

**Smart Grid Pilot Program
Report on Cost Tracking
September 7, 2011**

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Section 1 – Introduction

In Order No. 25,079, the Commission approved the settlement agreement between the Company, Commission Staff and the Office of Consumer Advocate, which provided, among other things, that UES will recover its share of incremental TOU program costs as a component of its Non-G1 default service rate over one year, commencing with the default service period beginning November 1, 2010.¹ In order to maximize the informational value of the Pilot while minimizing the costs to customers, UES's Pilot proposal was submitted as a joint, multi-state program, in conjunction with its affiliate Fitchburg Gas and Electric Light Company ("FGE"). The FGE Pilot was approved by the Massachusetts Department of Public Utilities ("Department") in Docket D.P.U. 09-31.

In addition, pursuant to the Settlement Agreement, the Company proposed a Commercial and Industrial Critical Peak Pricing Pilot Program ("C&I CPP Pilot"), which the Commission approved by letter in this docket on February 15, 2011. This program was implemented for New Hampshire customers only.

The Company agreed to provide cost information 60 days prior to the beginning of the recovery period. This Report is intended to comply with these requirements, and to provide the Commission and other parties with an explanation and information relative to the tracking of Smart Grid Program costs by UES.

This Report consists of the following sections –

Section 2 –Smart Grid Pilot Program Accounting

Section 3 –Smart Grid Pilot Program Costs

Section 4 –Conclusion

Appendix 1 –Work Orders / Contracts

Appendix 2 - Invoices supporting the cost incurred as of July 2011

Section 2 – Smart Grid Pilot Program Accounting

2.1 Overview

UES's Smart Grid Pilot Program was initially proposed in August 2009 in docket DE 09-137. As indicated in that filing, UES was proposing to conduct the pilot as a two-state Pilot program with its affiliate FGE in order to reduce the costs to ratepayers in both states. By sampling residential customers in both states, the costs to achieve an appropriate statistical sampling of customers would be significantly lower than if independent sampling in each state had been performed. The Pilot proposed to test three alternative treatment options, Simple Time-of-Use, Enhanced Time-of-Use and Smart Thermostat, with samples of 78 residential customers using central air-conditioning, during the summer months of 2010.

¹ In a Secretarial Letter issued on May 25, 2010, the Commission granted UES's request to postpone the TOU Pilot until the summer of 2011. The Pilot ran from June 1, 2011 through August 31, 2011.

Additionally, in an unsuccessful attempt to secure partial funding for the pilot program, Unitil Service Corp, on behalf of FGE and UES, filed a grant application with the Department of Energy under the Smart Grid Implementation Grant (SGIG) program in August 2009.

The regulatory proceedings in both states took longer than anticipated. In New Hampshire, a Settlement Agreement among the parties in DE 09-137 was reached and filed with the Commission on December 23, 2009. The Commission approved the Settlement Agreement by Order No. 25,079 dated February 26, 2010. UES filed an informational Tariff with associated rate calculation on February 19, 2010. On April 7, 2010, UES filed a request for additional time to begin the program since approval was pending in Massachusetts. The Commission granted the request to begin the Pilot in the summer of 2011. The Tariff filing with recalculated rates was re-filed on March 23, 2011, and approved by the Commission on May 25, 2011. Additionally, pursuant to the terms of the Settlement Agreement, UES filed a proposed plan on January 14, 2011, for a limited supplemental New Hampshire pilot program testing Critical Peak Pricing for a sample of commercial and industrial customers – the Commission accepted the proposal by letter dated February 15, 2011.

In Massachusetts, the Department issued its order approving the Pilot in Docket D.P.U. 09-31 on April 12, 2010. That order required FGE to prepare an Evaluation Plan, which the company filed on May 12, 2010. In addition, Compliance Tariffs relative to both the recovery of costs under the Default Service Cost Adjustment (DSCA) mechanism and to the charging of rates to Pilot participants were necessary. The DSCA compliance Tariff No. 188 was filed by FGE on January 3, 2011, and approved by the Department in D.P.U. 09-31-A on July 21, 2011. The Pilot program rates with supporting cost calculations were filed with the Department as Tariff No. 209 on April 29, 2011, and approved by the Department, after amendment, on June 1, 2011. The Department's Order also required FGE to participate in a collaborative Evaluation Working Group of utilities and stakeholders to develop a statewide pilot program evaluation process in Massachusetts. The Working Group was convened in August 2010 and met multiple times over the course of the following months. The Statewide Evaluation Plan was filed with the Department on March 23, 2011, and approved on April 15, 2011. Periodic communications within the Working Group have continued.

