

# **TXU Energy**

## **Energy Saving Solutions**

### **Smart Meter Enabled Products & Services**



# Smart Buildings – Today / Tomorrow

## Customer Generation & Transportation

Distributed Renewable Generation



Electric Vehicles (PHEV)

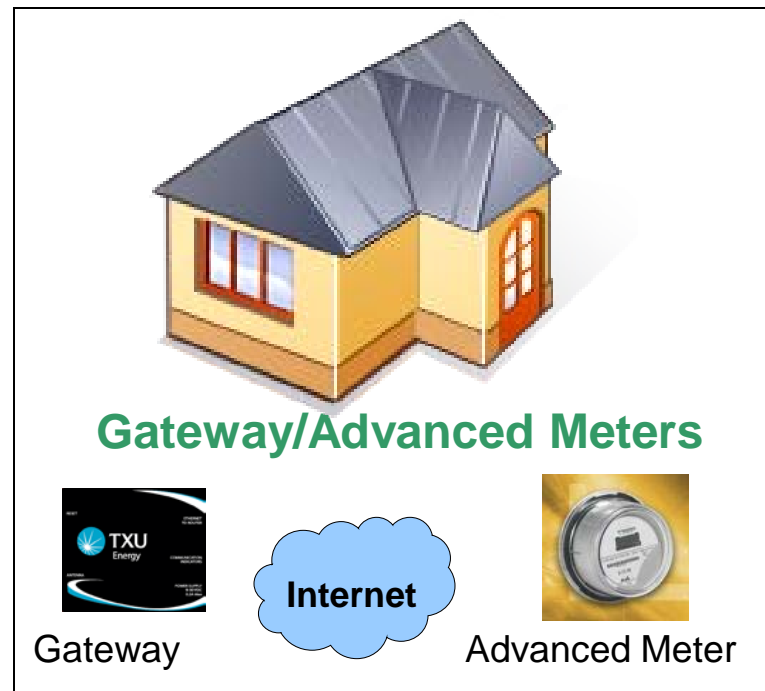


Smart Appliances



Smart Switches

## Customer Home Area Network



PC with Internet Access



Wireless Devices



Routers

## Customer Interface



Plug-ins



In-Home Displays



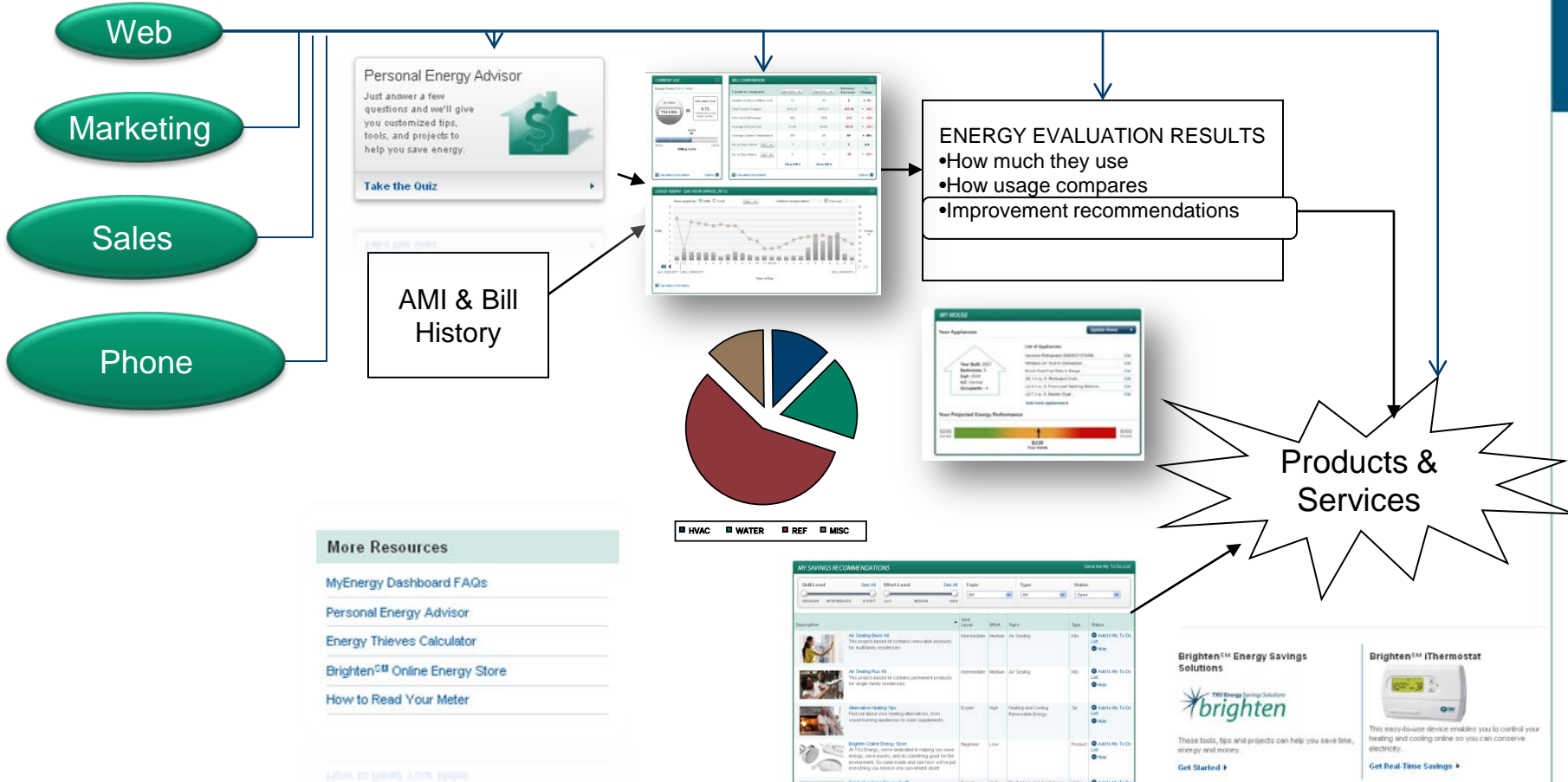
Water Heaters



Thermostats

A vision of the future includes developing and applying energy management devices and support systems to create a robust customer solution

# Evolution of Energy Management Services



Customers adoption will evolve over time as they gain insights, become better informed and are educated from Smart Meter enabled products and services

# *Smart Meter Enabled Programs*

- Power Monitor (In Home Display)
- iThermostat (Programmable Communicating Thermostat)
- PowerSmart (Time of Use rate plan)
- Electricity Usage Reports (SMT e-mail Reporting)
- MyEnergy Dashboard (SMT customer web portal)
- Mobile Applications (SMT mobile portal)
- EILS / LRs / DR (Load limiting programs)
- Solar Lease Program
- Distributed Renewable Generation (DRG)
- FlexPower (PrePay)

