

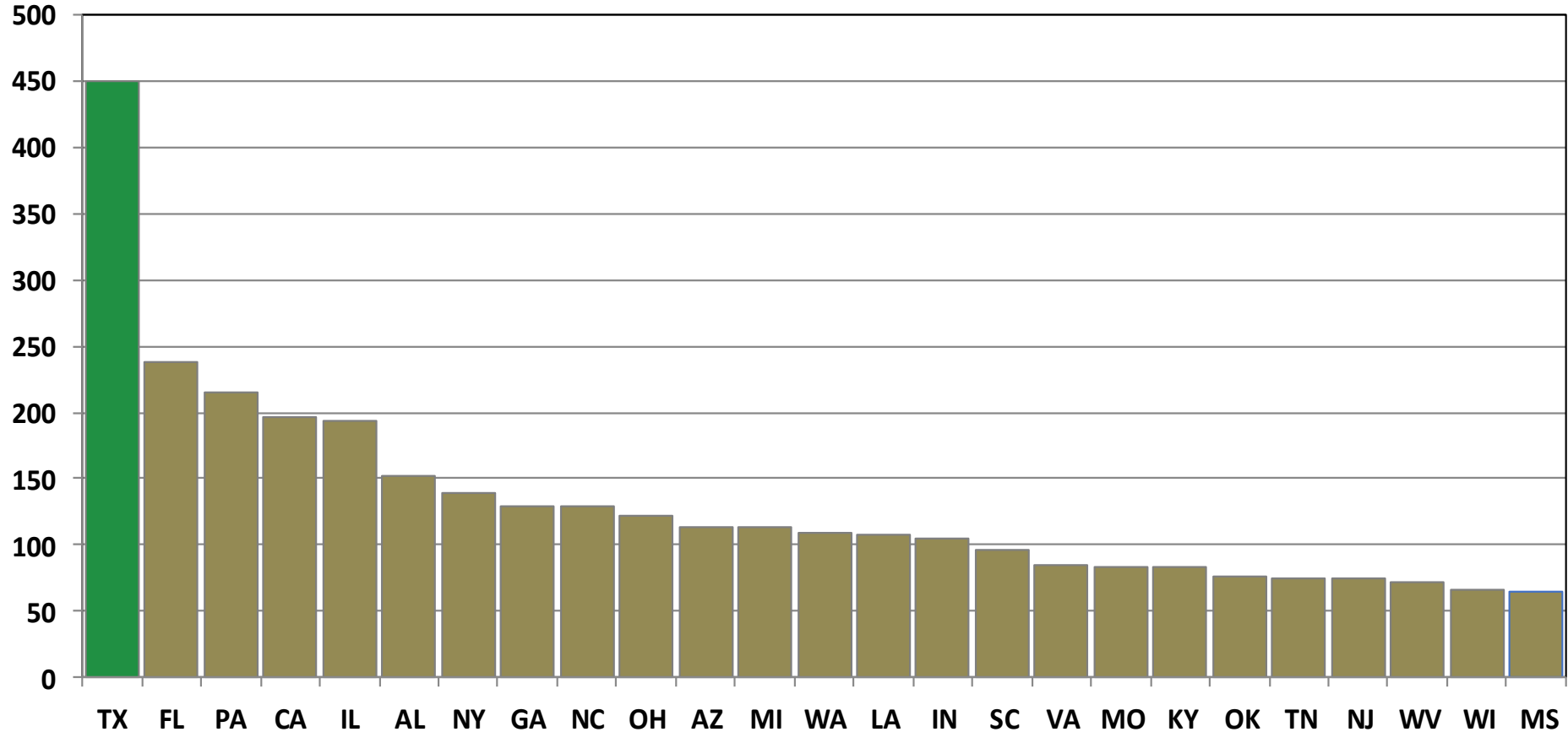
IoT Roundtable Breakfast

July 27, 2017

- **The Texas Energy Market**
- **About us – Vistra, Luminant and TXU Energy**
- **The Rise of Renewables**
- **The impact of (Smart Meter) technology**
- **What next ? What keeps us up?**

