request calls for a legal opinion or conclusion, UES objects to the form of the request. Without waiving that objection, UES responds as follows:

Any dispute resolution process should be under the jurisdiction of the NHPUC.

**Person Responsible:** Karen Asbury

**Date:** October 20, 2006

# LEBOEUF, LAMB, GREENE & MACRAE LLP

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BEIJING

November 3, 2006

## BY HAND DELIVERY

Suzanne Amidon  
Staff Attorney  
New Hampshire Public Utilities Commission  
21 S. Fruit Street, Suite 10  
Concord NH 03301-2429

RE: DE 06-061-- Investigation into Federal Standards Pursuant to Energy Policy Act of 2005; Response to Commission Staff First Set of Data Requests

Dear Ms. Amidon:

On behalf of Unitil Energy Systems, Inc. please find a copy of the Company's Supplemental Response 1-12 to the New Hampshire Public Utilities Commission Staff's First Set of Data Requests in the above-referenced docket.

Also enclosed is a disk containing an electronic copy of the filing, as required by Section PUC 203.03 of the New Hampshire Code of Administrative Rules.

Suzanne Amidon  
Staff Attorney  
New Hampshire Public Utilities Commission  
November 3, 2006  
Page 2

Please do not hesitate to contact me if you have any questions concerning this response.

Sincerely,

  
Meabh Purcell

Enclosure

cc: Thomas Frantz, NHPUC  
George McCluskey, NHPUC  
Maureen Reno, NHPUC  
F Anne Ross, NHPUC  
Amanda Noonan, NHPUC  
Librarian, NHPUC  
Meredith Hatfield, OCA  
Service list via electronic mail

BS111862

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 1

**Request No. Staff 1-12:**

Does UES currently have the capability to bill large customers based on hourly prices? If not, please describe the changes that need to be made to UES' automated billing system in order to implement hourly pricing and provide an estimate of the time to implement such changes.

**Supplemental Response:**

Attachment Staff 1-12 Supplemental provides UES' report entitled "Investigation of Hourly Pricing" which was filed with the Commission on November 1, 2006 in Docket DE 05-064.

**Person Responsible:** David K. Foote

**Date:** November 3, 2006



November 1, 2006

**BY HAND-DELIVERY**

Debra A. Howland  
Executive Director and Secretary  
State of New Hampshire  
Public Utilities Commission  
21 S. Fruit St, Suite 10  
Concord, N.H. 03301-2429

Re: Unitil Energy Systems, Inc.  
Petition for Approval of Default Service Supply Proposal  
**Docket No. DE 05-084**

Dear Director Howland:

On behalf of Unitil Energy Systems, Inc. ("UES"), please find the original and seven copies of a report entitled "Investigation of Hourly Pricing" ("Report"). This Report is submitted in compliance with the requirement in paragraph no. 12 of the Settlement Agreement in the above-referenced docket, approved in Order No. 24,511, that UES "investigate the costs of acquiring the capability to price Default Service for Large G-1 customers based upon hourly wholesale market prices, as well as the potential impact on the development of the competitive retail market of offering such hourly pricing."

Thank you for your attention to this matter.

Sincerely,

Gary Epler  
Attorney for Unitil Energy Systems, Inc.

Enclosure

cc: All Parties

Gary Epler  
Senior Counsel  
6 Liberty Lane West  
Hampton, NH 03842-1720  
Phone: 603-773-6440  
Fax: 603-773-6640  
Email: epler@unitil.com

**NHPUC Docket No. DE 05-064**

**Unitil Energy Systems, Inc.  
Investigation of Hourly Pricing**

**November 1, 2006**

## **Introduction**

Pursuant to the Settlement Agreement in DE 05-064, Unitil Energy Systems, Inc. ("UES" or the "Company") has collected the following information relating to the costs it would incur to acquire the capability to price default service supply to large G1 customers based upon hourly wholesale market prices. Large G1 customers are those customers whose average metered monthly 15 minute peak kVA demand equals 1,000 kVA or greater.

Currently, there are twelve large G1 customers on the UES system. Of these customers, three currently receive default service and nine receive third party supply. One of the nine customers currently receiving third party supply is scheduled to return to default service in early November 2006, which will increase the number of large G1 customers on default service to four. Two of the customers receiving third party supply are actually self-supply customers taking service directly from the wholesale market and they are already obtaining hourly market rates.