Based upon the final regulatory approvals of all pending matters in both states, the implementation of the Pilot was scheduled for the summer months of June, July and August 2011. The Pilot was launched June 1, 2011. As of the filing of this Report, the Pilot is effectively complete. Final bills to program participants will be issued in the first week of September. Final efforts will include field demobilization, final communications with program participants and a concluding program participation survey. The analysis and evaluation of results will begin shortly. This same timeframe applies to the C&I CPP Pilot.

The Company expects that the majority of the costs for the Smart Grid Pilot Program have been incurred, specifically the costs associated with the Field Implementation, Marketing and Education and the majority of Program Planning costs. However, some costs, including any costs associated with demobilization, removal of equipment, final surveys and the preparation of the analysis and report on the Pilot, will continue to accumulate for a period of time. Costs incurred subsequent to the filing of this Report will be filed for cost recovery either as supplemental information in the respective cost recovery proceedings or filed for recovery at this time next year.

Consistent with the Company’s accounting practices and the regulatory approvals in both states, specific account numbers were established for the Smart Grid Pilot Program for both FGE and UES to track costs in four expense categories: Planning, Design and Admin; Marketing and Education; Field Implementation; and Evaluation and Reporting.²

An additional expense category for non-recoverable costs was also required due to a discrepancy in the methodologies approved in the respective states relative to the split for costs determined to be “Joint Costs,” i.e., fixed costs of the Pilot Program that did not vary based on the number of customers. The New Hampshire Commission approved a 50-50 split, while the Massachusetts Department approved a split based on the number of participating customers in each state. As a consequence, a certain share of the joint costs allocated to Massachusetts are deemed to be non-recoverable.

The assigned numbers for the Pilot, including FGE, UES Res and UES C&I, are listed in the table below.

Table 1 – Smart Grid Pilot Accounts

Account number:	Name:	Job Order number:
FGE		
20-29-02-14-908-10-10	MA SMART GRID PILOT PLANNING DESIGN AND ADMIN	0710.10
20-29-02-14-908-10-20	MA SMART GRID PILOT MARKETING AND EDUCATION	0710.20
20-29-02-14-908-10-30	MA SMART GRID PILOT FIELD IMPLEMENTATION	0710.30
20-29-02-14-908-10-40	MA SMART GRID PILOT EVALUATION AND REPORTING	0710.40
20-20-02-14-908-10-00	MA SMART GRID NON RECOVERABLE COSTS	
UES RES		
10-29-02-36-908-10-10	NH SMART GRID PILOT PLANNING DESIGN AND ADMIN	0710.10
10-29-02-36-908-10-20	NH SMART GRID PILOT MARKETING AND EDUCATION	0710.20
10-29-02-36-908-10-30	NH SMART GRID PILOT FIELD IMPLEMENTATION	0710.30
UES C&I		
10-29-02-36-908-10-11	NH SMART GRID PILOT FIELD IMPLEMENTATION COMM	0710.11
10-29-02-36-908-10-21	NH SMART GRID PILOT PLANNING DES & ADMIN COMM	0710.21
10-29-02-36-908-10-31	NH SMART GRID PILOT MKTG & EDUCATION COMM	0710.31

2.2 Cost Tracking Provisions

The regulatory accounting called for by the respective state regulatory authorities established a standard for recovery of “incremental” expenses. These expenses are intended to include costs that would not have been incurred but for the pilot program, and specifically are intended to exclude costs that can be deemed to have been recovered in base rates. The Company followed specific accounting practices in response to these requirements:

² This final Account Number structure assigned by the Company differs somewhat from the categories in the originally proposed budget. However, all costs originally proposed are included in the first three budgeted accounts in the table. The account for “Evaluation and Reporting” was added for FGE only to ensure an accurate accounting of the costs for consultant participation in the MA Evaluation Working Group and the completion of the analysis and evaluation in accordance with the statewide Evaluation Plan.

