

**STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION**

DE 06-061

**INVESTIGATION INTO IMPLEMENTATION OF
THE ENERGY POLICY ACT OF 2005**

Order Following Hearing

ORDER NO. 24,819

January 22, 2008

APPEARANCES: Gerald M. Eaton, Esq. on behalf of Public Service Company of New Hampshire; Alexandra E. Blackmore, Esq. on behalf of Granite State Electric Company d/b/a National Grid; Gary M. Epler, Esq. on behalf of Unitil Energy Systems, Inc.; August Fromuth on behalf of Halifax American Energy Company; Rubin and Rudman LLP by Karla J. Doukas, Esq. on behalf of Wal-Mart Stores East, L.P.; Pennti Aalto *pro se*; Amy L. Ignatius, Esq. on behalf of the New Hampshire Office of Energy and Planning; Office of Consumer Advocate Meredith A. Hatfield, Esq. on behalf of residential ratepayers; and Suzanne G. Amidon, Esq. on behalf of Commission Staff.

I. PROCEDURAL HISTORY

This docket commenced in April 2006 when the Commission issued an Order of Notice announcing the beginning of an investigation into whether to adopt new energy standards contained in the federal Energy Policy Act of 2005 (EPAct).¹ Specifically, the Energy Policy Act amends the Public Utility Regulatory Policies Act (PURPA) by directing state utility commissions to decide whether to implement the congressionally approved standards concerning net metering, diversity of fuel sources, fossil fuel generation efficiency, time-based metering and communication (also called “smart metering” and “advanced metering infrastructure” or “AMI”), and interconnection.

A prehearing conference was held on May 16, 2006, and following a number of technical sessions, the parties and Staff developed a document which delineated the proposed scope of the

¹ The five standards are codified as 16 USC §2601 (d) (11), (12), (13), (14) and (15).

investigation, filing the proposal with the Commission on July 25, 2006. On August 4, 2006, the Commission approved the scoping document, and accepted the recommendation of the parties and Staff to limit the initial phase of the docket to time-based metering and interconnection.²

On September 14, 2006, the Commission issued a secretarial letter which established a procedural schedule and directed the parties and Staff to file comments on the issues in the scoping document. Pursuant to the procedural schedule, the Parties and Staff filed reply comments on November 3, 2006. Subsequent to further proceedings outlined therein, on June 22, 2007, the Commission issued Order No. 24,763, adopting the “smart metering” standards and ordering the state’s electric distribution companies to file draft tariffs that included time-based rates for all retail consumers taking default service.³

On July 23, 2007, Public Service Company of New Hampshire (PSNH) filed a Motion for Rehearing of Order No. 24,763 pursuant to RSA 541:3. In its motion, PSNH contended that (1) the order created a “standard, or other statement of general applicability,” or administrative rule, without following the rule-making provisions of the Administrative Procedure Act, RSA 541-A, and (2) the Commission had not held a hearing to determine whether to adopt the smart metering standard as required by PURPA. *See* 16 USC § 2621(b). Both Unitil Energy Systems, Inc. (UES) and Granite State Electric Company d/b/a National Grid (National Grid) expressed agreement with PSNH’s motion.

In response, the Commission issued Order No. 24,785 (August 31, 2007) scheduling a hearing for October 10, 2007 to receive evidence regarding the issues identified in the scoping document. In addition, the Commission clarified that, in issuing Order No. 24,763, it had

² For a complete procedural background, please refer to Order No. 24,763 (June 22, 2007).

³ The order also directed the parties and Staff to make recommendations regarding the implementation of an interconnection standard.

intended simply to establish a policy direction of instituting time-based rates and had contemplated that implementation of those rates would be accomplished through later adjudication or rulemaking.

Pursuant to Order No. 24,785, National Grid, UES and PSNH submitted prefiled direct testimony on September 17, 2007. The parties and Staff met in technical session on October 2, 2007. On September 21, 2007, the Commission issued a secretarial letter clarifying the procedures for the October 10 hearing and offering parties the opportunity to adopt comments previously filed in September and November of 2006. The letter included an attached bibliography of documents related to the issue of time-based metering and rates.

Halifax-American Energy Company sought intervention on October 1, 2007 (ultimately granted at hearing) and filed comments on October 9, 2007. Also on October 9, 2007, UES filed supplemental testimony. The hearing was held on October 10, 2007 as scheduled. The Parties and Staff filed closing statements on October 26, 2007.

