



**Connecticut  
Light & Power**

The Northeast Utilities System

The CL&P  Smart Metering  
& Dynamic Pricing Pilot results and Implications

*Prepared for the CT Power and Energy Society  
02/25/2009*

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## CL&P Plan-It Wise Pilot Background

**CT 2007 PA-07-242 AN ACT  
CONCERNING ELECTRICITY  
AND ENERGY EFFICIENCY  
requires AMI to:**

1. Support net metering;
2. Track hourly consumption;
3. Support proactive customer pricing signals and;
4. Enable implementation of voluntary critical peak pricing or real-time pricing tariffs for all customer classes.

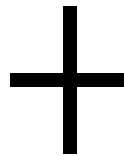
- ❑ Pilot Objective: To test customer response to various Dynamic Pricing rates and the impact of “enabling” in-home technologies;
- ❑ Dynamic Pricing Design: 26 test cells to test 3 dynamic pricing rate structures, each with 2 pricing differentials for each customer class.
- ❑ Customer Participation: ~3000 Total; ~1500 business customers, statewide; ~1500 Residential customers in Hartford and Stamford; Demographically diverse.
- ❑ Pilot Metering: Sensus 2-way Radio AMI for Residential Customers; ITRON’s traditional (non-AMI) 1-way cellular-read interval meters for C&I customers.



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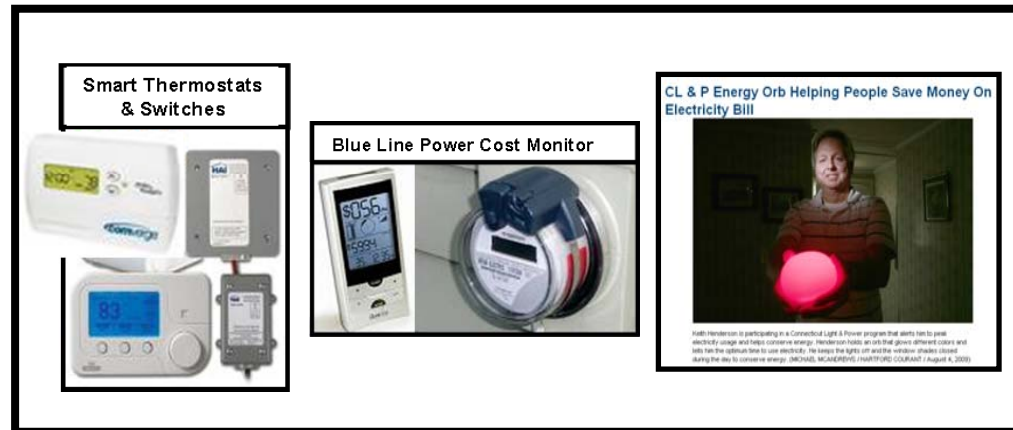
*Plan-it Wise tested customer response to dynamic pricing and the impact of “enabling” technologies.*

The Pilot tested  
3 dynamic  
pricing rates



Smart technology  
impact in boosting  
dynamic pricing  
responses.

RATE	DAYS EFFECTIVE	TIME	SAMPLE per kWh PRICING
Peak Time Pricing (“PTP”)	Top 10 Summer days	2 – 6PM	Peak = +\$1.614 Off Peak = -\$0.036
Peak Time Rebate (“PTR”)	Top 10 Summer days	2 – 6PM	Peak = \$1.614
Time of Use (“TOU”)	Every non-holiday week day	Noon – 8PM	Peak = +\$0.142 Off Peak = -\$058



*The CL&P Plan-it Wise Pilot results were statistically valid and demographically diverse.*

Key Pilot Findings:

1) “Peaky” dynamic pricing rates coupled with technologies that control air conditioning reduced peak energy usage most.

Pricing-> Customer	Peak Time Pricing		Peak Time Rebate		Time of Use
	Pricing	with Controlling Technology	Pricing	with Controlling Technology	Pricing
Residential	19.6%	28.5%	13.2%	21.8%	4.1%
Business	3.6%	9.4%	0.0%	5.3%	0.0%

2) Smart metering works.

3) In-home smart technologies are evolving rapidly, but still immature.

For more information, our Plan-it Wise Pilot results filing and our Pilot Customer testimonial video are available at:

<http://www.cl-p.com/home/saveenergy/goinggreen/planitwise.aspx>



*Plan-it Wise residential customers were more satisfied than average CL&P customers.*

**OVERALL** CUSTOMER SATISFACTION

Residential	5.1/6
C&I	4.1/6

**PEAK RATE** SATISFACTION RANKINGS:

RATE	PTP	PTR	TOU
Residential	1st	2nd	3rd
C&I	1st	3rd	2nd

**TECHNOLOGY** SATISFACTION RANKINGS:

TECHNOLOGY	A/C Control Switch	Energy Orb	No Tech	Smart TStat	In Home Energy Display
Residential	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>
C&I	1 <sup>st</sup>	4 <sup>th</sup>	3 <sup>rd</sup>	2 <sup>nd</sup>	N/A

92% of Residential and 74% of Business customers want to participate again.

