



OG+E

Positive Energy[®] Smart Grid Status Update

November 21, 2011

Ken Grant – Managing Director, Smart Grid

Agenda



- Smart Grid Overview
- Demand Response Results
- Integrated Volt VAR Results
- Community Outreach
- Security and Privacy
- DOE Update
- Status Update
- Key Upcoming Milestones
- Key Challenges

Smart Grid Overview – Functional Areas

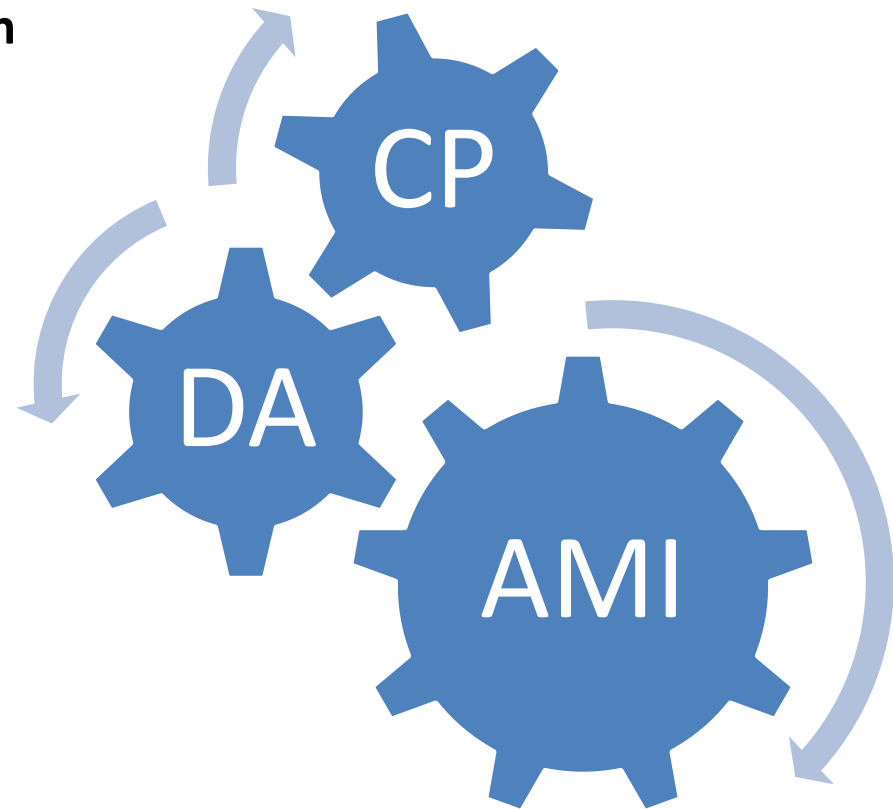


❖ AMI (**Advanced Metering Infrastructure**)

Digital meters, a secure communication network, new process integration, and information technology systems to manage vast amounts of data

❖ CP (**Customer Programs**) Customer programs enabled by in-home devices and time based rates

❖ DA (**Distribution Automation**) Automated switching and improved voltage control