II. POSITIONS OF THE PARTIES AND STAFF

A. Public Service Company of New Hampshire

PSNH expressed concern about the time and costs the Company would incur if it were required to implement time-based rates, both for installing an advanced metering system and for modifying the current billing system to implement the rates. In addition, PSNH questioned whether the implementation of time-based rates would result in any benefits. PSNH opined that customers are more likely to favor stable rates than rates that varied by time-of-use or real-time priced rates, but offered no specific evidence that customers would favor stable rates if a time-based rate offered customers an opportunity to save on their electric bills.

For small commercial and residential customers, PSNH estimated that the capital costs associated with the installation of meters to allow time-of-use pricing would be \$12 million, with an annual revenue requirement of \$2 million. PSNH agreed that the approximate cost for such customers to support the meters would be \$5.00 per month.

With respect to its billing system for small commercial and residential customers, PSNH testified that it was in the process of replacing its automated customer information service (CIS) system with a new system referred to as the "C2 System." In response to questions, PSNH stated that it was replacing the existing system because it is 30 years old and based on an antiquated platform that is increasingly difficult to maintain and because its parent company, Northeast Utilities, had decided to install a single customer information system for all of its subsidiaries. PSNH testified that its affiliate Connecticut Light & Power (CL&P) uses the C2 System. Upon questioning by Staff, PSNH acknowledged that the C2 System would support time-of-use pricing on a peak, off-peak and shoulder-use basis. PSNH stated that, to implement real-time pricing, as opposed to time-of-use pricing, the company would have to modify the C2 System and that the cost and time to modify the system is unknown.

PSNH said that it had already installed advanced meters with its large commercial and industrial customers, and, therefore, would not incur any metering costs if the Commission ordered it to bill such customers with a time-based rate. However, PSNH estimated that it would take two years and cost \$2 million to modify the Large Power Billing (LPB) program to bill on a time-of-use basis. PSNH stated that, assuming the \$2 million is a correct estimate, the cost for each large commercial and industrial customer, including capital costs, would be about \$30 to \$35 per month.

In its closing statement, PSNH contended that time-of-use or real-time pricing should be offered on an optional basis for a limited number of large power customers who already have the necessary metering. In addition, PSNH recommended that the Commission establish a working group to explore the feasibility of critical peak pricing and a second working group to address rate design issues associated with time-differentiated and real time pricing of electric service. Finally, PSNH said if the Commission decided to implement mandatory time-based pricing, technical sessions should be held to (1) explore the type of metering technology required, (2) consider the time frame and cost associated with modifying metering and billing systems, (3) address rate design issues and (4) discuss the manner in which utilities would recover the cost of metering and billing system modifications.

B. Unitil Energy Systems

Unitil Energy Systems (UES) initially filed testimony stating that it was not prepared to implement across-the-board mandatory time-based metering and pricing at this time. In addition, UES stated that the implementation of mandatory time-based pricing would be costly, and those costs are not well known. UES observed that benefits from implementing time-based pricing for large energy users are uncertain. Because many large energy customers had migrated to the competitive market, Unitil said it was unclear what benefits could be gained by imposing mandatory time-based pricing on the remaining customers. For smaller customers, UES also said that the benefits of mandatory time-based pricing are uncertain. UES stated that the cost of implementing time-based rates for small customers would be significant, but it was unknown whether and to what extent such customers would make changes in response to pricing signals.

In its supplemental testimony, UES stated it had re-evaluated the Commission's retail pricing policy direction as set forth in Order No. 24,763. UES testified that the economic

efficiency gains from transformation to retail pricing transparency are expected to far outweigh the costs of implementation given recent advances in enabling technology. UES noted that, for the Commission, the remaining issues were (1) the timetable for implementation of time-based rates, and (2) establishing an acceptable level of incremental spending.

Therefore, UES proposed to implement a program to enable day-ahead real-time pricing for all its large commercial and industrial (G1) customers. UES recommended that it be allowed to recover costs, where costs were attributable to a specific customer class, such as metering communication, through a fixed charge from all customers in that class. However, UES also testified that if there are any costs for technology and billing systems to enable the Company's billing platform to bill time-of-use rates, it expected to recover those costs from all customers in distribution rates.

UES stated that it intends to implement, within the next two years or so, a pilot program of multi-period time-based pricing for residential and small business customers. UES said it proposed to proceed with the pilot project to examine whether residential and small commercial customers would respond appropriately to the price signals of a time-of-use rate. UES explained that the costs of these initiatives should be reasonable because UES had recently installed a new advanced metering infrastructure, and because a module to adapt the billing system is available.

