

**500 Unit In Home Display Pilot
Mid-Program Review
March 29, 2011**

CenterPoint Energy was granted a “Good Cause Exemption” from the Texas Public Utility Commission to deploy up to 500 In Home Energy Displays .

CenterPoint Energy will report results back to Texas Public Utility Commission and ERCOT Retail Market Subcommittee.

Pilot Purpose

- Encourage the adoption of Home Area Network in the Texas Retail Market
- Gain experience with the technical interactions of Home Area Networks devices with the Itron Meter before Energy Management is deployed by REPs and Mass Markets.
- Gain knowledge of the levels of CNP field support needed for HAN and communicate data to the Texas Retail Market.
- Determine how to deploy: onsite deployment or mailing devices and communicate our experiences to the Texas Retail Market.
- Determine the types of technical issues encountered and document troubleshooting mechanisms.
- Determine the size of CNP HAN support team
 - Customer Service
 - Field Service
- Determine System readiness

- Device Requirements

- User Friendly Interface; Easy to operate and maintain
- Display current meter register reading
- Display current kW demand reading
- Allow price to be entered either directly to the device or through the SMT Portal
- Calculate and display current kWh usage and costs

- Devices Evaluated

- Tendril
- LS Research/Honeywell
- Comverge
- RainForest

Honeywell In-Home Display



RainForest- In – Home Display



Participant Selection – 500 Units

- 50 Employees
- 50 Friends/Family of Employees
- 300 Consumers
 - Consumers who have registered SMT accounts
 - Consumers who respond to a mailed invitation
 - Single family residence
 - Same residence for the past year
- Customers were a cross-section of 30 different REPs
- 100 Key Stakeholders

How are Pilot Participant chosen?

In order to Identified the 300 general potential pilot participants. We targeted:

- 300 known Smart Meter Texas users
 - 300 General Consumers
- 50% response rate

Both groups have been filtered to only include:

- Must have Smart Meter
- Single Family Homes
- HW 2.0 SP5.0 Meters

These filters will give the pilot the best odds for success.

Key Stakeholder

<u>Key Stakeholder</u>	<u>Title</u>	<u>CNP Strategic Contact</u>	<u>CNP Installer</u>
Chuck Guffey	Councilman, City of West University	Diane Hasell	Patrick West
Peter S. Wareing	CNP Board of Directors	Richard Dauphin	Self Installed
Janiece Longoria	CNP Board of Directors	Richard Dauphin	Self Installed
Scott Fordham	CEO of Champion Energy	Kenny Mercado	Self Installed
James Rodriguez	City of Houston Council Member	Mark Kollmorgan	Self Installed
Bernie Satterwhite	City Manager, Bellaire	Diane Hasell	Patrick West
Will Hickman	Councilman, City of Bellaire	Diane Hasell	Patrick West
Dr. Phil Nauert	Councilman, City of Bellaire	Diane Hasell	Patrick West
Steven Segal	Councilman, City of West University	Diane Hasell	Patrick West
Tom Fowler	Houston Chronicle Reporter	Tom Olinger	Patrick West
Dan Wallach	Cyber Security Rice University	Kyle Miller	Kyle Miller
Donald R. Campbell	CNP Board of Directors	Richard Dauphin	Self Installed

Actions Taken as a Result of the Pilot

- Hired and trained HAN field support team
- Developed business processes for HAN field support and Customer Service.
- Develop Program Materials
 - HAN Device Operating Guide
 - Customer Service FAQ
 - SMT Brochure
- Meter Defects Discovered
 - Invalid security certificates on meters – Itron Replaced 47,000 meters with certificate issues.
 - 50% failure rates on meters less than HW 2.0 / SP5.0
 - Required meter exchanges if less than HW 2.0 / SP5.