Texas is the largest electricity market in the US

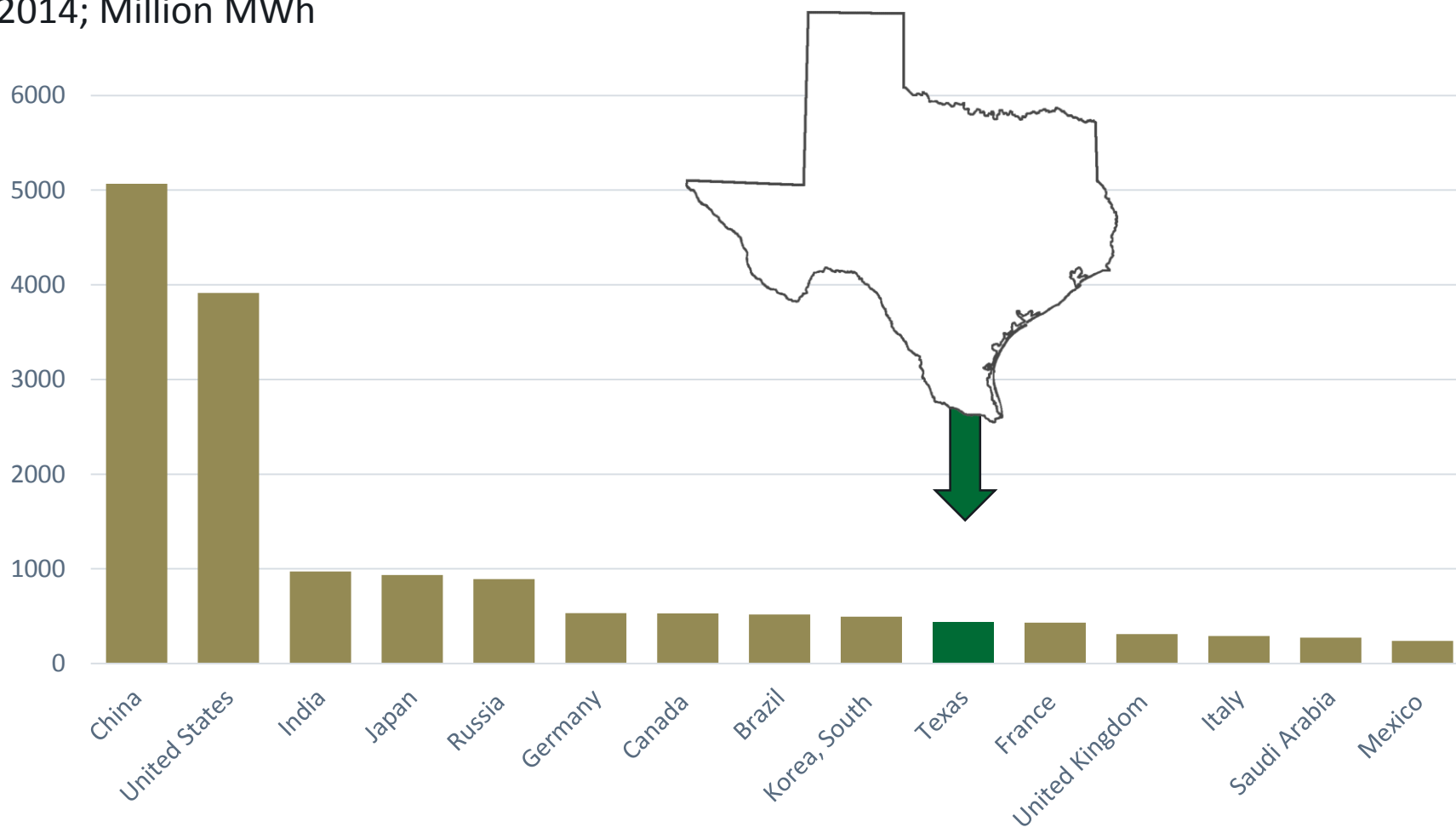
State electricity consumption
2015; TWh



Texas has by far the largest electric usage of any state – roughly equivalent to California, Oklahoma, Arkansas, Colorado, New Mexico, Massachusetts and Alaska combined

