



A New Regulatory Framework to Support Behavioral Programs

Philip Mosenthal

Partner, Optimal Energy, Inc.

ACEEE Behavior Energy and Climate Conference

November 13, 2012

Should Behavioral Programs be viewed as DSM or as Basic Consumer Services?

- ▶ Evidence is strong that at least some behavioral approaches are:
 - Cost-effective
 - Relatively easy to deliver
 - Look like and can be effectively integrated into utilities core services
- ▶ But, these programs have cannibalized some hardware-related DSM efforts
- ▶ What is the 21st Century solution and why?

The Problem

Hypothetical Program Administrator Options

Annual DSM target (% of load)	0.80%
Residential Load	40%
Home Energy Report Savings	2.00%
Savings from RES HER	0.800%
Savings necessary from other programs	ZILCH
Annual Typical portfolio budget \$/annual kWh	\$ 0.30
RES HER \$/annual kWh	\$ 0.03
Utility cost "savings"	90%
Real societal lifetime cost savings	-30%
Persistence	???????
Lifetime Net benefits	???????

BILLING DATE OCT 15, 2012	ACCOUNT NUMBER 000010303816	PAY THIS AMOUNT _____	<input type="checkbox"/> Check this box for address change. See reverse side.	CV-05 REV 5/12																																																	
*** DO NOT PAY - YOUR ACCOUNT IS SET UP ON ELECTRIPAY ***																																																					
2012101500001030381600003819																																																					
PHILIP H MOSENTHAL 1190 RUSSELL YOUNG RD BRISTOL VT 05443-5319																																																					
AMOUNT PAID _____																																																					
GREEN MOUNTAIN POWER P.O. Box 74 Brattleboro VT 05302																																																					
PLEASE RETURN THIS PORTION WITH YOUR PAYMENT--PLEASE MAKE CHECKS PAYABLE TO "GMP".																																																					
BILLING PERIOD SEPT 12, 2012 TO OCT 09, 2012... 027 DAYS PREVIOUS BILL BALANCE \$53.24 PAYMENTS FOR THIS PERIOD... THANK YOU FOR YOUR PROMPT PAYMENT \$53.24CR BALANCE FORWARD \$0.00																																																					
<table border="1"> <thead> <tr> <th>RATE</th> <th>LAST METER READING</th> <th>PRESENT READING</th> <th>CONSTANT</th> <th>UNITS</th> <th>UNIT COST</th> <th>AMOUNT</th> </tr> </thead> <tbody> <tr> <td>RESIDENTIAL 0011</td> <td>28193</td> <td>28239</td> <td>1</td> <td>46</td> <td>TOD PEAK 46 X \$0.2092/KWH</td> <td>\$9.24</td> </tr> <tr> <td>GMP ENERGY SERVICE CHARGE DADS</td> <td></td> <td></td> <td></td> <td>47</td> <td>X \$0.8000/DAY</td> <td>\$15.85</td> </tr> <tr> <td>RESIDENTIAL 0011</td> <td>75353</td> <td>75471</td> <td>1</td> <td>118</td> <td>TOD OFF PEAK 118 X \$0.10687/KWH</td> <td>\$12.61</td> </tr> <tr> <td>GMP ENERGY ENERGY EFFICIENCY CHARGE</td> <td></td> <td></td> <td></td> <td>118</td> <td>(-\$0.00320/KWH)</td> <td>-\$1.02</td> </tr> <tr> <td>POWER COST ADJUSTMENT MECHANISM</td> <td></td> <td></td> <td></td> <td></td> <td>(+\$0.00399/KWH)</td> <td>+\$1.04CR</td> </tr> <tr> <td colspan="7">CURRENT MONTH CHARGES BILLED (OCT 15, 2012) \$38.19</td> </tr> </tbody> </table>					RATE	LAST METER READING	PRESENT READING	CONSTANT	UNITS	UNIT COST	AMOUNT	RESIDENTIAL 0011	28193	28239	1	46	TOD PEAK 46 X \$0.2092/KWH	\$9.24	GMP ENERGY SERVICE CHARGE DADS				47	X \$0.8000/DAY	\$15.85	RESIDENTIAL 0011	75353	75471	1	118	TOD OFF PEAK 118 X \$0.10687/KWH	\$12.61	GMP ENERGY ENERGY EFFICIENCY CHARGE				118	(-\$0.00320/KWH)	-\$1.02	POWER COST ADJUSTMENT MECHANISM					(+\$0.00399/KWH)	+\$1.04CR	CURRENT MONTH CHARGES BILLED (OCT 15, 2012) \$38.19						
RATE	LAST METER READING	PRESENT READING	CONSTANT	UNITS	UNIT COST	AMOUNT																																															
