



PSO gridSMART – Owasso Project Update

November 21, 2011

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From

AEP PUBLIC SERVICE
COMPANY OF
OKLAHOMA™



PSO gridSMART Project Overview

A 14,000 meter project that includes a comprehensive set of technologies and programs that can transform our utility operations and shift customer behavior

Advanced Metering Infrastructure

- Automated remote meter reading with 15 minute interval data
- On-demand meter reads and status
- Automated and on-demand outage and restoration signaling
- Automated remote connect and disconnect – open, close, credit and reconnect following payment

Home Area Network / Consumer Tariffs

- In-home displays
- Customer Web Portal for enhanced energy monitoring, management and analysis
- Time-differentiated tariff programs

Grid Management Technologies

- Automated outage order creation
- Distribution grid monitoring & control – circuit breakers, switches, reclosers, capacitor banks
- On-demand remote meter status - voltage check (ping)
- Automated circuit reconfiguration
- Voltage optimization through volt/var control

Two-Way Communication Network



Grid Management Update

- Distribution Automation
 - Operational in December, 2011
- Volt/Var Control
 - Operational in 1st quarter 2012
- Delay in schedule due to summer loading on distribution circuits



Customer Web Portal

- Single account sign on PSOKLAHOMA.COM
- Ability to view usage information, near real time
- Bill analysis and rate comparison
- Energy saving tips
- Carbon impact
- Time line
 - Mid Nov – Letter to Customer: “Web Portal Coming Soon”
 - Late Nov – Testing
 - Mid Dec – Go Live
 - Mid Dec – Communication to Customers: “Web Portal Here”



My Report – Web Portal

BACKROOM HELP MESSAGES 4 MY PROFILE SIGN OUT

Welcome! Read more...

My Report Bill Analysis Energy Use & Cost Rate Plan Environment My Neighborhood

Smart Meter
76 502 23

Today I have used **0 Wh** at a cost of **\$0.00**

My Report
Last meter read: Thursday, September 8th, 3:30 PM

What will my bill be?

\$122
Estimated bill
Sept. 02 - Oct. 04, 2011

Estimated bill to date
\$25

\$122

Your bill might increase
Your projected bill might be \$13 higher than your previous bill. Your bill may increase due to several factors, including the weather or a longer billing cycle. See reasons why.
[View Bill Analysis](#)

What is my electricity use?

390 kWh
Use To Date
Sept. 02 - Sept. 08, 2011

Fri	Sat	Sun	Mon	Tue	Wed	Thu
60	59	58	58	59	58	37

Electricity Use: Last 7 Days

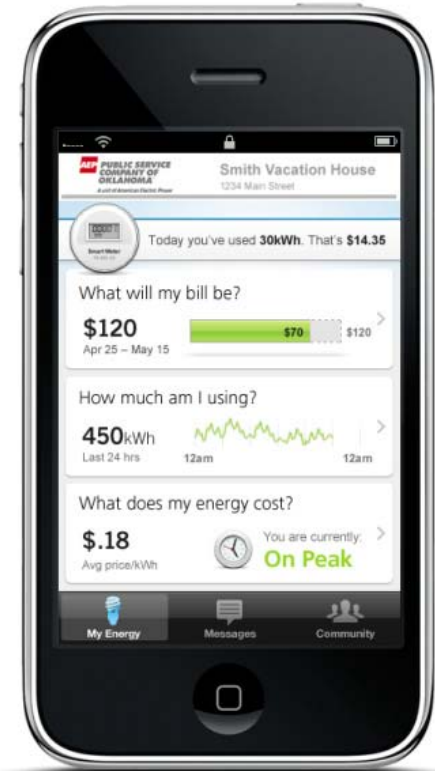
You have used more
You are projected to use 206 more kWh this billing period than during your previous billing period.
[View Electricity Use](#)

What does my electricity cost me?

\$0.06
Average
per kWh used

CURRENTLY	\$0.06	\$0.06
off-peak		on-peak

You are in a low-cost tier
The price you pay for electricity varies by time of day, and from weekday to weekend.



Consumer Tariffs

- Voluntary Programs: roll out early 2012
 - Alternative rates: Customers can save by reducing or shifting electrical usage outside high-cost peak periods
 - Identify how various consumer programs (tariffs, in-home equipment, etc.) relate to **energy usage**
 - PSOklahoma.com for additional information
 - After tariffs are approved begin consumer education and enrollment
- Residential Consumer tariffs
 - Time of Day (existing)
 - Variable Peak Pricing with a Critical Price Peak
 - Direct load control of air conditioner with a thermostat opt out functionality