In its closing statement, UES recommended that the Commission direct Staff to work with the parties in establishing a time-based pricing working group to collaborate on the evaluation and implementation of time-based pricing proposals. In addition, UES asked the Commission to approve, in concept (1) day-ahead pricing for its large general service class and pilot program for multi-period time-based pricing for residential and small business customers, the details of which would be submitted to the working group, and (2) that each utility, after

consultation with the working group, may file specific time-based pricing proposals with the Commission for its review and approval and (3) allowing two years to complete the evaluation an development process, and related filings, before implementing the plan.

C. National Grid

National Grid proposed to implement day-ahead, real-time pricing for its large commercial and industrial customers on a trial basis, suggesting that the experience of using real-time pricing with the large customers would best achieve the savings and benefits expected from the use of time-based rates. In addition, National Grid said that the analysis of the response of large customers to real-time rates would help inform the Commission as to the merits of proceeding with time-of-use rates for small commercial and residential customers.

According to National Grid, based on its experience it expected to see more savings with real-time pricing rather than time-of-use pricing, and therefore suggested that the Commission refrain from requiring utilities to implement time-of-use rates. National Grid proposed to implement real-time rates on a trial basis, contending that a trial would provide a basis to analyze whether the costs involved in implementing time-of-use rates was producing the desired result, whether the rate design needed to be modified, and to whom the rate should be applied.

National Grid indicated that it intended to implement the real-time price program for its large commercial and industrial customers with the installation of new, wireless meters. According to the Company, large customers would pay a monthly surcharge of approximately \$200 per month for the wireless meters and communication link. In terms of cost recovery for non-capital revenue requirements of implementation, National Grid proposed to bill a surcharge to all customers in all customer classes on a proportionate basis. National Grid said that it was

appropriate to bill all customers because all customers would benefit from reduced peak usage and decreased transmission congestion.

In response to a question from Staff regarding the Company's estimates of costs, National Grid also agreed that it could use existing installed meters to implement time-of-use rates for large customers. Using the existing meters, National Grid stated it would still have to modify the billing system at a cost of between \$100,000 and \$150,000, resulting in a customer surcharge of about \$28 per month per large commercial and industrial customer. National Grid said it did not propose to implement a time-based rate for small commercial and residential customers. However, according to National Grid, the average monthly cost of meters to implement time-of-use rates for residential and small commercial and industrial customers would be approximately \$3.60 per customer per month.

National Grid urged the Commission to adopt a flexible, phased approach to implementing time-differentiated commodity pricing to allow the utilities first to gain information about large customer behavior and cost savings before mandating a particular pricing option for all other customers. The Company pointed out that the costs of implementing time-differentiated rates will ultimately be borne by customers, and therefore, according to National Grid, the decision to implement rates should be based upon a reasonable expectation that customers will benefit and that the Commission's policy objectives will be achieved.

National Grid requested the Commission approve its proposal to implement a day-ahead hourly pricing trial program for all of its G1 rate class customers. Finally, National Grid expressed concern about Wal-Mart's position on the issue of meter ownership by customers, and suggested that meter ownership should be the subject of another proceeding.

D. Wal-Mart Stores East, L.P.

Wal-Mart Stores East, L.P. (Wal-Mart) testified in support of the implementation of time-based rates, particularly real-time pricing. Wal-Mart averred that the company had extensive energy efficiency programs in its stores, including an in-depth demand response program. In its experience, according to Wal-Mart, when energy consumption is reduced through demand response or other means by monitoring real-time pricing or through time-of-use pricing, utilities benefit from reduced congestion on the power grid. Because utilities reap benefits from reduced energy consumption during high prices, Wal-Mart asserted that the utilities should bear the majority of the costs for implementation. For example, Wal-Mart recommended that the Commission allow customers who own advanced meters that meet or exceed regulatory standards to use their own meters under a time-based pricing regime, and not to require customers to purchase meters from the distribution utility.

Wal-Mart stated that real-time pricing provides the most accurate price signals to allow customers to manage their loads effectively at the most critical peak times. According to Wal-Mart, real-time pricing structures are preferable to other time-based pricing models. Wal-Mart urged the Commission to establish policy directives to make available appropriately designed time-based rate structures and customer choice with advanced metering services and options. Wal-Mart opined that the record in this docket demonstrates that appropriately designed real-time pricing and other time-based rate structures can be effective tools for a wide variety of customers for managing energy consumption and reducing energy bills.

E. Halifax American Energy Company

In its written comments of October 9, 2007, Halifax American Energy Company (Halifax) expressed concern with respect to National Grid's proposal for mandatory hourly

pricing for its large commercial and industrial class. Halifax said that competitive energy suppliers would aggressively compete for these customers and, should these customers leave National Grid, the cost of new wireless meters could be left stranded. Therefore, Halifax suggested that it may be more appropriate for the Commission to implement hourly pricing on an optional basis. According to Halifax, more information regarding the cost and benefits of time-of-use rates needs to be developed before there can be agreement that implementing such rates is an important objective.

