



PUCT Project No. 41061 Increasing DR in ERCOT

March 14, 2013

Agenda

- Comverge Introduction
- Economic vs. Reliability Demand Response
- The Reliability Problem
- The Comverge Plan for Increasing DR in ERCOT

Comverge Introduction

Highlights

- World-leading provider of Intelligent Energy Management (IEM)/Demand Response (DR) solutions for all customer classes
- Headquartered in Atlanta, GA
- ~500 employees
- Revenues: 2012 - ~\$180.0 million 2011 - \$136.4 million
- Acquired by H.I.G. Capital – 5/2012

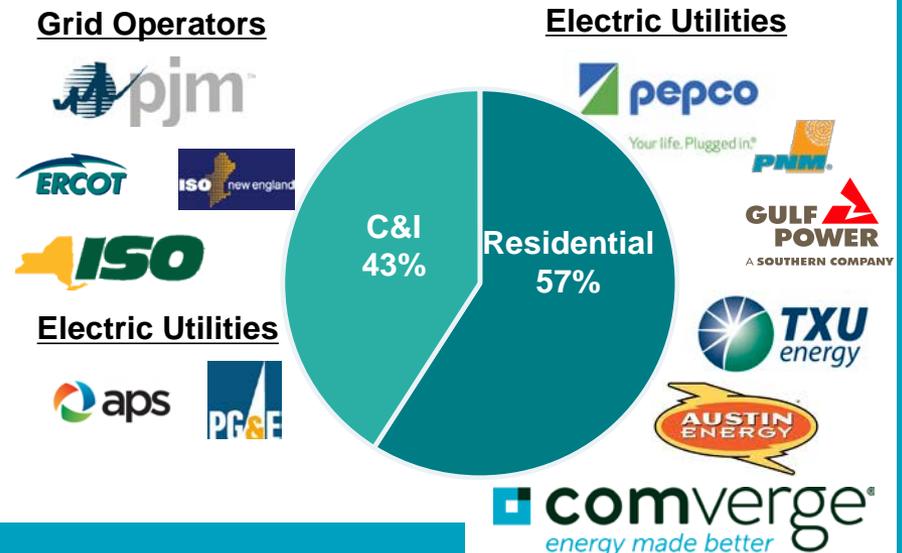
Client Base Geography



Wide Range of Services – Residential / Sm. Comm.

- Recruited and installed over 500,000 devices in past two years
- 24X7 NOC provided 32,000 MWh of peak load reduction in 2012
- Over 10,000 monitoring points deployed & checked in real time to insure reliable operations
- 360,000 call center transactions in 2012 across nine major programs

Revenues From All Customer Classes (2011)



Comverge Introduction

- Operating in Texas since 2001
 - Austin Energy – Power Saver Free Thermostat Program
 - TXU Energy - *Brighten*[®] *iThermostat* program
 - Utility C&I Standard Offer DR Programs



- Active market participant at ERCOT
 - ERCOT C&I ERS Program (Formerly EILS)



Economic vs. Reliability DR

• Economic DR

- Transaction between a REP or DRP and an end-use consumer
- Transaction can take place within the wholesale market construct or outside of the wholesale market
- Economic demand response must be allowed to fully participate in the wholesale market
- Economic incentives (rather than reliability) are the fundamental drivers of the consumers' and the REP/DRP actions
- “Loads in SCED” required for full market participation
- Demand response should be compensated at full LMP

• Reliability DR

- ERCOT, operating as the reliability coordinator, **has the right** to curtail an end-use customer's electricity consumption
- ERCOT procures a call option from a customer or an aggregation of customers
- Curtailments are strictly based on the reliability needs of ERCOT and not the financial needs of any market participant
- Provides flexible reliability options to ERCOT
 - Local area curtailments
 - Wide-spread curtailments.
- Customers are compensated for the call option and for energy provided back to the market when curtailed by ERCOT