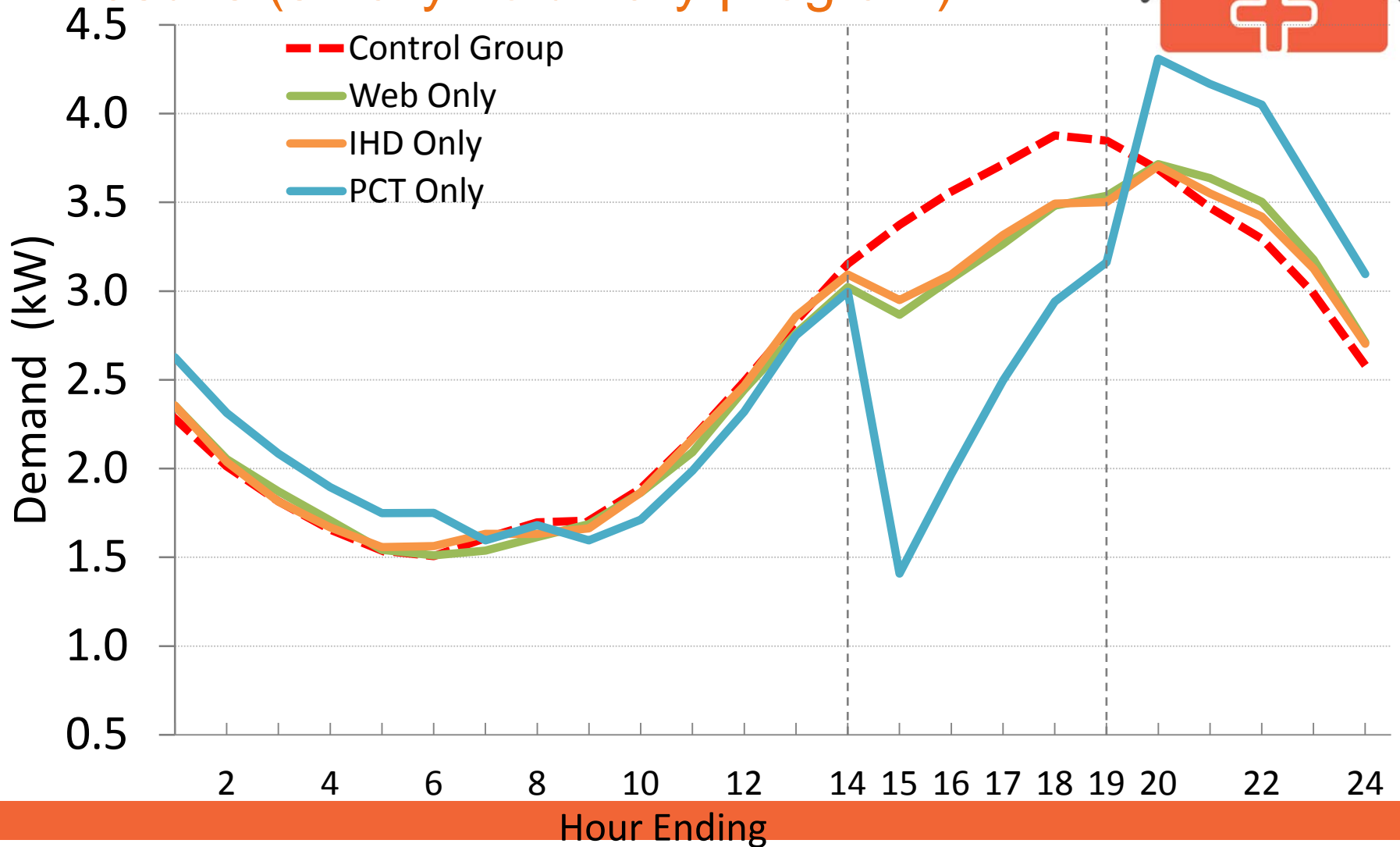
Smart Grid Overview -Rationale



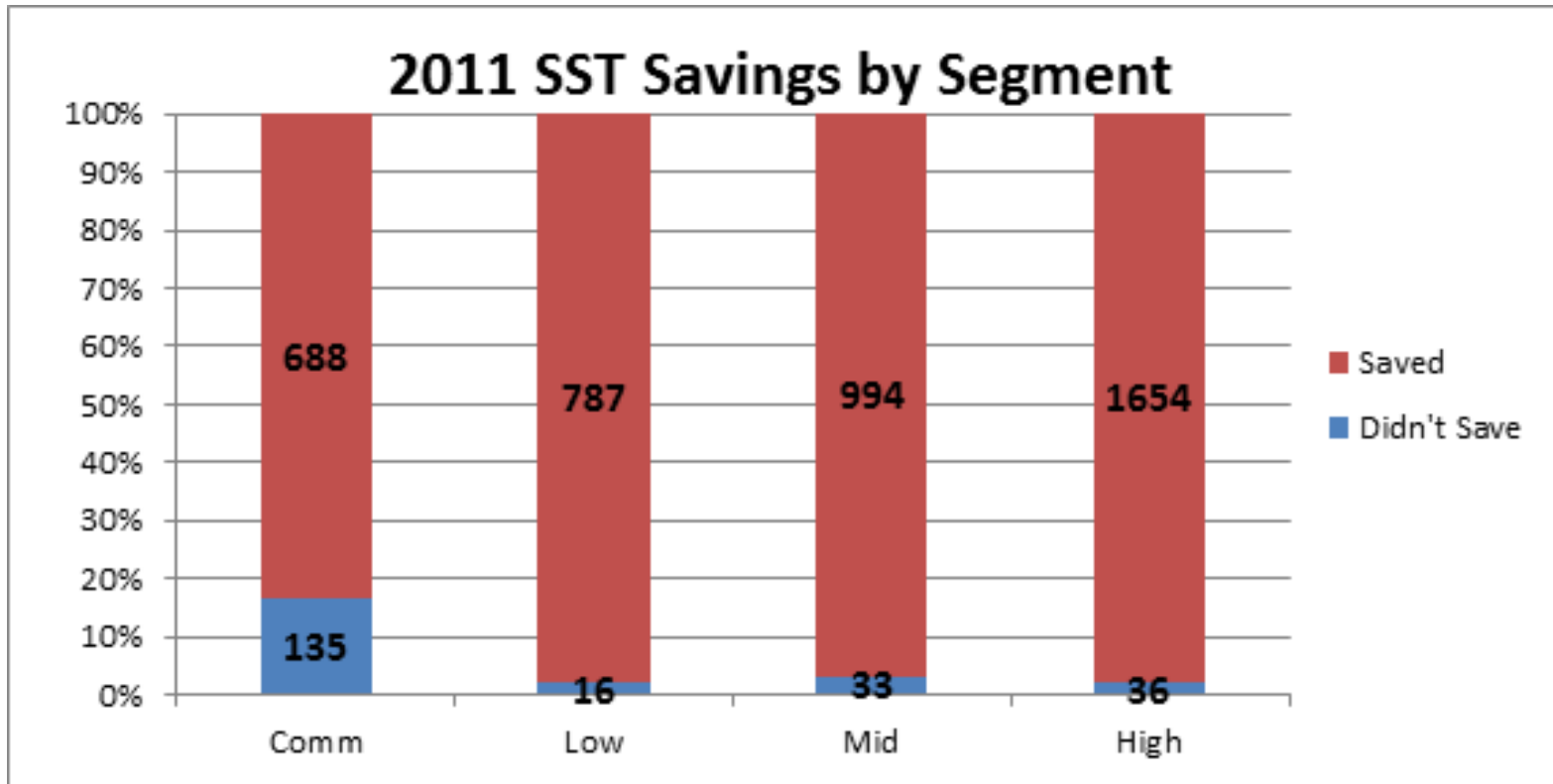
- ❖ Empower customers with the information and tools necessary to better manage their individual energy usage and costs
- ❖ Create opportunities to reduce higher cost, peak energy consumption as well as the need for additional fossil-fueled power plants
- ❖ Reduce utility operating costs while improving the ability to respond to customers
- ❖ Improve the ability to anticipate, manage, and respond to outages and other system disturbances

Demand Response Results - 2010

Results (strictly voluntary program)