F. Office of Energy and Planning

In its closing statement, the Office of Energy and Planning (OEP) expressed support for trial programs of time-of-use and real-time pricing technologies for different classes of customers, suggesting that trials would allow parties to evaluate the costs of various programs to weigh against the benefits, and assist in the development of a balanced pricing program. OEP also supported the creation of working groups to evaluate the true costs of time-of-use and real-time pricing programs.

OEP said it would not support a full deployment of real-time and time-of-use programs for all customers of all utilities at the same time. However, the OEP indicated that it would be appropriate to press for an accelerated commitment on the part of the state's utilities to help assess whether such pricing programs are beneficial to customers and to the system as a whole. OEP concluded that study of the available technology and program design options are critical steps to achieving balanced, cost-effective programs that shift peak load and give customers price signals that reflect the cost of energy.

G. Office of Consumer Advocate

OCA indicated it supported the proposals by National Grid and UES to implement time-based pricing programs for their largest customers. However, OCA did not support National Grid's proposal to recover all of the costs of the program proportionally from all classes. Instead, OCA endorsed UES' proposal to assign costs directly related to providing time-of-use metering to the large customers only, while recovering other costs to develop processes that might later be applied to all classes from all customers. The OCA also expressed support for requiring PSNH to develop a similar program for its largest customers.

OCA recommended that the Commission not mandate any time-of-use rates for residential customers at present, although OCA indicated it would support the efforts to test pricing strategies with smaller customers. OCA also expressed support for the proposal to create a working group to study whether it would be cost-effective to implement time-based rates for residential customers. Finally, OCA recommended that the working group also consider the implications of residential air conditioning as one topic to consider since residential air conditioning is the main contributing factor to the summer use peaks.

H. Staff

Staff stated that the prefiled testimony of PSNH, UES and National Grid and the associated discovery responses provide the necessary information to develop cost estimates to implement time-of-use rate schedules for both large commercial and industrial and small commercial and residential customers. However, Staff noted that the utilities did not provide estimates of the monetary benefits of time-of-use rate structures. Given the cost estimates developed by the utilities in this proceeding, Staff noted that it is reasonable to expect that the benefits of time-of-use pricing would exceed the costs for all large customers and some

residential and small commercial customers. Further, Staff disagreed with the notion that customers necessarily prefer fixed rates over time differentiated rate structures, especially when time-of-use rates create opportunities for customer savings.

Based on the utilities' testimony, Staff stated that the potential cost savings to large customers using a time-of-use rate could easily exceed the incremental costs of upgrading existing billing systems. Therefore, Staff expressed support for the Commission's endorsement in Order No. 24,763 of time-of-use rates for large commercial and industrial customers. However, Staff indicated that it is not opposed to the proposals of National Grid and UES to implement real-time pricing instead of time-of-use rates for large customers, although it disagreed with National Grid's proposal to implement real-time prices on only a pilot basis. Staff pointed out that National Grid already implements real-time pricing in New York on a permanent basis.

Staff recommended the Commission implement a time-of-use rate structure for small commercial and residential customers, subject to a cost/benefit analysis. As noted in Staff's November 3, 2006 comments, some residential customers may have difficulty responding to price signals and as a result could incur higher bills under a time-of-use rate design. Therefore, Staff reiterated its support of the Commission's direction in Order No, 24,763 that Staff "investigate with the parties the appropriate timeframe for converting small customers to time-based rates. Staff will also consider with the parties whether time-of-use pricing should apply to customers above some threshold annual usage based on the assumption that small residential customers are unlikely to be able to shift enough load to reduce their bills." Order No. 24,763, slip op. at 26.

Regarding PSNH's recommendation to convene working groups, Staff stated that it did not oppose the concept of a working group but recommends that such group be restricted to working through the mechanics of implementing time-of-use rates.

III. COMMISSION ANALYSIS

The October 10, 2007 hearing was held pursuant to a motion for reconsideration filed by PSNH, citing the PURPA requirement that a state regulatory authority hold an evidentiary hearing prior to determining whether to adopt a specific standard. At hearing, we received evidence from the electric distribution companies and others. Essentially, each utility testified that there are costs associated with implementing time-based pricing, presented calculated cost estimates, and stated that these costs would have to be recoverable. None of the utilities during the course of this proceeding conducted a cost/benefit analysis to assess the potential savings associated with the implementation of such rates either in terms of kilowatt-hours or in dollars. For example, PSNH acknowledged that they had not attempted to analyze or provide cost estimates of potential operational benefits nor potential demand response benefits. Further, although PSNH is a member of the Edison Electric Institute (EEI), it testified that it had not reviewed EEI's September, 2006 publication, "Deciding on 'Smart' Meters: The Technology Implications of Section 1252 of the Energy Policy Act of 2005" (Exh. 9) which outlines how to do a business case analysis of AMI and notes that many utilities will continue to deploy AMI "simply because they reduce costs and improve the quality of service to customers" and that in some circumstances "demand response benefits may be many times the operating benefits, and also many times the cost of the AMI and demand response system." (Tr. pp. 90-91 and 93.)