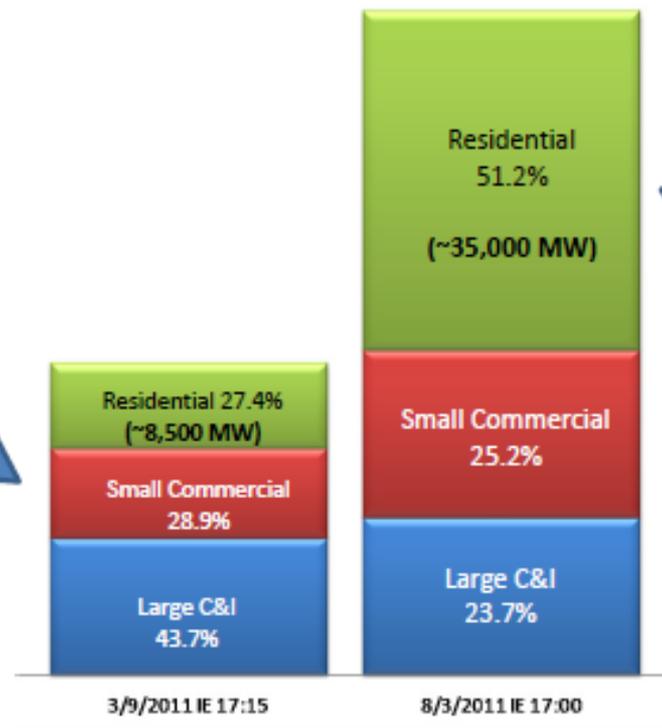
The Reliability Problem

- ERCOT facing growing demand for electricity
- Limited capacity additions
- Reserve margins shrinking
- NERC letter to ERCOT
 - Capacity resources below Planning Reserve Margin target
 - Projected to further diminish through the next ten-years
 - ERCOT will need resources as early as summer 2013
 - Request ERCOT's plan to address these issues by April 30
- Much of the problem emanates from residential A/C load

During summer peak times, the mass market can account for over 75% of ERCOT's electricity demand

ERCOT Electricity Demand

During cool months, the mass market is less than 60% of ERCOT's demand



During summer peak hours, A/C load pushes the mass market to over 75% of ERCOT's 68,000 MW of demand (and residential customers represent more than half of the total)

Source: ERCOT

Let's Solve The Problem

- In the very near term:
 - ERCOT needs a market tool:
 - That can address residential and small C&I peak load
 - That can be brought on line quickly (summer 2013)
 - That can be expanded over the planning horizon
 - That can be shown to NERC to be a reliability resource
- Economic DR, while a valuable long-term market tool, is not a reliability resource

Reliability Response Pilot Program

- Residential A/C cycling curtailment pilot
- Pay for performance program
- Targeted at Residential & Small Commercial market (75% of system peak)
- Procured by ERCOT through an auction
- Deployed and evaluated by ERCOT

The Reliability Response Product

- Sufficient scale so to enhance reliability
- Resources this summer to address NERC concerns
- Rapid Time to MW (TTM)
- Pay-for-performance model (i.e. payment based on MWs delivered)
- The program be of sufficient duration to attract market participation
- The program does not contribute to wholesale market price reversal
- The program be competitively bid

Program Benefits

- Residential customers provide reliable DR
- Time to MW (TTM) is critical metric – Addresses 2013 problem
- Immediate job creation
- Residential/Small Commercial has attractive attributes
 - Main driver of the Texas peak
 - Incremental capacity addition from day 1 (TTM is rapid)
 - Resource increases with temperature
 - 100% automated for fast dispatch and reliability (<10 minute response)
 - Low attrition rate
 - Proven technology
- Seed the market with tools that consumers can use for years to come to manage energy spend

Conclusions

- Residential Demand Response needs to be part of the RA solution
 - Real Results are achievable in the short term (TTM)
 - Residential Demand Resources are reliable
 - Residential Demand Resources have quick (<10 minute) response time
 - Program alleviates some of NERC's concerns
- Mass scale Residential DR will take years to develop without PUCT support
- DR is 1/3 to 1/2 the cost of new generation

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