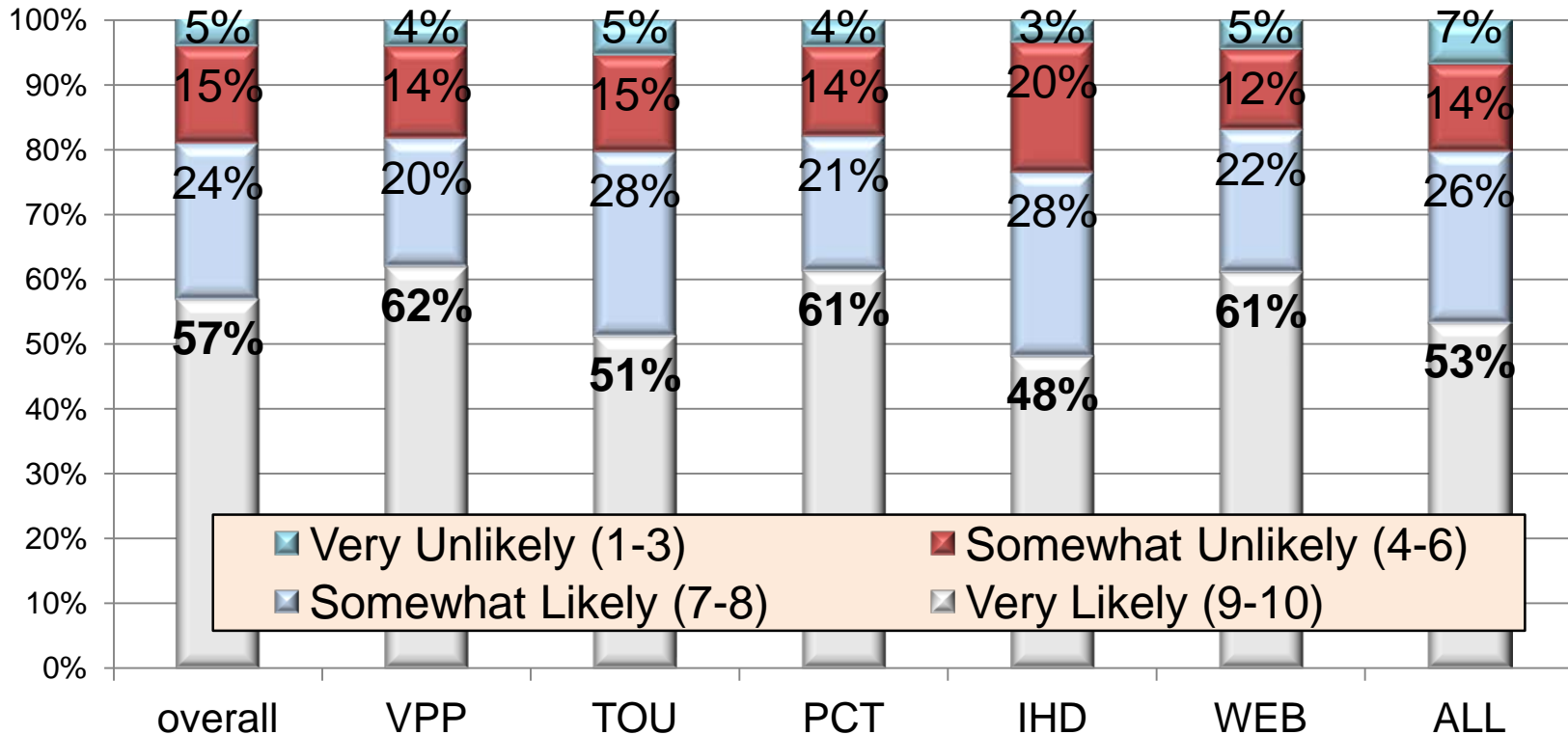


Demand Response Results – 2011 Savings (strictly voluntary program)