- The Company followed the practice of accounting for equipment acquisition and installation at vendor invoice costs, without including general overheads.
- Expense related items including consulting expenses were charged directly to the specified accounts. To the extent possible, these costs were directly charged to the jurisdiction to which they applied. Joint costs were initially split 50-50 to state jurisdiction. The FGE costs were then split between recoverable and non-recoverable accounts.
- Some of the IT work for the Pilot was originally anticipated to be conducted by contract programmers and charged to the cost of the Pilot. The Company subsequently chose to conduct all IT work for the Pilot with internal Unitil Service Corp. (USC) personnel pursuant to a capital authorization relating to continued enhancements of the Company's AMI and CIS systems. Recovery of IT related costs is not being requested at this time.
- The Smart Grid Pilot Project has required an extraordinary commitment of internal UES, FGE and USC resources in engineering, metering, customer service, communication, regulatory and accounting. None of the internal time devoted to the Pilot Program in these functional areas, including time for USC personnel, has been charged to the project.³

The majority of the costs incurred in developing and conducting this program involved the acquisition of specific outside consulting and support services and the purchase and installation by third parties of the equipment necessary to the conduct of the pilot. The principal vendors included:⁴

- GDS: Consulting Services in support of program planning, development, implementation and evaluation.
- Tendril: Acquisition of the Tendril equipment, software and licenses for deployment to the Enhanced TOU treatment group.
- Honeywell: Acquisition of the Honeywell Thermostats for deployment to the Smart Thermostat treatment group; Acquisition of Smart Grid program field installation services for all equipment installed in the program.

Some supplemental services were acquired from Calypso Communications and Accountemps for support in customer recruitment and communication and for catering for training sessions.

The pilot project was initiated well in advance of the final regulatory approvals and accounting authorizations discussed above. Costs incurred in this period were captured and deferred in the Company's capital accounts (Account 186), and then subsequently cleared to the above expense accounts, with documentation of all entries made. Later invoices were

³ For the C&I CPP Pilot, certain internal costs have been tracked and are being requested for recovery in accordance with the Company's proposal dated January 14, 2011. In order to minimize the added costs of the C&I Pilot program certain tasks were assigned to internal personnel including some field installation work and some project management work. The costs included only time charges that would not have been recovered as expense in the context of base rate recovery.

⁴ The Contracts for these vendors are included in Appendix 1.

charged directly to the proper accounts. All of these charges are supported by invoices and the postings to these accounts have all been tracked in the Unitil general ledger system.

This tracking has included, to the extent possible, direct assignment of charges to the respective state jurisdictions and account. This has resulted in the majority of these costs being assigned to each state based on the number of participants in the Pilot Program in each state.

In the case of the GDS consulting services, the Company required GDS to assign costs to specific activities in each state, to the extent possible. This has included direct charges for the costs associated with their participation in the Massachusetts Evaluation Working Group. For joint activities which could not be assigned specifically by state, the GDS invoices have been split 50-50 between the two states consistent with the regulatory approval in New Hampshire which allowed recovery of 50% of the joint costs. The Massachusetts component has further been split between the appropriate expense accounts and the non-recoverable account as appropriate to insure that the recoverable costs are limited to what would have been allocated based on the number of participants.

Section 3 – Smart Grid Pilot Program Costs

Unitil has conducted the FGE/UES Pilots with full awareness of the concern for the ratepayer impacts of pilot program cost recovery, and has taken all reasonable efforts to control the costs of the Pilot program. Specific efforts have included competitive bidding for the thermostat component of the program, aggressive negotiation of contract terms with Tendril, competitive bidding for the field installation work, careful management of the GDS contract and extensive utilization of internal personnel resources that are not recoverable as incremental costs.

As noted in the Table below, the budget for the Smart Grid Pilot Program as approved in DE 09-137 totaled \$312,136. In addition, the budget for the C&I CPP Pilot was \$98,250.

Table 2: Budget Estimate for UES

NH SMART GRID PILOT PLANNING DESIGN AND ADMIN	\$	73,800
NH SMART GRID PILOT MARKETING AND EDUCATION	\$	24,788
NH SMART GRID PILOT FIELD IMPLEMENTATION	\$	185,172
CONTINGENCY	\$	28,376
SUBTOTAL	\$	312,136
NH SMART GRID PILOT FIELD IMPLEMENTATION COMM	\$	48,000
NH SMART GRID PILOT PLANNING DES & ADMIN COMM	\$	38,000
NH SMART GRID PILOT MKTG & EDUCATION COMM	\$	12,250
SUBTOTAL	\$	98,250
TOTAL	\$	410,386

UES has compiled the costs of the Pilot Program for the period through July 31, 2011. A detailed summary, including the share of costs allocated to New Hampshire for the Residential and the Commercial & Industrial Pilots, is provided in Schedule 2. The results are summarized in Table 3 below:

Table 3: Summary of UES Smart Grid Pilot Program Costs To Date

Account Description	SUM
NH SMART GRID PILOT FIELD IMPLEMENTATION RES	\$ 217,219
NH SMART GRID PILOT PLANNING DES & ADMIN RES	\$ 92,030
NH SMART GRID PILOT MKTG & EDUCATION RES	\$ 8,934
SUBTOTAL	\$ 318,182
Account Description	SUM
NH SMART GRID PILOT FIELD IMPLEMENTATION COMM	\$ 7,507
NH SMART GRID PILOT PLANNING DES & ADMIN COMM	\$ 10,080
NH SMART GRID PILOT MKTG & EDUCATION COMM	\$ -
SUBTOTAL	\$ 17,587
TOTAL	\$ 335,769

As noted above, based on costs incurred to date, the costs of the Residential Pilot Program are somewhat in excess of the expected budget, while the C&I Pilot costs are well below.