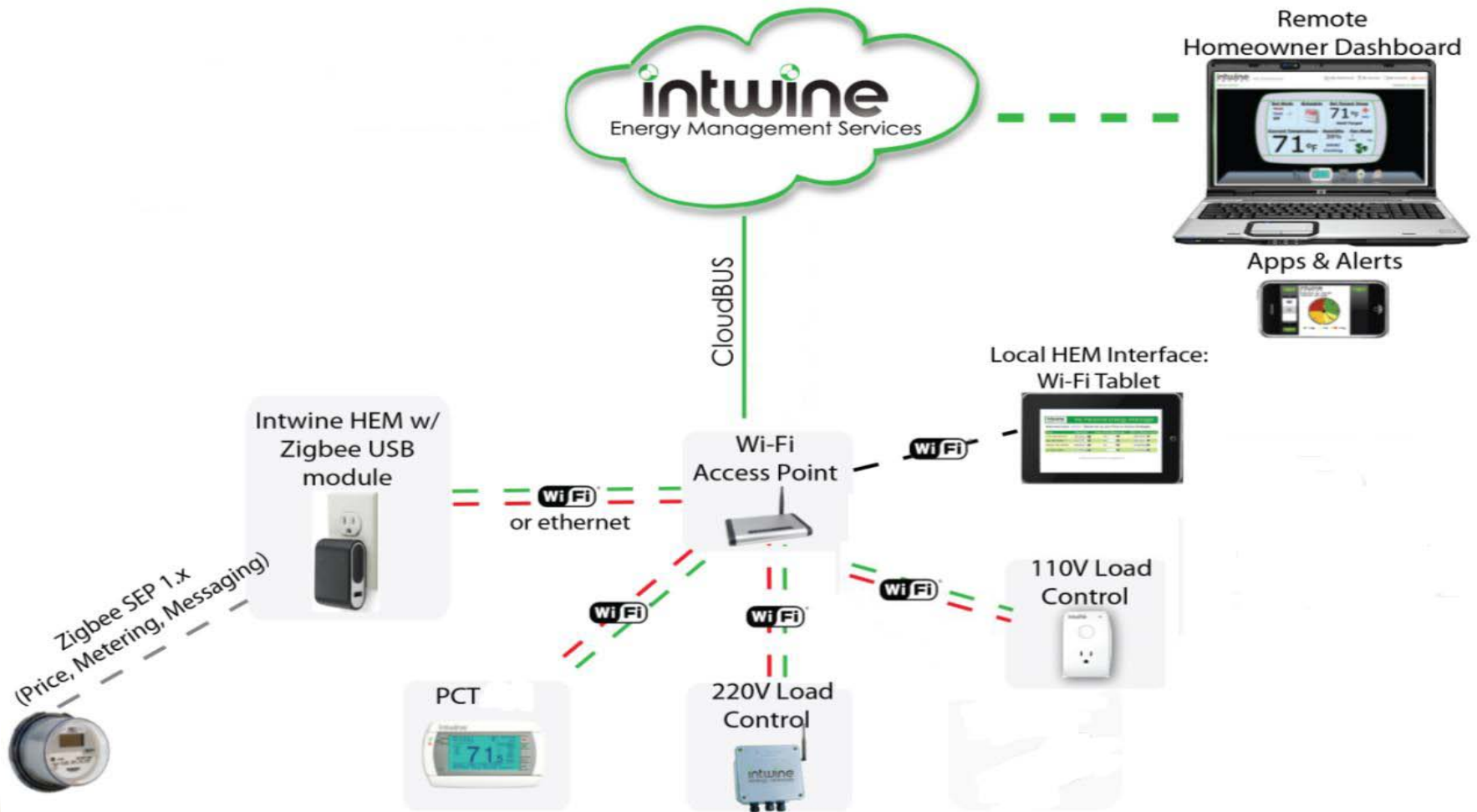


Home Area Network

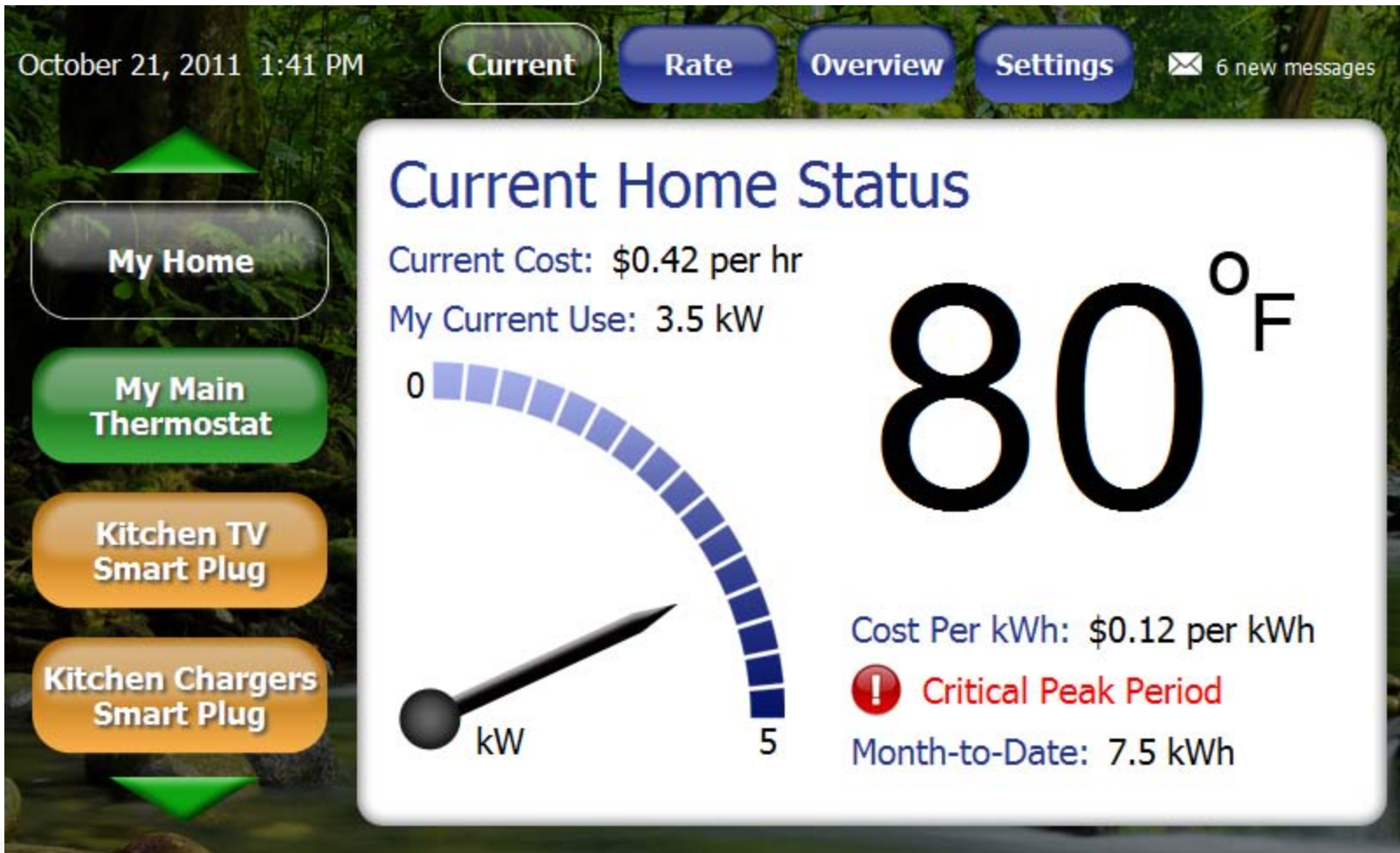
- Programmable Communicating Thermostats with WiFi capability for remote consumer control
- Home Energy Manager with WiFi capability for remote consumer control
- In home display for customers without internet access to view data



Home Energy Manager



Home Energy Manager – Main Screen



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Home Energy Manager –Screen

October 21, 2011 1:45 PM Current Rate 6 new messages





My Home

My Main Thermostat

Kitchen TV Smart Plug