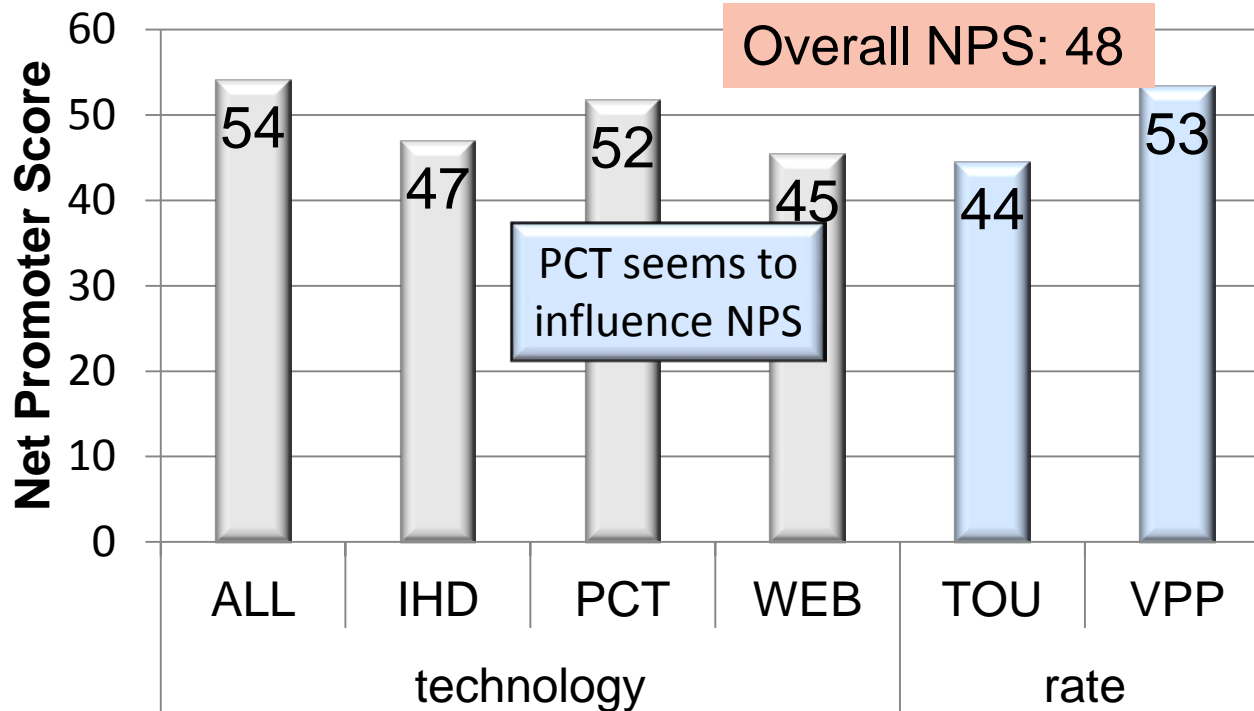
Customers that had a dollar savings on monthly bills

2011 Study Participant Survey



Likelihood to Continue Higher for VPP & PCT

2011 Study Participant Survey - NPS



On a scale of 0-10*, where 0 is highly unlikely and 10 is highly likely, how likely would you be to recommend the Smart Study TOGETHER™ to a friend or family member?



My Report
Last meter read: Tuesday, January 25th, 9:30 AM

Today I have used 23 kWh at a cost of \$1.78

Smart Meter
78 000 23

What will my bill be?
Estimated bill to date
\$121
Estimated bill
Jan. 07 - Feb. 07, 2011

Your bill might increase
Your projected bill might be \$19 higher than your last 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?
652 kWh
Use To Date
Jan. 07 - Jan. 25, 2011

What does my electricity cost?
\$0.11
Average Price
per kWh used

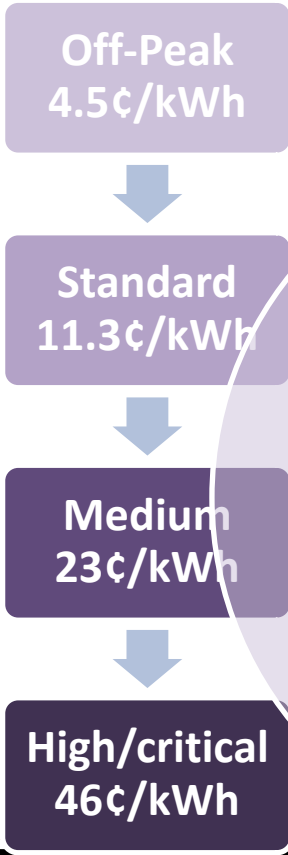
You are in a low-cost tier
The cost per kWh varies with how much electricity you use.

Web Portal

DR 2012 Recommendation (still voluntary program)