# We evaluated cost effectiveness of AMI & Dynamic Pricing using the Plan-it Wise results and guiding principles.

## Guiding Principles:

- A. Build a solution that influences customers to be engaged with their hourly energy information to increase the impacts of dynamic pricing and conservation;
- B. Encourage customer participation in dynamic pricing;
- C. Explore special treatment for low income customers;
- D. Recommend timing that mitigates key risks;
- E. Gain Company commitment from respective subject matter experts to achieve AMI O&M benefits;
- F. Ensure key external stakeholders have input into the design;
- G. Advocate only for AMI, Technology and Dynamic Pricing solutions that are cost effective.

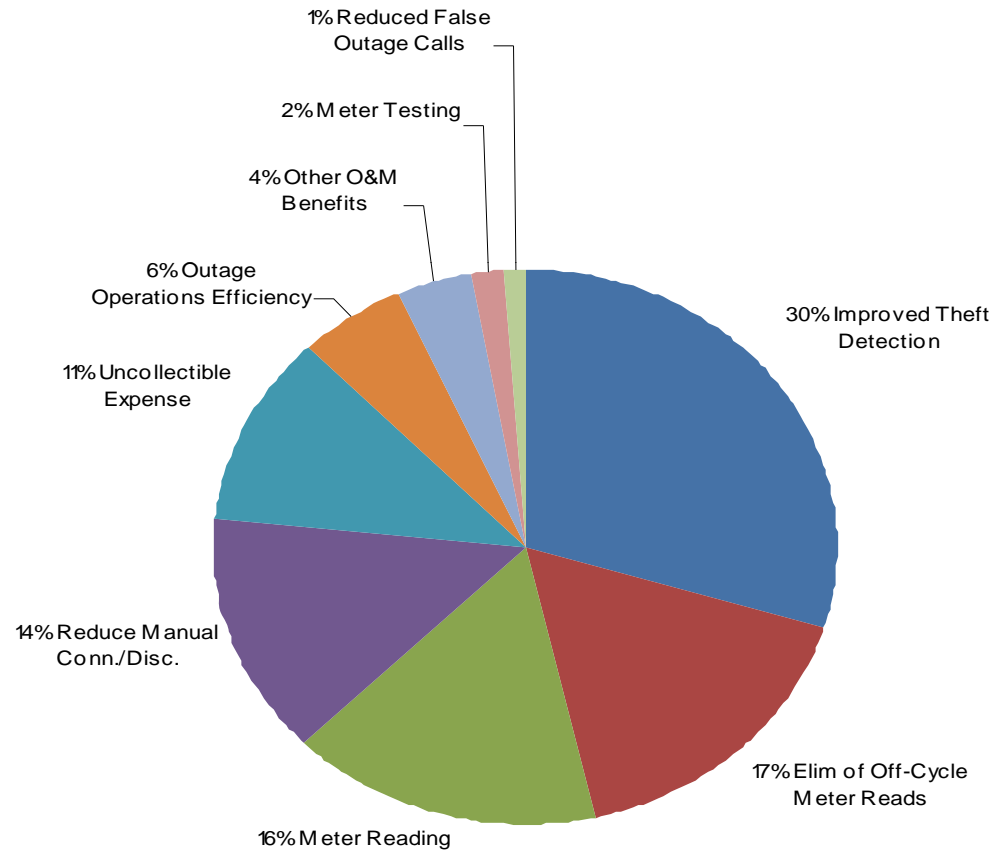
## Key Conclusions:

- Under a set of realistic expectations and design criteria, AMI with Dynamic Pricing is estimated to have a positive NPV.
- Benefits are highly dependent on external factors, like capacity value and a persistent customer response.
- Waiting until AMI standards are further developed by the National Institute of Standards and Technology (“NIST”) in 2011 will mitigate critical technology risks.

**We will be transparent with the cost benefit analysis and assumptions in our March 31 DPUC filing.**



Interestingly, the O&M benefits are significant and higher than we would have expected, given that we have a full AMR deployment.



*Next steps towards filing an AMI and Dynamic Pricing plan with the DPUC on March 31, 2010.*

1. Complete the AMI & Dynamic Pricing cost benefit analysis.
2. Continue reviews with key stakeholders.
3. File the AMI and Dynamic Pricing plan with the associated cost benefit analysis.
4. Evaluate comparisons of non-AMI investment value for same cost.

*Thank you for your engagement.*

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