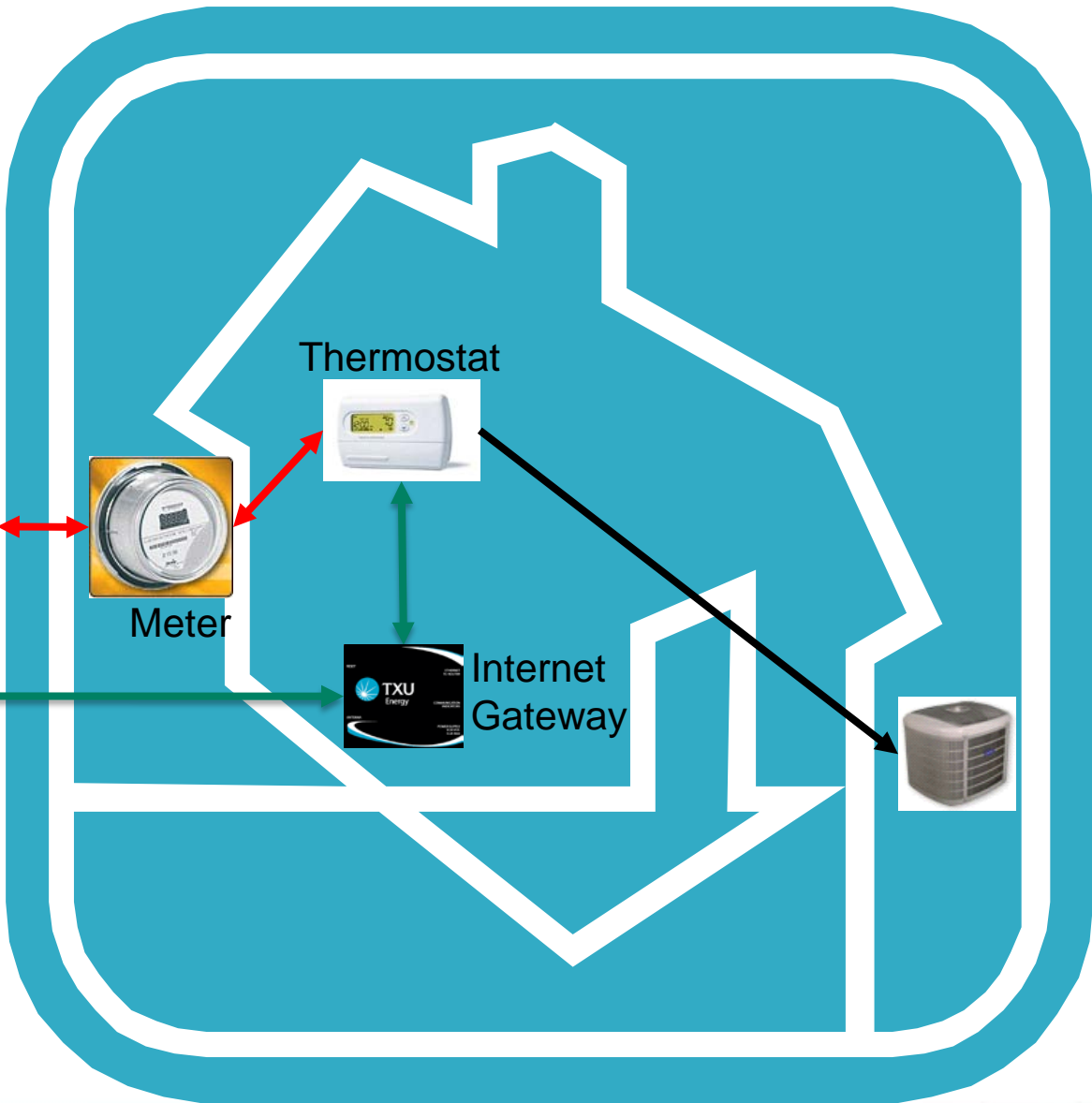
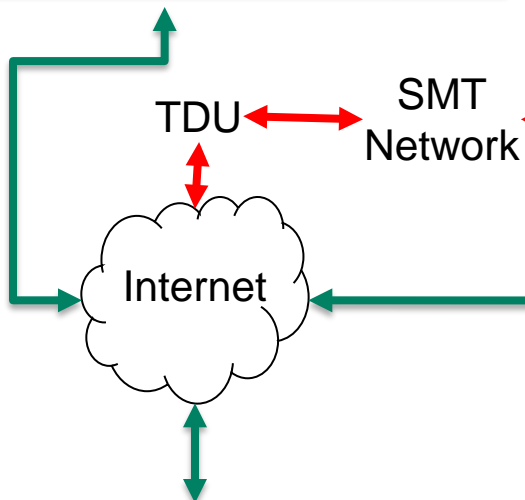
**TXU Energy offers a wide variety of Smart Meter inspired and enabled products and services to both our Residential and Small Business customers**

# iThermostat DR Program

## Communication Options





Customer Web Portal  
Monitor, Track, Program or  
Modify Thermostat Settings



Utility Portal  
Send Demand Response Events,  
Pricing Signals and Alerts

# iThermostat - Customer Portal

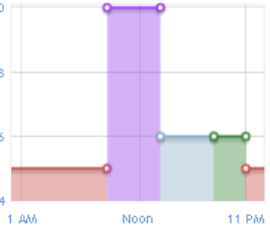
MY PROFILE | MANUALS | LOGOUT



## Program Settings

THERMOSTAT PROGRAMS	SET AND SCHEDULE HOLDS	CYCLING EVENT OPT-OUT
Select Mode	Select Program	Select Day
Downstairs	<a href="#">New 5-1-1 Program</a>	<a href="#">Weekday</a>
Cool	<a href="#">New 5-2 Program</a>	<a href="#">Saturday</a>
Heat	<a href="#">New Seven Day Program</a>	<a href="#">Sunday</a>
Upstairs	Heat Up	
Cool	Heat Down	
Heat	<a href="#">Cool Down</a>	
	Cool Up	
	Company Up	
	Company Down	

Morning Start Time: 9:00am Temp: 80  
Day Start Time: 2:00pm Temp: 76  
Evening Start Time: 7:00pm Temp: 76  
Night Start Time: 10:00pm Temp: 75



Send To Thermostat



New technologies provide opportunities for customers to have control at their convenience on web and mobile devices