## **Primary Findings**

UES estimates that it could develop and implement a system capable of billing an hourly priced default service to large G1 customers at an initial cost of approximately \$242,000 plus an ongoing annual administrative cost of approximately \$51,300. The estimated cost to implement and administer hourly

billing for large G1 customers for the first year is \$293,000, which equates to approximately \$24,400 per eligible customer. As described below, these cost estimates reflect the expected requirements to design, implement and test the needed systems.

UES anticipates no measurable impact on the competitive retail market from offering hourly priced default service supply to its large G1 customers. Given that only three of the twelve large G1 customers have not yet chosen a competitive retail supplier, the potential for increasing competitive retail activity is limited. These customers have been exposed to market-based, fixed monthly prices for a relatively short period of time, 18 months, and have already largely migrated to a competitive supplier. Implementing hourly default service pricing for large G1 customers might discourage some large G1 customers from returning to default service. However, UES notes that there may be some appeal to hourly pricing among the large G1 customers since two of these customers have availed themselves of self-supply.

The self-supply option that customers already have provides a cost-effective means of accessing hourly pricing. Large G1 customers can self-supply for an annual fee that ranges between \$1,000 and \$2,500, depending on the size of the customer's load, a price significantly lower than the cost at which UES can implement and administer hourly billing for large G1 customers. Self-supply

customers are billed directly by ISO New England at the hourly spot market price for their hourly loads and are also periodically billed for their capacity requirements and ancillary and administrative services.

### **Costs to Accommodate Hourly Billing**

UES has identified the following incremental cost estimates that would be incurred to implement an hourly retail billing system for large G1 customers. The scope of work identified is categorized within the following components: System Design and Programming; Meter Data Access; Testing and Documentation; Staff Training; Customer Outreach; and On-going Staffing requirements. The total contact time required to implement the hourly billing system is six months, subject to staff availability. If UES were to implement hourly retail billing for large G1 customers, the project would need to be scheduled around other scheduled projects that also utilize the required personnel. The specific costs associated with each of the components identified below are detailed on Attachment 1.

#### **System Design and Programming**

System Design and Programming requirements involve the customization of the Company's current retail customer information and billing system in order to appropriately invoice customers based on hourly pricing. Implementing hourly billing for large G1 customers would require a new special-process billing application which utilizes existing systems to acquire customer hourly load data, import and manage hourly pricing information, determine billing outputs, export

these outputs to the existing customer billing system, and to offer the hourly billing details to customers over the web under the Company's tariff for Enhanced Metering Service – Interval Data Service. These changes would not entail changes to vendor systems so the costs were determined using internal staff and one contract programmer. Specifically, UES estimated that the design and programming of the system would cost \$58,000 and the cost to interface this solution into the Customer Information System (CIS) and Metering systems, and to make changes to the revenue control mechanisms, would be \$92,500. The modules that would comprise the hourly billing system include: the Energy Management Information System, an hourly pricing table, a bill processing module and a website reporting module. Together, the system design and programming would cost \$150,500.

Energy Management Information System (EMIS) is the Company's existing wholesale load reporting data management system. The hourly billing system would need a new interface with the EMIS system to acquire the customer's hourly usage data which originates in the Company's MV90 metering system. This module would manage a process to acquire the raw usage data, check the validity and completeness of the data, account for any possible daylight savings time issues, account for any possibly required usage estimates due to meter failures or other irregularities, and manage a process to close this data each billing period in order to export the data to the Company billing system for

processing. The interface would require the capability to allow for re-billing of previously closed billing periods as needed.

An Hourly Pricing Table would also need to be developed to accommodate importing, verification and management of hourly pricing data. As envisioned, this module would facilitate the import of comma separated value files currently available from the ISO website and would allow manual entry and editing of hourly data in open billing periods as needed. This module would also manage any supplemental billing information that might be needed (adders, loss coefficients, etc.) to calculate customer's bills.

The Bill Processing Module would use the customer's hourly usage data, hourly pricing information, and any other required inputs to calculate the customer's bill for the billing period. This module primarily would calculate and export the billing data to the Company's existing billing system, archive the billing data so it can be presented to the customers via the website, and will include any functions needed to re-bill for prior closed billing periods.