The Pilot has afforded UES with an extraordinary learning experience of significant potential benefit to customers. This project involved the deployment of new and innovative technology in an untested and uncertain environment, and required the development and application of new systems and new, innovative features for existing systems. Many of the original expectations relative to the complexity and challenges of implementing the program have proved to be optimistic. Many aspects of the program have proved to be far more challenging than anticipated.

There are a variety of factors that have pushed the costs of the Residential program upward as compared to the original budget. Among the key factors leading to higher costs than planned are the following:

- Extensive and lengthy regulatory proceedings in both states requiring more significant consulting participation than budgeted.
- Delayed implementation of the Pilot from June 2010 to June 2011 forced the demobilization of considerable implementation planning efforts in spring 2010, and the remobilization of those efforts in fall of 2010. Marketing and recruitment materials printed in preparation for a 2010 deployment had to be re-printed for the 2011 launch.
- Final licensing, support, and equipment costs for Tendril (after negotiation) were significantly higher than originally anticipated.
- Difficulties in enrollment of participants due to unforeseen technical incompatibility issues (multiple A/C zones, damper-type controls systems, internet communication weaknesses or incompatibilities, etc.) required significantly expanded and more intensive customer recruitment, customer screening and field assessment efforts than expected. A high number of customer were turned down for Tendril installations, which required the recruitment of many more customers than originally contemplated
- Considerable internal and consultant time was spent managing the process of field deployments which, for the Tendril systems, required a specific pairing of ERT meters to a customer location. This process was further complicated by a finite stock of meters and a high turn down rate.
- Equipment operability and interface complications, particularly with the Tendril equipment, requiring extensive trouble-shooting, multiple field visits with many customers and considerable consultation with equipment vendors, installers and customers.
- Many of the customer inquiries received during the course of the pilot were technical, typically relating to either equipment concerns or questions on detailed usage data, and required substantial attention from key technical resources and GDS beyond the customer service contemplated in the original budget.

The Company has taken efforts to mitigate the increases in costs. Most significantly, the Company negotiated a revised scope of services with GDS, and in this process GDS agreed not to bill the Company for some service and to provide ongoing services on favorable terms. The Company also increased its utilization of existing personnel for some of the recruitment,

screening and field installation work. As these personnel are deemed to be “non-incremental” the costs are not being charged to the project.

Relative to the C&I CPP Pilot, the program costs are substantially below the anticipated levels at this time due largely to the simplicity of the program design and the resulting ease in the planning, recruitment and field implementation process. In addition, the meter data and CIS programming and web interface components were a virtual piggy-back to the Residential program – no cost recovery is being requested for this minimal amount of incremental cost.

In both the Residential and C&I Pilot programs there will be additional costs associated with final demobilization, removal of equipment, final surveys and the preparation of the analysis and report on the Pilot. These costs will continue to accumulate for a period of time. Costs incurred subsequent to the filing of this report will be filed for cost recovery either as supplemental information in the respective cost recovery proceedings or filed for recovery at this time next year.

Section 4 – Conclusion

The purpose of this Report has been to comply with the requirement, pursuant to the approvals in DE 09-137, that UES file cost information for the Smart Grid Pilot Programs in advance of cost recovery. The Pilot has afforded UES with an extraordinary learning experience of significant potential benefit to customers. This has included deployment of new and innovative technology and the development and application of new systems and new, innovative features for existing systems.

The Pilot program is now concluded. Final customer communications, billing and demobilization will be completed in the next few weeks and data analysis and evaluation will begin shortly. As a result, the majority of the costs of the Pilot have now been incurred.

Unitil has conducted the FGE/UES Pilots with full awareness of the concern for the ratepayer impacts of pilot program cost recovery, and has taken all reasonable efforts to control the costs of the Pilot program.

Based on this Report and the additional documentation provided, UES believes it has complied with the Commission's requirements in DE 09-137 and is entitled to collect the Pilot costs included with the Default Service filing being made in the near future.