No witness suggested a complete absence of benefits from time-based pricing. Indeed, at hearing, UES testified that the benefits of time-based pricing would likely outweigh the costs of

implementation and testified as to the importance of developing companion programs that provide customers with technology to enable them to realize saving from AMI and time-of-use rates. PSNH said that customer behavior could not be predicted and recommended that work groups be directed to study rate design and costs of implementation. National Grid proposed that a trial program be implemented to test day-ahead real-time pricing for its large commercial and industrial customers to help us work through the issues of implementation and rates. Finally, Wal-Mart testified that real benefits can result from a properly designed and implemented real-time price signal.

Based on the evidence presented at hearing, we conclude that the potential benefits of time-based rates deserve further inquiry in order to determine how best and on what schedule to implement the federal standard. The most important of the issues is determining which form of time-based rate is appropriate for each utility and for each customer class, based on an analysis of the associated costs and benefits to be conducted by each utility. Therefore, we will open one or more dockets to develop specific cost-based planning for implementation of time-based rates and AMI. In such docket(s), we will also consider the proposed pilot projects and the issue of cost-recovery for the fixed costs associated with implementation of time-based rates. Consistent with the recommendation of several Parties, we will direct the Parties and Staff to establish working groups to facilitate cost-based planning and will require each utility to conduct its own cost-benefit analysis regarding the implementation of time-based rates and AMI. We intend to deal with each utility separately with respect to implementation, and do not intend at this time to open a rulemaking proceeding, although that option is available if it appears that a rule of general applicability is the appropriate means of implementation.

In short, we are concluding today that as a general policy matter it is appropriate to implement some form of smart metering and time-based rates as set forth in the federal standard in the instant docket. We will use the new proceeding(s) to develop meaningful cost-benefit analyses to determine which form of AMI and time-based rates are appropriate for each utility and for which classes of customers. We will also consider whether various options should be implemented on a mandatory or voluntary (optional) basis, or not at all if not cost-effective. Finally, we will consider how the implementation for specific utilities and the utilities' customer classes is designed in order to produce the benefits of reduced energy use and cost savings in response to specific time-based rate designs.

We observe in closing the importance of the "framing effect" in decision making. Various studies have concluded that whether an issue is posed in a positive frame or a negative frame can affect a decision maker's choice when examining alternatives, and that contradictory conclusions can be reached in situations with essentially identical consequences, depending on how the issue is framed in the first instance. One explanation of this phenomenon is that losses loom larger than gains in people's minds. Correspondingly, the selection of a negative or a positive frame by a party seeking to influence a decision maker may reflect a particular party's motivation or preference. In this proceeding, a negative frame emphasizes the obstacles to, and costs of, time-based metering, while a more positive or neutral frame emphasizes the potential benefits that may result from time-based metering. It is our intention, irrespective of the framing of the issues, to conduct a thorough, fact-based analysis in order to select the time-based metering and rate alternatives that best serve the public interest.

When we approved the procedural schedule in this docket, we accepted Staff's recommendation that the initial phase of this investigation into the EPAct standards should focus

on the time-based metering and the interconnection standards. Although argument in PSNH's Motion for Rehearing focused on the time-based metering standard, we suspended Order No. 24,763 in its entirety when we granted PSNH's motion, including our instructions to Staff and the parties to make a recommendation to the Commission regarding the interconnection standard. We are mindful of the need to complete this work and direct Staff to submit its recommendation regarding interconnection no later than February 15, 2008 for our consideration

Based upon the foregoing, it is hereby

ORDERED, that it is appropriate to implement time-based metering standards; and it is

FURTHER ORDERED, that the details, including cost-benefit analyses, form of rate design, time of implementation and applicable customer classes shall be determined in a separate proceeding or proceedings to be initiated by the Commission.

By order of the Public Utilities Commission of New Hampshire this twenty-second day of January, 2008.

Thomas B. Getz
Chairman

Graham J. Morrison
Commissioner

Clifton C. Below
Commissioner

Attested by:

Debra A. Howland
Executive Director & Secretary