The Web Reporting Module would be modified to allow customers to log into a secure website using secure passwords to review their hourly usage history, hourly billed pricing, as well as the hourly billing details used to determine the

billed amounts. The Company currently offers customers access to their hourly usage data via the Enhanced Metering Services tariff.

### **Meter Data Access**

For purposes of facilitating hourly default service supply to large G1 customers, there are no enhancements required to the Company's existing meter reading systems. However, as discussed below in the "Load Reporting Requirements" section, customers who do not currently provide a phone line so that their interval data can be processed on a daily basis, rather than monthly, might choose to do so. The cost of a new phone line and service may vary depending on the existing service at the customer's facility. UES estimates the cost of new phone lines wired to the customer meter at \$175 and the monthly cost of phone service at \$30, or \$360 annually. These costs are identified here, but are not included in the system total costs because they are not required and UES assumes that each customer would bear these costs directly if they decide to have their loads reported daily.

### **Testing, Training and Outreach**

Testing and Documentation would involve all functionalities associated with the new billing system, the system interfaces, and the revenue control mechanisms. Testing and documentation requirements would be consistent with the current practices outlined in the Company's Internal Controls documentation.

Appropriate time and work to assess and ensure the operating effectiveness of the new system and financial reporting would cost an estimated \$59,000.

Staff Training would involve the Company's customer service representatives, billing associates and business development staff. The total cost estimate for designing, preparing and performing the training is \$7,300.

Customer Outreach would consist of several components including: analysis of the customer data; development and distribution of the education materials; organization of group and individual customer meetings and the marketing of the data analysis tools for the customers. The total estimated cost for these efforts is \$25,000.

On-going Staff required for this system would involve a part time position to monitor the system effectiveness and administer changes as required. The total estimated cost for this additional staff is \$51,300.

The total estimated implementation cost is \$242,000 while the total estimated annual recurrent charge to operate and maintain the program is \$51,300. Total estimated costs are therefore \$293,300 to implement and administer the system for the first year.

## **Pricing and Market Considerations**

Any default service power supply product UES might provide to customers must be obtained in the wholesale marketplace and be processed through ISO New England. In this section, UES highlights procurement considerations and load reporting requirements. In addition, the potential impact on the competitive retail market of providing hourly priced default service to large G1 customers and the availability of self-supply are discussed.

### **Procurement Considerations**

If UES were required to provide large G1 customers with an hourly default service supply, UES anticipates that it would be difficult to obtain the large G1 hourly priced supply as a separate offering in the wholesale marketplace. UES estimates the current load of large G1 customers relying on default service to be approximately 7MW. If all large G1 customers were to return to default service, this value would rise to approximately 27MW; if the three or four remaining default service customers choose a third party supplier, and no large G1 customers return to default service, this value would drop to 0MW.

Given the concern about obtaining a separate supply for large G1 hourly pricing, UES expects it would bundle an hourly priced large G1 default service supply requirement with a fixed price service for small G1 customers. The bundled G1 solicitation would request fixed monthly pricing for small G1 customers, as is the process today, and would require suppliers to bid a fixed monthly adder to cover

non-energy related supply costs for large G1 customers. The supplier would be compensated for small G1 service provided at the fixed price and for large G1 service provided at the hourly real time price for the New Hampshire load zone plus the fixed monthly adder.

UES anticipates that such a product could be obtained in today's marketplace. The various data and documents that comprise the Request For Proposals (RFP) package UES issues to the market would require modification in order to implement such a change. In addition, the computation and verification of supplier invoices would be somewhat more complicated. The likelihood of incurring incremental legal expense that might arise from negotiations with suppliers over unfamiliar contract language is another consideration.

### **Load Reporting Requirements**

To facilitate hourly priced default service to large G1 customers, UES would separately report default service loads for large G1 customer and for small G1 customers. This would not create additional costs.