# iThermostat - Utility Portal

**TXU Energy - Customer Web Portal**  
Monitor, Track, Program or  
Modify Thermostat Settings

The screenshot shows the 'Program Settings' page of the iThermostat web portal. At the top, there are navigation links for 'MY PROFILE', 'MANUALS', and 'LOGOUT'. The main header includes the 'iThermostat' logo and a house icon with a thermostat. Below the header, there are three tabs: 'THERMOSTAT PROGRAMS', 'SET AND SCHEDULE HOLDS', and 'CYCLING EVENT OPT-OUT'. The 'THERMOSTAT PROGRAMS' tab is active, showing a table with columns for 'Select Mode', 'Select Program', and 'Select Day'. The 'Morning Start Time' is set to 9:00am with a temperature of 80. The 'Day Start Time' is 2:00pm with a temperature of 76. The 'Evening Start Time' is 7:00pm with a temperature of 76. The 'Night Start Time' is 10:00pm with a temperature of 75. A 'Send To Thermostat' button is located at the bottom right of the settings area.

**TXU Energy - Utility Portal**  
Send Demand Response Events,  
Pricing Signals and Alerts

The screenshot shows the 'Ad-Hoc' control event configuration page in the utility portal. It features a 'Target Areas' section with a list of areas, including 'TXU (2490.8 kw)'. There are sections for 'Direct Load Rates' (Default), 'TOU Rates' (Select All Rates), and 'Control Strategy' (TOU). The 'TOU Strategy' is set to 'Critical'. The 'Start Date' is 2009-08-31 and the 'Start Time' is 02:45 PM. The 'Duration' is set to 1 hour. There are 'Execute' and 'Save as Template' buttons. Below the configuration, there is a 'Map' section showing a 'Load Shed' event on a map of Texas and Louisiana. The map displays a heatmap of demand response events, with a 'Send To Thermostat' button at the bottom.

**New technology opportunities provide not only customer advantages but utilities can be managed at levels never before cost effectively available**

# Internet Applications

## MyEnergy Dashboard

The screenshot shows the MyEnergy Dashboard for a TXU Energy account. The page includes a navigation menu with links like 'Manage My Account', 'Plans & Offers', and 'Energy Savings Solutions'. The main content area is titled 'MyEnergy Dashboard' and features several key sections:

- COST & USAGE SUMMARY:** Shows current usage for the week of 08/08-08/14 at \$268 (2783 kWh) and a projected usage for the next billing cycle of \$466-\$569 (4829-5095 kWh).
- BILL COMPARISON:** A table comparing current usage to the previous period.
 

I want to compare:	Aug 2011	Jul 2011	Increase/Decrease	% Change
Number of Days in Billing Cycle	29	30	-1	-3%
Total Current Charges	\$459.38	\$349.51	\$109.88	+31%
kWh Used (Bill Usage)	4753	2549	2204	+86%
Average kWh per Day	163.9	84.97	78.93	+93%
Average Outdoor Temperature	92°	89°	3°	+3%
No. of Days Above [90°]	29	30	-1	-3%
No. of Days Below [60°]	0	0	0	0%
- USAGE GRAPH - DAY VIEW (AUG 26, 2011):** A combined bar and line chart showing electricity usage (kWh) as bars and outdoor temperature (°F) as a line over a 24-hour period. Usage peaks during the day, corresponding to higher temperatures.
- Product Recommendations:** Sections for 'Brighter™ Online Energy Store', 'Brighter™ Thermostat', and 'Personal Energy Advisor'.

## Electricity Usage Report

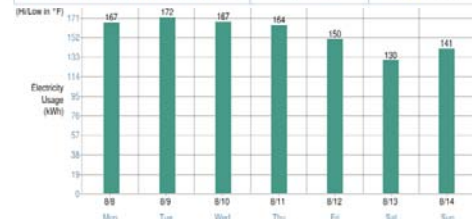


### Electricity Usage Report

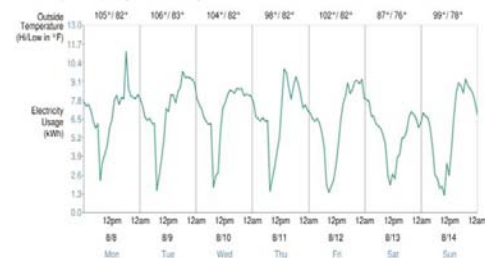
Here's the weekly Electricity Usage Report that you requested. It shows your energy usage patterns and costs, as well as the temperature variations that impacted both during this time period. We hope this information gives you better insight into your electricity usage so that you can manage your consumption and lower your costs.