RESIDENTIAL 0011	28193	28239	1	46	TOD PEAK 46 X \$0.2092/KWH	\$9.24																																															
GMP ENERGY SERVICE CHARGE DADS				47	X \$0.8000/DAY	\$15.85																																															
RESIDENTIAL 0011	75353	75471	1	118	TOD OFF PEAK 118 X \$0.10687/KWH	\$12.61																																															
GMP ENERGY ENERGY EFFICIENCY CHARGE				118	(-\$0.00320/KWH)	-\$1.02																																															
POWER COST ADJUSTMENT MECHANISM					(+\$0.00399/KWH)	+\$1.04CR																																															
CURRENT MONTH CHARGES BILLED (OCT 15, 2012) \$38.19																																																					
THE VT PUBLIC SERVICE BOARD APPROVED OUR REQUEST TO LOWER CUSTOMER RATES BY 0.4 % BEGINNING OCTOBER 1. THE GUARANTEED SAVINGS OF \$2.5 MILLION IN YEAR ONE OF THE NEWLY MERGED COMPANY MADE THE RATE DECREASE POSSIBLE.																																																					
<p>PLEASE DO NOT PAY, YOU ARE A GMP ELECTRIPAY CUSTOMER BANK WITHDRAWAL WILL OCCUR APPROXIMATELY NOV 05</p> <table border="1"> <tr> <td>SERVICE ADDRESS: RUSSELL YOUNG RD STARKSBORO VT</td> <td>PLEASE PAY</td> </tr> <tr> <td>SERVICE TELEPHONE NO: 802 453 6678</td> <td></td> </tr> <tr> <td>APPROXIMATE NEXT METER READ DATE IS: NOV 8</td> <td>PLEASE USE YOUR ACCOUNT NUMBER WHEN CALLING OR WRITING: 000 01030381 6</td> </tr> <tr> <td colspan="2">CUSTOMER INFORMATION (MON-FRI, 7-7): 800 649 2877</td> </tr> <tr> <td colspan="2">TO REPORT A POWER OUTAGE: 800 451 2877</td> </tr> </table>					SERVICE ADDRESS: RUSSELL YOUNG RD STARKSBORO VT	PLEASE PAY	SERVICE TELEPHONE NO: 802 453 6678		APPROXIMATE NEXT METER READ DATE IS: NOV 8	PLEASE USE YOUR ACCOUNT NUMBER WHEN CALLING OR WRITING: 000 01030381 6	CUSTOMER INFORMATION (MON-FRI, 7-7): 800 649 2877		TO REPORT A POWER OUTAGE: 800 451 2877																																								
SERVICE ADDRESS: RUSSELL YOUNG RD STARKSBORO VT	PLEASE PAY																																																				
SERVICE TELEPHONE NO: 802 453 6678																																																					
APPROXIMATE NEXT METER READ DATE IS: NOV 8	PLEASE USE YOUR ACCOUNT NUMBER WHEN CALLING OR WRITING: 000 01030381 6																																																				
CUSTOMER INFORMATION (MON-FRI, 7-7): 800 649 2877																																																					
TO REPORT A POWER OUTAGE: 800 451 2877																																																					
KWH PER MONTH ON PRIMARY RATE	500 450 400 350 300 250 200 150 100 50	13 MONTH COMPARISON	USAGE COMPARISON	ADDITIONAL INFORMATION ON REVERSE SIDE																																																	
		<table border="1"> <tr> <th>BILLING PERIOD</th> <th>KWH USED</th> <th>BILLING DAYS</th> <th>AVERAGE TEMP</th> </tr> <tr> <td>OCT 12</td> <td>164</td> <td>27</td> <td>54</td> </tr> <tr> <td>OCT 11</td> <td>258</td> <td>29</td> <td>57</td> </tr> </table>	BILLING PERIOD	KWH USED	BILLING DAYS	AVERAGE TEMP	OCT 12	164	27	54	OCT 11	258	29	57																																							
BILLING PERIOD	KWH USED	BILLING DAYS	AVERAGE TEMP																																																		
OCT 12	164	27	54																																																		
OCT 11	258	29	57																																																		

▶ New things since Carter Administration

- Electronic payment

- Graph of past usage

- ▶ Bills not user friendly, little education, few advances since computer era began.
- ▶ Compare level of education and information with other consumer products that consume much smaller share of household income and are much less complex.