The meters utilized for G1 customers are equipped with solid state memory for storage of interval data and a modem for telephone communications. UES accesses large G1 customer interval data on a daily basis if the customer maintains a phone line wired to the meter. Currently, four of the twelve large G1

customers have existing phone lines. For these customers, the Company's MV-90 system calls the customer's meter daily between the hours of 12:00am and 4:00am and retrieves interval data from the meter for the previous twenty-four hour period. The MV-90 system then translates the data and sends it to the Energy Measurement Information System (EMIS) for processing and reporting to the systems responsible for load reporting to ISO New England and for permanent storage. Hourly loads for large G1 customers with active phone lines are converted to wholesale values and included in the daily reporting of loads to ISO New England.

UES accesses interval data for large G1 customers who do not have active phone lines on their meters on a monthly basis by manual probing of the meters. The wholesale hourly loads reported each day to ISO New England for large G1 customers who do not maintain active phone lines are based on load profiling estimates. When the customer's meter is probed, the set of hourly loads for customer's monthly billing period is sent to the EMIS system for processing and reporting to the systems responsible for load reporting to ISO New England and for permanent storage. When actual metered interval data are available, the initial estimates are replaced.

The daily reporting of loads to ISO New England provides the volumetric basis for the initial settlement of wholesale cost to supply the load. These costs accrue

to the default service supplier. A resettlement of the wholesale cost is conducted not later than 90 days after the end of the month of service. The ISO New England resettlement of default service supply costs is based on actual interval meter reads regardless of whether the customer maintains a phone line, and has their actual interval data reported each day, or not. Thus, whether or not a large G1 customer maintains a phone line and has its interval data reported daily does not impact the final supply obligations of the default service supplier. This initial settlement and resettlement process is identical to the current process and the introduction of hourly retail billing to customers would not introduce any significant or systematic reconciliation within this process.

Retail billing of the customer by UES would not be impacted whether or not the customer maintains a phone line since UES would only bill the customer once monthly on the basis of the customer's actual interval metered data. However, UES can accommodate any large G1 customer who desires to have their interval data read and reported each day so long as the customer provides an active phone line.

### **Potential Impact on Competitive Retail Market**

In considering the potential impact of providing large G1 customers with an hourly priced default service product, one must first assess the current state of retail choice for the subject customers. Currently, there are three large G1

customers receiving default service supply and this number is expected to grow to four in early November as one customer has initiated a transaction to return to default service. The population of large G1 customers is currently twelve. Thus, seventy-five percent of large G1 customers have taken third party supply. UES expects that introducing hourly priced default service for large G1 customers might move the remaining three or four customers to third party supply and might discourage customers from returning to default service supply. However, introducing hourly priced default service to these customers is not expected to influence the competitive retail market, which is to say that new suppliers are not expected to enter the market and existing suppliers are not expected to expand their presence.

As mentioned in the Introduction, customers do have the ability to self-supply. Customers do not need to utilize the Electronic Data Interchange (EDI) system to do so, rather customers can initiate a transaction to self-supply, or return to default service, by simply calling the UES customer service center. The annual membership fee assessed by ISO New England is \$500 plus an additional \$500 per MW of the customer's annual peak load in the prior year. Thus, for a 1MW customer (the smallest possible large G1 customer), the annual fee would be \$1,000. For a 4MW customer (the largest large G1 customer), the annual fee would be \$2,500.

## **Attachment 1**

**Unitil Energy Systems, Inc.**  
**Implementation and Administration Costs for Billing Hourly Interval Data**

Notes:

<b><u>Hourly Billing System programming (Plan, Design, Modify, Interface and Test)</u></b>			
1	Cost of Labor per Hour for Contract Programmer	\$ 69.00	1
2	Estimated Time Required	<u>840.00</u>	
3	<b>Total Cost for Hourly System Programming</b>	<b>\$ 57,960.00</b>	
 <b><u>CIS Billing System (Plan, Design, Interface, Bill Print, Revenue Reports, Test)</u></b>			
4	Cost of Labor per Hour for Senior Systems Analyst	\$ 41.11	2
5	Estimated Time Required	<u>800.00</u>	
6	Cost of Labor	\$ 32,888.00	
7	Labor-Related Overheads	\$ <u>39,465.60</u>	3
8	Total Cost for Senior Systems Analyst	\$ 72,353.60	
9	Cost of Labor per Hour for Customer Systems Analyst	\$ 28.64	2
10	Estimated Time Required	<u>320.00</u>	
11	Cost of Labor	\$ 9,164.80	
12	Labor-Related Overheads	\$ <u>10,997.76</u>	3
13	Total Cost for Associate Customer Systems Analyst	\$ 20,162.56	
14	<b>Total Cost for CIS Programming</b>	<b>\$ 92,516.16</b>	5
 <b><u>Revenue Testing, Documentation to Internal Controls, Internal Audit</u></b>			
15	Cost of Labor per Hour for Financial Analysts	\$ 28.64	2
16	Estimated Time Required	<u>340.00</u>	
17	Cost of Labor	\$ 9,737.60	
18	Labor-Related Overheads	\$ <u>11,685.12</u>	3
19	Total Cost for Financial Analyst	\$ 21,422.72	
20	Cost of Labor per Hour for Billing and Collection Manager	\$ 41.11	2
21	Estimated Time Required	<u>260.00</u>	
22	Cost of Labor	\$ 10,688.60	
23	Labor-Related Overheads	\$ <u>12,826.32</u>	3
24	Total Cost for Billing and Collection Manager	\$ 23,514.92	
25	Cost of Labor per Hour for Senior Accountant	\$ 32.12	2
26	Estimated Time Required	<u>80.00</u>	
27	Cost of Labor	\$ 2,569.60	
28	Labor-Related Overheads	\$ <u>3,083.52</u>	3
29	Total Cost for Senior Accountant	\$ 5,653.12	
30	Cost of Labor per Hour for Internal Auditor	\$ 41.11	2
31	Estimated Time Required	<u>60.00</u>	
32	Cost of Labor	\$ 2,466.60	
33	Labor-Related Overheads	\$ <u>2,959.92</u>	3
34	Total Cost for Internal Auditor	\$ 5,426.52	
35	Cost of Labor per Hour for Director Customer Services	\$ 54.52	2
36	Estimated Time Required	<u>25.00</u>	
37	Cost of Labor	\$ 1,363.00	
38	Labor-Related Overheads	\$ <u>1,635.60</u>	3
39	Total Cost for Director Customer Services	\$ 2,998.60	
40	<b>Total Cost for Revenue Testing and Documentation</b>	<b>\$ 59,015.88</b>	6

## Implementation and Administration Costs for Billing Hourly Interval Data

**Training Customer Service Center and Business Development Personnel**

41	Cost of Labor per Hour for Sr. Business Development Executives (2)	\$	41.11	2
42	Estimated Time @ 4 hours per session		<u>8.00</u>	
43	Cost of Labor	\$	328.88	
44	Labor-Related Overheads	\$	<u>394.66</u>	3
45	Total Cost for Sr. Business Key Account Executive	\$	723.54	
46	Average Cost of Labor for Customer Service Staff	\$	16.65	2
47	Total Time involved for training Customer Service Staff @ 4 hours per session		<u>80.00</u>	4
48	Cost of Labor	\$	1,332.00	
49	Labor-Related Overheads	\$	<u>1,598.40</u>	3
50	Total Cost for Customer Service Staff	\$	2,930.40	
51	Cost of Labor for Billing and Collection Manager (conducting the training)	\$	41.11	2
52	Estimated Time Required		<u>40.00</u>	
53	Cost of Labor	\$	1,644.40	
54	Labor-Related Overheads	\$	<u>1,973.28</u>	3
55	Total Cost for Customer Service Staff	\$	3,617.68	
56	<b>Total Cost To Train Customer Service Personnel</b>	<b>\$</b>	<b>7,271.62</b>	<b>7</b>
	<b>Customer Outreach (Customer visits, printed material)</b>			
57	Cost of Labor per Hour for Senior Business Development Executive (2)	\$	41.11	2
58	Estimated Time Required		<u>250.00</u>	
59	Cost of Labor	\$	10,277.50	
60	Labor-Related Overheads	\$	<u>12,333.00</u>	3
61	Total Cost for Business Development Staff	\$	22,610.50	
62	Cost for printed materials	\$	2,500.00	
63	<b>Total Cost for Customer Outreach</b>	<b>\$</b>	<b>25,110.50</b>	<b>8</b>
	<b>Recurrent Annual Administration Costs</b>			
64	Cost of Labor per Hour for Senior Billing Representative	\$	17.94	2
65	Estimated hours annually		<u>1300.00</u>	9
66	Cost of Labor	\$	23,322.00	
67	Labor-Related Overheads	\$	<u>27,986.40</u>	3
68	<b>Total Annual Salary</b>	<b>\$</b>	<b>51,308.40</b>	
69	<b>Total Cost to Implement the Program</b>	<b>\$</b>	<b>241,874.16</b>	<b>10</b>
70	<b>Total Cost to Administer the Program Annually</b>	<b>\$</b>	<b>51,308.40</b>	<b>11</b>
71	<b>Total Implementation and Administration Costs (first year)</b>	<b>\$</b>	<b>293,182.56</b>	<b>12</b>