#### Your Electricity Use At-A-Glance

	kWh	Dollars
Actual Usage for Week of 08/08 - 08/14	1091	\$174
Projection for Billing Cycle Ending 08/17	4259 - 5205	\$455 - \$556



#### Hourly Electricity Usage for Week of August 08 - 14, 2011



Weather temperature data for the 75229 zip code is based on information received from National Oceanic and Atmospheric Administration.

#### View your Electricity Usage History and learn about Energy-Saving Tips.

TXU Energy MyEnergy Dashboard™ is a collection of charts and graphs that help you understand and manage your electricity usage and costs. Visit Energy Solutions on our website to find tips, tools, and easy-to-do projects that can help you lower your electricity costs.

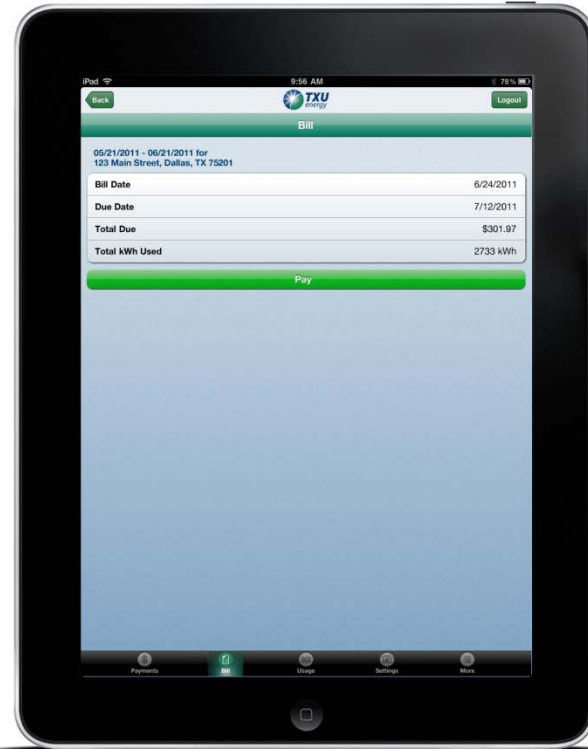
Usage information provided in the Electricity Usage Report is based on estimates provided by the Smart Meter Texas Program. Usage data may not be available on occasion. If there is a short duration in data communication, your summary may reflect missing data. If data is missing for a prolonged period of time, we may suspend sending your report until sufficient data can be collected. Your monthly bill provides your actual usage and costs.

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# Mobile Applications



Customers want to have access, manage and control their energy management tools when it is most convenient to them and mobile applications will allow that real time on-the-go access

# Smart Grid Energy Service Challenges

## Bandwidth / Data Management / Security

- Real-time access
- Push and pull capabilities
- Third party security

## Technology / Interoperability

- Various and evolving HAN protocols
- Commercially available hardware solutions limited
- Various TDU Meter Systems

## Availability & Cost & Benefits

- Limited smart grid SLAs
- Hardware solution cost to entry are high
- Program benefits are long term
- Program benefits are fragmented.

## Evolving Markets

- Programs and customer acceptance are evolving
- “Utility” focused programs are less appealing to customers (Demand Response & Load Control)
- Conversion to “Customer” focused programs (Energy Management & Home Area Networks)

**There are still significant business risk with various unknowns, evolving markets and technologies , commercial availability as well as fragmented business value.**

# Smart Grid & Customer Benefits

*Technologies are rapidly evolving*

- *Smart Grid Deployments*
- *Energy Management Devices*

*Costs are reducing*

- *Market Opportunity has Increased*
- *New / Bigger Players – not a niche market anymore*

*Markets are merging*

- *Energy*
- *Security*
- *Entertainment*
- *Financial*

*Customers adoption of new technologies is increasing*

- *Broadband penetrations*
- *Mobile device penetrations*
- *Application markets*

*Customer needs are the same*

- *Must Save Money*
- *Must be Easy*
- *Must be Convenient*

**Opportunity has never been greater – but how will it all come together?**

# Questions?

*THANK YOU!*

*CONTACT INFORMATION*

TXU Energy

Patrick James

[patrick.james@txu.com](mailto:patrick.james@txu.com)

972-868-8425