VPP Rate

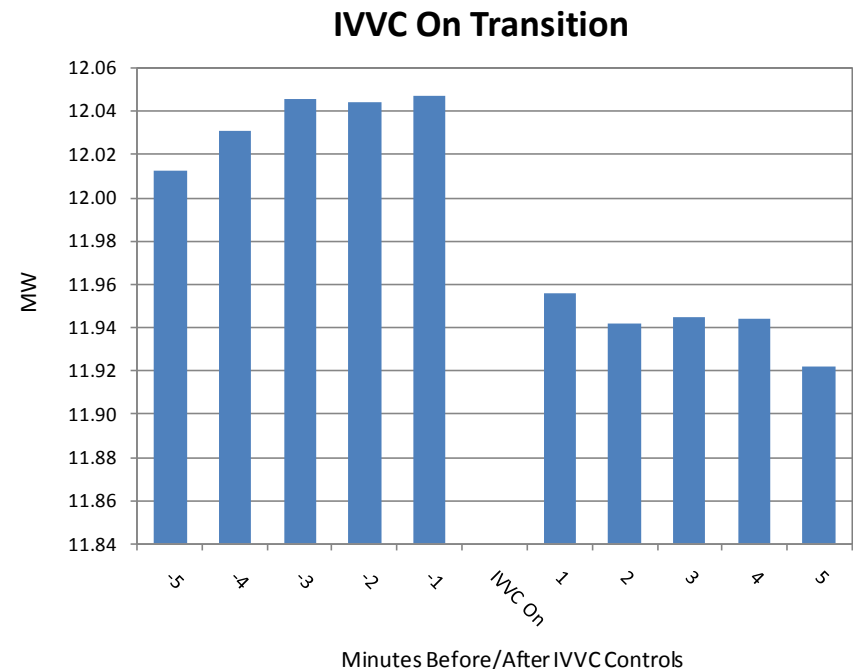
PCT



Integrated Volt VAR Results -- 2010



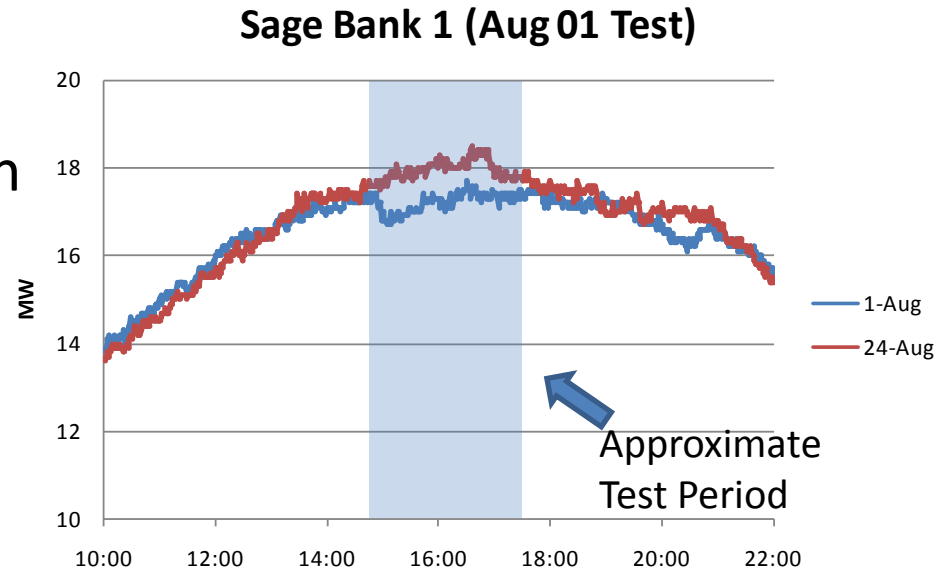
- 2010 deployment included:
 - 18 capacitor bank controllers/monitors
 - 4 circuits
 - 2 substation banks
- 0.8-2.4% estimated demand reduction based on 2010 deployment
- Range of potential demand reduction expected to narrow as deployment / testing expand



Integrated Volt VAR Results -- 2011



- 2011 deployment included:
 - 214 capacitor bank controllers/monitors
 - 42 circuits
 - 20 substation banks
- 2.1% average demand reduction across tested banks
- Constraint remediation will support greater impact in 2012 and beyond



Security and Privacy



- Security
 - Cyber Security Plan Approved by DOE
 - Cyber Security visit conducted by DOE 10/27/2011
 - Initial feedback indicates OG&E has several best practices when it comes to Cyber Security
 - OG&E is tracking to the approved DOE Cyber Security plan, no required updates where identified
- Privacy
 - Meter does not contain any personal information
 - Pursuant to House Bill 1079 OG&E does not sell or provide customer data to 3rd parties without customer consent.