1 Based on 2006 salary for contract programmer.

2 Based on 2006 average midpoint salary ranges for Unitil Service Corp employees.

3 Based on Unitil Service Corp overhead rate of 120%

4 Based on average wages for 20 Customer Service employees

5 Line 8 + Line 13

6 Line 19 + Line 24 + Line 29 + Line 34 + Line 39

7 Line 45 + Line 50 + Line 55

8 Line 61 + Line 62

9 Based on 25 hours per week position

10 Line 3 + Line 14 + Line 40 + Line 56 + Line 63

11 Line 68

12 Line 69 + Line 70



August 30, 2007

**BY OVERNIGHT MAIL**

Suzanne Amidon  
Staff Attorney  
New Hampshire Public Utilities Commission  
21 S. Fruit Street, Suite 10  
Concord NH 03301-2429

RE: DE 06-061 Investigation into Federal Standards Pursuant to  
Energy Policy Act of 2005

Response to Commission Staff Second Set of Data Requests

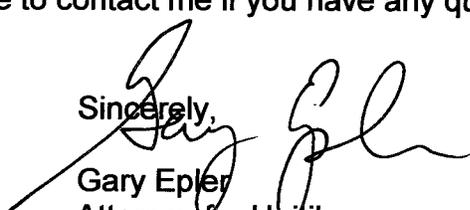
Dear Attorney Amidon:

On behalf of Unitil Energy Systems, Inc. ("Unitil"), please find the original and four copies of the Company's responses to the New Hampshire Public Utilities Commission Staff's Second Set of Data Requests in the above-referenced docket.

An electronic copy of the filing, as required by Section PUC 203.03 of the New Hampshire Code of Administrative Rules, is being sent by e-mail.

Please do not hesitate to contact me if you have any questions concerning this response.

Sincerely,

  
Gary Epler  
Attorney for Unitil

Enclosure

Gary Epler  
Chief Regulatory Counsel  
6 Liberty Lane West  
Hampton, NH 03842-1720  
Phone: 603-773-6440  
Fax: 603-773-6640  
Email: epler@unitil.com

cc: George McCluskey, NHPUC  
Meredith Hatfield, Consumer Advocate  
Librarian, NHPUC  
Service list via electronic mail

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 2

**Request No. Staff 2-1:**

Please provide a breakdown by rate schedule of the number of delivery service customers served by Unitil as of December 31, 2006. In addition, provide the number of customers under each rate schedule with interval metering installed.

**Response:**

The table below shows the number of customers and interval meters, by rate class.

<u>Rate Schedule</u>	<u>Customers as of 12/31/06</u>	<u>Interval Meters</u>
Domestic	62,503	~200
Domestic Off-Peak Water Heating	100	0
G2	9,677	~195
G2 – kWh meter	569	5
G2 – Quick Recovery WH/SH	330	0
G2 Off-Peak Water Heating	1	0
G1	155	155
OL	1,877	0
Total	75,212	555

**Person Responsible:** Douglas Debski

**Date:** August 31, 2007

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 2

**Request No. Staff 2-2:**

Please provide a breakdown by rate schedule of the per customer average demand in kW in 2006.

**Response:**

The table below shows the average monthly billing demand in kW (kVA for G1 customers) in 2006.