Customer Journey – Energy Monitor Pilot

Survey 1
Getting Started
Week 1-2
Group 1 - early Dec '10
Group 2 – end Feb '11

Survey 2
Billing & Monitoring
Week 8
Group 1 – end Jan '11
Group 2 – end April '11

Survey 3
End of Pilot Evaluation
Week 12
Group 1 – end Feb '11
Group 2 – end May '11

Monthly Tracking

Usage

- Maintained connectivity
- How often look at display
- Usefulness of information

Customer support

- Contacted customer support
- Reason for contact

Other issues/comments/suggestions

Usage (since month 1)

Usage (since month 2)

Standard questions tracked monthly

Bolt-on

Installation & initial usage

- Self-install/CNP installer
- Ease of installation
- issues/problems
- Device customization
- Overall satisfaction with install
- Location of device (fixed/mobile)
- Ease of use of device

User Guide/Materials

- Familiarity
- Usefulness

Billing

- Any billing confusion
- Did bill meet expectations

Energy Consumption

- Taken energy conservation measures
- Other changes to consumption
- Actions taken as result of device info

Overall satisfaction of pilot

- Measures /suggestions for improvement

Future usage

- Advocacy
- Likely future usage of devices

Survey Results – Round #1

How easy was it to connect your in-home energy monitor to your smart meter?

#	Answer	Response	%
1	Very Easy	140	67%
2	Easy	54	26%
3	Difficult	9	4%
4	Very Difficult	1	0%
5	I was not able to connect my in-home energy monitor to my smart meter	4	2%
6	I have not tried to set-up my in-home monitor	0	0%
Total		208	100%

Survey Results – Round #1

Approximately, how far were you from your smart meter when you first connected your in-home energy monitor?

#	Answer	Response	%
1	I was standing right next to my smart meter	23	11%
2	I was 100 feet or less away from my smart meter	165	81%
3	I was more than 100 feet away from my smart meter	13	6%
4	Unsure	3	1%
	Total	204	100%

Survey Results – Round #1

How much effort did you personally have to put forth to get your in-home energy monitor up and running?

#	Answer	Response	%
1	Very low	101	48%
2	Low	74	35%
3	Moderate	27	13%
4	High	5	2%
5	Very high	5	2%
	Total	212	100%

Survey Results – Round #1

Has your in-home energy monitor maintained its connection with your smart meter since it was set-up?

#	Answer	Response	%
1	Yes, it has maintained its connection	189	89%
2	No, it has occasionally lost its connection	20	9%
3	No, it has frequently lost its connection	1	0%
4	No, it is no longer connected to my smart meter	2	1%
	Total	212	100%

Survey Results – Round #1

What type of support or assistance have you received from CenterPoint Energy for your in-home energy monitor?

#	Answer	Response	%
1	Help via email	34	16%
2	Help via telephone	36	17%
3	Help via a home visit	15	7%
4	I have not received any support	145	68%

Survey Results – Round #1

Overall, how satisfied are you with the support that you received from CenterPoint Energy with your in-home energy monitor?

#	Answer	Response	%
1	Completely Satisfied	48	73%
2	Mostly Satisfied	17	26%
3	Somewhat Satisfied	0	0%
4	Not at all Satisfied	1	2%
	Total	66	100%

Survey Results – Round #1

How often do you view the information on your in-home energy monitor?
(Please select one)

#	Answer	Response	%
1	More than once a day	128	61%
2	About once a day	48	23%
3	A few times a week	21	10%
4	About once a week	11	5%
5	A few times a month	2	1%
6	I never look at the information	0	0%
7	Unsure	1	0%
	Total	211	100%

The information displayed on your in-home energy monitor will influence you to take steps to lower your electricity consumption within the future.

#	Answer	Response	%
1	Strongly agree	72	34%
2	Agree	100	47%
3	Neither agree nor disagree	32	15%
4	Disagree	7	3%
5	Strongly disagree	0	0%
	Total	211	100%

Round #1 Survey Themes

1. Initial Connectivity was easy and simple to understand for the consumers
2. Field Support is minimal, and most trouble shooting can be performed via telephone or email.
3. Most consumers consult the device at least once a day.

Survey Results Round #2

Have you received any support or assistance from CenterPoint Energy with your in-home energy monitor since you were last surveyed?