Community Outreach Events



- Community events in 2011 = 54 events
 - For example: Assoc. of Building Managers, YWCA OKC, Rotary, Kiwanis, Hispanic Chamber of Commerce, etc.
- Day long and multi day events in 2011 = 7
 - For example: Ada Green Expo, OK State Fair, Oklahoma Minority Development Council, FAA Energy Awareness Event
- Continue to adjust education and outreach efforts based on customer and OCC Staff feedback

DOE Update



- Required Documentation:
 - Project Execution Plan, Metrics and Benefits Plan, Customer Behavior Study Plan, and Cyber Security Plan submitted and approved
- Reporting requirements
 - Build Metrics quarterly
 - Impact metrics semi-annual
 - Earned value metrics monthly
 - Jobs reporting quarterly
 - Program status monthly
- Total cost share from DOE through September is approximately **\$77** million
- Site Visits
 - First Program site visit from DOE completed
 - First Cyber Security visit completed
- First financial audit completed (E&Y)



Benefits (as of October 2011)

- Number of incidents of Theft / Tamper detected = **841**
- Truck Rolls Avoided = **185,975**
- Move In/Out accomplished remotely = **15,941**
- Remote Connect / Disconnect = **127,536**
- FTE Reduction = **81** FTE's (as of August)
- Meter Accuracy = **0.105%** increase in accuracy

Status Update



- Meter Installations
 - As of 11/17/2011, over 466,000 meters installed.
 - Projecting approximately 494,000 installed by the end of 2011
- Geographic Meter Implementation
 - Currently finishing deployment in Eastern Oklahoma City Metro Area
 - Starting deployment in Guthrie and Western Oklahoma City Metro Area
- Demand Response
 - The 2011 study has completed and study results are being complied
 - Implementing the 2012 program is in progress
- Energy Information Website progress
 - As of 11/4/2011, **13,862** customers enrolled
- Distribution Management System
 - Factory Test Completed and System delivered to OG&E facility

Status Update



- Distribution Automation
 - **46 of 98** circuits installed and provisioned with IVVC
 - **5 of 50** circuits installed and provisioned with Reclosers
- Field Inventory
 - The inventory continues in the Eastern and Western Oklahoma City areas.
 - To date **229 of ~1100** circuits have been inventoried, reviewed for quality, and loaded into OG&E GIS
- Wide Area Network
 - **15 of 47** Backbone and **149 of 176** WiMax sites installed and accepted
- Expense update
 - Total project expenditures through September 2011 are approximately **\$179** million
- Call Center
 - No significant call center impacts to date
 - The call center is currently supporting Energy Information Website and the DR study

Status Update



- Complaints received for 2011
 - **359** complaints to OGE concerning the program.
 - **67** Customer Service (Notification Process/Program)
 - **182** Damages
 - **10** Service Interruptions
 - **100** Billing
 - **334** Corix (Meter Install)
 - **53** Customer Service (Vendor)
 - **172** Damages
 - **10** Service Interruptions
 - **99** Billing

Status Update



- Complaints received for 2011 (Con't)
 - **12** Corix (HAN device Install)
 - **4** Customer Service (Vendor)
 - **8** Damages
 - **0** Service Interruptions
 - **0** Billing
 - **13** OG&E
 - **10** Customer Service
 - **2** Damages
 - **1** Billing
 - Of the 2011 total complaints, there have been **87** warranted complaints, **12** unknown complaints, and **225** unwarranted complaints
 - In 2010 there were **186** Warranted complaints.

Major Milestones Upcoming for 2011



- Final results of second of two Demand Response studies
- Final results of second summer of IVVC testing
- Major IT applications deployed (Manager of Managers and Energy Information Website 2.0)
- 494,000 meters installed

Key Challenges



- Overcome
 - Distribution automation communication issues
 - NERC CIP regulatory compliance
 - WAN cost and schedule risk management
- Outstanding
 - Distribution Automation Volt VAR module development
 - Field Inventory project budget and scope
 - Deployment behind by ~10,000 meters (weather and vendor staffing related)
 - Crew availability for distribution automation installation



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WITH ALL YOUR POWER  WHAT WOULD YOU DO?