<u>Rate Schedule</u>	<u>Average Monthly Billing Demand</u>
Domestic	n/a
Domestic Off-Peak Water Heating	n/a
G2	11.5 kW
G2 – kWh meter	n/a
G2 – Quick Recovery WH/SH	n/a
G2 Off-Peak Water Heating	n/a
G1	556.9 kVA
OL	n/a

**Person Responsible:** Douglas Debski

**Date:** August 31, 2007

**State of New Hampshire  
Public Utilities Commission**

Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 2

**Request No. Staff 2-3:**

Does Unitil currently have the capability to meter all large commercial and industrial customers based on time-of-use prices? If yes, provide the number of customers by rate schedule that have the appropriate metering equipment installed. If not, please provide a detailed description of the changes needed to Unitil's metering capabilities in order to apply time-of-use pricing and provide an estimate of the time and cost to implement such changes. The cost should include necessary communications costs and the net book value of existing meters (net of salvage) deemed to be incapable of measuring time-of-use loads. The cost should also be net of any operational savings made possible with the new metering system.

**Response:**

Unitil meters all of its large commercial and industrial customers (G1, over 200 kVA) with advanced meters which provide 15-minute interval data and are equipped with AMI endpoints. UES has a total of 156 G1 customers.

Unitil is presently in the final stages of its AMI implementation which is projected to be substantially complete in the first quarter of 2008, providing metering requirements for existing tariffs. The AMI system includes time-of-use ("TOU") measurement capability for up to four (4) time periods per day. This basic TOU functionality has been confirmed during acceptance testing of the system and is intended to be utilized for potential TOU applications.

Additional work required to apply TOU includes: (1) AMI Command Center administration requiring actual endpoint configuration design, billing test and deployment (estimated time: 3 months), and (2) Field visits to each customer to perform meter and endpoint programming changes (estimated time: 2 months).

The total metering cost for administration and field activities is projected to be approximately \$40,000, with a total implementation time of approximately 5 months. See Attachment Staff 2-3 for a detailed cost breakdown.

**Person Responsible:** Glenn Appleton

**Date:** August 31, 2007

**Unitil Energy Systems, Inc.**  
**Estimated Metering Costs for Time-of-Use Implementation**

Notes:

<b><u>AMI Command Center Administration</u></b>		<b><u>Hours/Cost</u></b>	
<b>Design, Deployment, Testing</b>			
1	Average Cost of Labor per Hour	\$ 45	1
2	Estimated Time Required (hours)	130	
3	Cost of Labor	\$ 5,874	
4	Labor-Related Overheads	\$ 6,403	3
5	Estimated Cost	\$ 12,277	
6	<b><u>Total AMI Command Center Administration</u></b>	<b><u>\$ 12,277</u></b>	
<b><u>Meter &amp; Endpoint Programming</u></b>			
<b><u>Meter &amp; Endpoint Programming - Labor</u></b>			
7	Cost of Labor per Hour	\$ 29	2
8	Estimated Time Required per meter (hours)	0.85	
9	Cost of Labor	\$ 3,798	
10	Labor-Related Overheads	\$ 6,608	4
11	Total Labor	\$ 10,406	
<b><u>Meter &amp; Endpoint Programming - Materials/Trans.</u></b>			
12	T switch cost per meter	\$ 35	
13	Transportation expense per meter 8 mi per location * \$.70/mile	\$ 6	
14	Subtotal	\$ 41	
15	Overheads	\$ 69	5
16	Total per meter	\$ 110	
17	Number of meters	156	
18	Total other	\$ 17,101	
19	<b><u>Total Meter &amp; Endpoint Programming</u></b>	<b><u>\$ 27,506</u></b>	
20	<b><u>Total Estimated Metering Costs</u></b>	<b><u>\$ 39,784</u></b>	

Notes:

1. Based on 2007 average midpoint salary ranges for Unitil Service Corp employees performing these functions.
2. Based on Schedule of wages effective 05/27/07
3. Based on Unitil Service Corp 2006 average overhead rate of 109%
4. Based on UES 2006 average overhead rate of 174%
5. Based on UES 2006 average overhead rate of 170%

**State of New Hampshire  
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Unitil Energy Systems, Inc.  
DE 06-061  
Responses to Staff Data Requests - Set 2

**Request No. Staff 2-4:**

Does Unitil currently have the capability to bill all large commercial and industrial customers based on time-of-use prices? If not, please provide a detailed description of the changes needed to Unitil's billing system in order to apply time-of-use pricing and provide an estimate of the time and cost to implement such changes. Please provide all support for the cost estimate.