Kitchen Chargers Smart Plug

Thermostat Rate Response

 Critical (\$0.64/hWh) Set to: 62°F Edit
 High (\$0.64/hWh) Set to: 70°F Edit
 Medium (\$0.64/hWh) Set to: 72°F Edit
 Low (\$0.64/hWh) Set to: 76°F Edit

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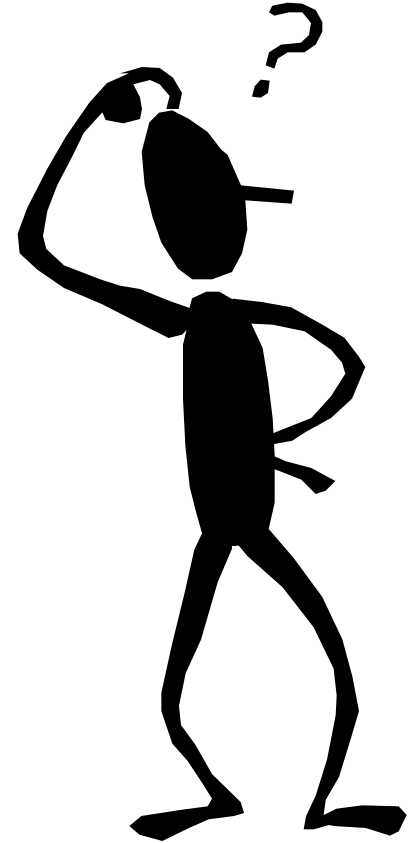


Timeline

- December 2011
 - Customer web portal
 - Distribution automation
- 1st Quarter 2012
 - Volt/Var control
- February to May 2012
 - New consumer tariff enrollment
 - Install in home equipment
- 2012 - onward
 - Evaluation



Questions



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