The Solution

- ▶ Utilities should provide a basic level of customer service and education to use their product smartly, recovered through rates as core expenses.
- ▶ Utilities already have similar obligations to provide PSA-type information to consumers (e.g., call before you dig).
- ▶ No other consumer product of this economic magnitude comes with so little consumer information (think smartphones, consumer electronics, cars....)
- ▶ IF cost-effective, should be a basic obligation of utilities to provide more sophisticated mailings (integrated into bills reduces costs and perhaps improves effectiveness).
- ▶ Information programs should be treated like other supply-side retail obligations like bill stuffers. They are a basic service tied to ensuring safe and efficient use of the product.
- ▶ No need for lost revenue recovery or shareholder incentives.
- ▶ Eliminates competition for scarce DSM resources.
- ▶ Transforms society into educated and informed energy consumers over time. Locks in market transformation.

The Electric Bill of the 21st Century?

UtilityCo

Home Electricity Report
Account number: [REDACTED]
Report period: 12/07/10 - 02/07/11

We are pleased to provide this personalized report to you as part of a pilot program. The purpose of this report is to:

- Provide information** This report is an educational tool to help you understand your home's energy use in the context of other homes.
- Track progress** We will help you learn about how your home's usage changes over time and where you likely have opportunities to save.
- Share energy efficiency tips** On the back of this report, we provide ideas for saving energy and money.

Last 2 Months Neighbor Comparison You used 27% MORE electricity than your neighbors.

Category	Efficient Neighbors	All Neighbors	YOU
KWh	833 KWh*	1,260	1,401

* KWh: A 100-Watt bulb burning for 10 hours uses 1 Knewton-hour.

Who are your Neighbors?

- Efficient Neighbors**: Approximately 100 occupied, nearby homes that are similar to yours (avg. 1,827 sq ft)
- All Neighbors**: The most efficient 20 percent from the "All Neighbors" group

Last 12 Months Neighbor Comparison You used 18% MORE electricity than your neighbors. This costs you about \$230 EXTRA.

Action Steps | Personalized tips chosen for you based on your energy use and housing profile

Quick Fix
Something you can do right now

Reduce water heater temperature
Lowering your water heater temperature from 140° to 120° can result in a 10% savings in hot water costs. This temperature will also help prevent scaling.

If your shower fills a gallon bucket in less than 20 seconds, you could save with an efficient showerhead. These showerheads (flow rate no greater than 2.5 gallons/minute) help conserve hot water while maintaining water pressure.

You can realize significant savings with efficient showerheads, especially if you have a large household.

SAVE UP TO \$65 PER YEAR

Smart Purchase
Save a lot by spending a little

Install efficient showerheads
Showing accounts for up to about 40% of your hot water usage, but you can cut costs without sacrificing comfort.

If your shower fills a gallon bucket in less than 20 seconds, you could save with an efficient showerhead. These showerheads (flow rate no greater than 2.5 gallons/minute) help conserve hot water while maintaining water pressure.

You can realize significant savings with efficient showerheads, especially if you have a large household.

SAVE UP TO \$130 PER YEAR

Smart Purchase
Save a lot by spending a little

Keep your water heater warm
A typical water heater creates and keeps hot water in a storage tank. When the tank loses heat over time, additional energy is expended to keep the water hot.

If you have an older water heater, additional insulation can cut heat losses by 25-45%, saving energy and money. Specially designed water heater "jackets" can pay for themselves in a year or less.

Check your water heater owner's manual before adding the jacket.

SAVE UP TO \$60 PER YEAR

* Printed on 100% post-consumer recycled paper.

▶ Oh... and by the way... you owe us \$XXX.

 **Optimal**
ENERGY

6



Thank you

Philip Mosenthal

Optimal Energy, Inc.
14 School St.
Bristol, VT 05443

802-453-5100 x12
mosenthal@optenergy.com