**Response:**

Unitil currently does not have the capability to bill all large commercial and industrial customers on time-of-use ("TOU") prices. Unitil estimates that the development and implementation of a system capable of billing customers on TOU prices will require an initial capital investment cost ranging from approximately \$200,000 to \$250,000, plus an ongoing annual administration cost of approximately \$128,000.

The scope of work identified to implement a TOU capable billing system is categorized within the following components: Meter System Interface to Billing System, Billing System Design and Programming; Internal Revenue Reporting, Customer Data Management and On-going Staffing requirements.

The total estimated time required to implement the changes required to adequately bill customers, report revenue, and to present the data to customers is twelve months, subject to resource availability. Unitil anticipates that resources required to implement the changes would be not be available until the full deployment of the AMI projects is completed, which is anticipated in the first quarter of 2008. The estimated costs associated with each of the components identified above are detailed in Attachment Staff 2-4.

**Person Responsible:** Mark Lambert

**Date:** August 31, 2007

**Unitil Energy Systems, Inc.**  
**Estimated Implementation and Administration Costs for Billing Time-of-Use Rates**

		<u>Range of Hours and Cost</u>		Notes:
<b><u>Meter Interface and Feeds into the Billing System (Plan, Design, Modify, Interface and Test)</u></b>				
1	Cost of Labor per Hour, contract	\$ 100	\$ 100	1
2	Estimated Range of Time Required (hours)	<u>200</u>	<u>250</u>	
3	<b>Estimated Range for Meter Interface</b>	<b>\$ 20,000</b>	<b>\$ 25,000</b>	
<b><u>CIS Billing System (Plan, Design, Interface, Modify, Bill Print, Test)</u></b>				
4	Cost of Labor per Hour, contract	\$ 100	\$ 100	1
5	Estimated Range of Time Required (hours)	<u>600</u>	<u>750</u>	
6	<b>Estimated Range for CIS Programming</b>	<b>\$ 60,000</b>	<b>\$ 75,000</b>	
<b><u>Internal Revenue Reporting (Plan, Design, Interface, Modify, Test, Document)</u></b>				
7	Average Cost of Labor per Hour	\$ 36	\$ 36	2
8	Estimated Range of Time Required	<u>1,360</u>	<u>1,700</u>	
9	Cost of Labor	\$ 49,179	\$ 61,474	
10	Labor-Related Overheads	<u>\$ 53,605</u>	<u>\$ 67,007</u>	3
11	<b>Estimated Range for Revenue Reporting</b>	<b>\$ 102,785</b>	<b>\$ 128,481</b>	
<b><u>Customer Data Management/Internal and External Web (Plan, Design, Test)</u></b>				
12	Cost of Labor per Hour, contract	\$ 100	\$ 100	1
13	Estimated Range of Time Required	<u>160</u>	<u>200</u>	
14	<b>Estimated Range for Customer Data Management</b>	<b>\$ 16,000</b>	<b>\$ 20,000</b>	
<b><u>Recurrent Annual Administration Costs (Customer Relationship and Rate Management)</u></b>				
15	Cost of Labor per Hour	\$ 29		2
16	Hours annually	<u>2,080</u>		
17	Cost of Labor	\$ 61,131		
18	Labor-Related Overheads	<u>\$ 66,633</u>		3
19	<b>Total Annual Administration Costs</b>	<b>\$ 127,764</b>		
20	<b>Total Estimated Range to Implement the Program</b>	<b>\$ 198,785</b>	<b>\$ 248,481</b>	4
21	<b>Total Estimated Cost to Administer the Program Annually</b>	<b>\$ 127,764</b>	<b>\$ 127,764</b>	5
22	<b>Total Estimated Range - Implementation and Administration (Year 1)</b>	<b>\$ 326,549</b>	<b>\$ 376,245</b>	6

Notes:

1. Based on 2007 salary for contract programmer performing this function.
2. Based on 2007 average midpoint salary ranges for Unitil Service Corp. employees performing these functions.
3. Based on Unitil Service Corp. 2006 average overhead rate of 109%
4. Line 3 + Line 6 + Line 11 + Line 14
5. Line 19
6. Line 20 + Line 21