#	Answer	Response	%
1	Help via e-mail	3	3%
2	Help via telephone	1	1%
3	Help via a home visit	0	0%
4	I have not received any support	92	96%
	Total	96	100%

Survey Results Round #2

Has your in-home energy monitor managed to maintain its connection with your smart meter since it was set-up?

#	Answer	Response	%
1	Yes, it has maintained its connection	79	82%
2	No, it has occasionally lost its connection	15	16%
3	No, it has frequently lost its connection	2	2%
4	No, it is no longer connected to my smart meter	0	0%
Total		96	100%

Survey Results Round #2

Have you experienced any new issue(s) or problem(s) with your in-home energy monitor since you were last surveyed?

#	Answer	Response	%
1	Yes	3	3%
2	No	93	97%
	Total	96	100%

Survey Results Round #2

Are you viewing the information on your in-home energy monitor more frequently, less frequently or about the same as when it was first installed?

#	Answer	Response	%
1	More frequently	16	17%
2	Less frequently	30	31%
3	About the same	50	52%
4	Unsure	0	0%
	Total	96	100%

Survey Results Round #2

Has the information displayed on your in-home energy monitor influenced you to take any steps to lower the amount of electricity that you consume?

#	Answer	Response	%
1	Yes, I have already taken steps to lower my energy consumption	65	68%
2	No, but I plan to within the next year	20	21%
3	No, and I don't plan to within the next year	5	5%
4	Unsure	6	6%
	Total	96	100%

Survey Results Round #2

Which best describes how closely the data displayed on your in-home energy monitor matched your last monthly electric bill?

#	Answer	Response	%
1	Data displayed matched my electric bill exactly	0	0%
2	Extremely close to my monthly electric bill	18	19%
3	Quite close to my monthly electric bill	33	34%
4	Quite different from my monthly electric bill	1	1%
5	Extremely different from my monthly electric bill	1	1%
6	Unsure/I have not compared	43	45%
	Total	96	100%

Survey Results Round #2

Were you expecting the data displayed on your in-home energy monitor to match your electric bill more closely?

#	Answer	Response	%
1	Yes	11	21%
2	No	42	79%
	Total	53	100%

Survey Results Round #2

Overall, how satisfied have you been with your in-home energy monitor since you were last surveyed?

#	Answer	Response	%
1	Completely satisfied	45	47%
2	Mostly satisfied	41	43%
3	Somewhat satisfied	10	10%
4	Not at all satisfied	0	0%
	Total	96	100%

Round #2 Survey Themes

1. Very little support after connectivity established. All inquires handled over the phone/email with HAN Service Representative.
2. Usage of the device drops slightly after initial installation.
3. Most participants have taken steps to adjust their energy usage behaviors since receiving the device.
4. Most participants did not expect the device to match the electric bill exactly

- “Just 2 weeks ago, I noticed a substantial up charge compared to a normal expected amount during cool weather. I checked the upstairs electric water heater and notice it was leaking and not cycling. I turned it off immediately and replaced it. Without the monitored, I might not notice it until the substantially high bill would have arrived.”
- “Set up was painless. I read the instructions and then handed everything to my wife to set up. She does not typically use electronics (other than the TV) and has no mechanical knowledge so I figured it would be more of a fair test to ask her. She breezed through the instruction booklet and set it up on the first try. “
- “It is very useful. I live in a house where there is constant activity. Everyone loves, especially how it lets you know how much energy is being used at a certain time of day and with the different types of appliances. Even the little kids are learning to read it and keep up with the usage.”
- “I am amazed at how well the device informs me the usage breakdown, it allowed us to manage when we were at our highest usage in a day and what we could do to be more cautious in what was being used and if it necessary. It’s a great way to manage my daily and monthly usage.”
- “Was a great experience! I Installer was very informative and helpful! He worked with my time schedule and had answers for all my questions. Not sure how you could improve on that!”
- “I love the box. I look at it all day, as I am retired. It has made very conscience of what is on in my house. Thanks, for doing this. “

- Communicate results to PUCT and the Implementation Project Relating to Advanced Metering (AMIT).
- Complete program surveys.
- Present to Retail Community at Retail Market workshop April 5th.
- Continue to provide support for the 500 pilot participants.