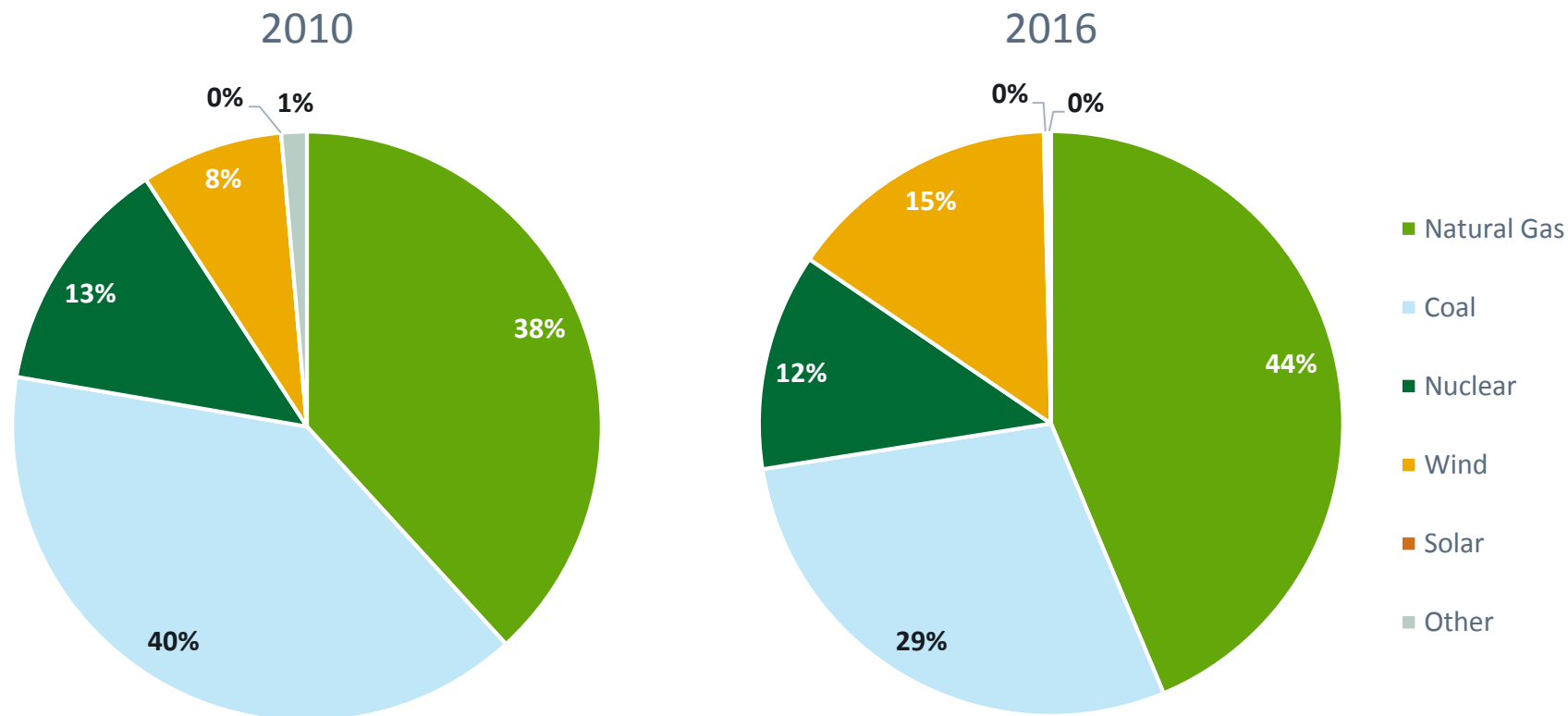
In fact, the 10th Largest Electricity Market Globally

Electricity consumption
2014; Million MWh



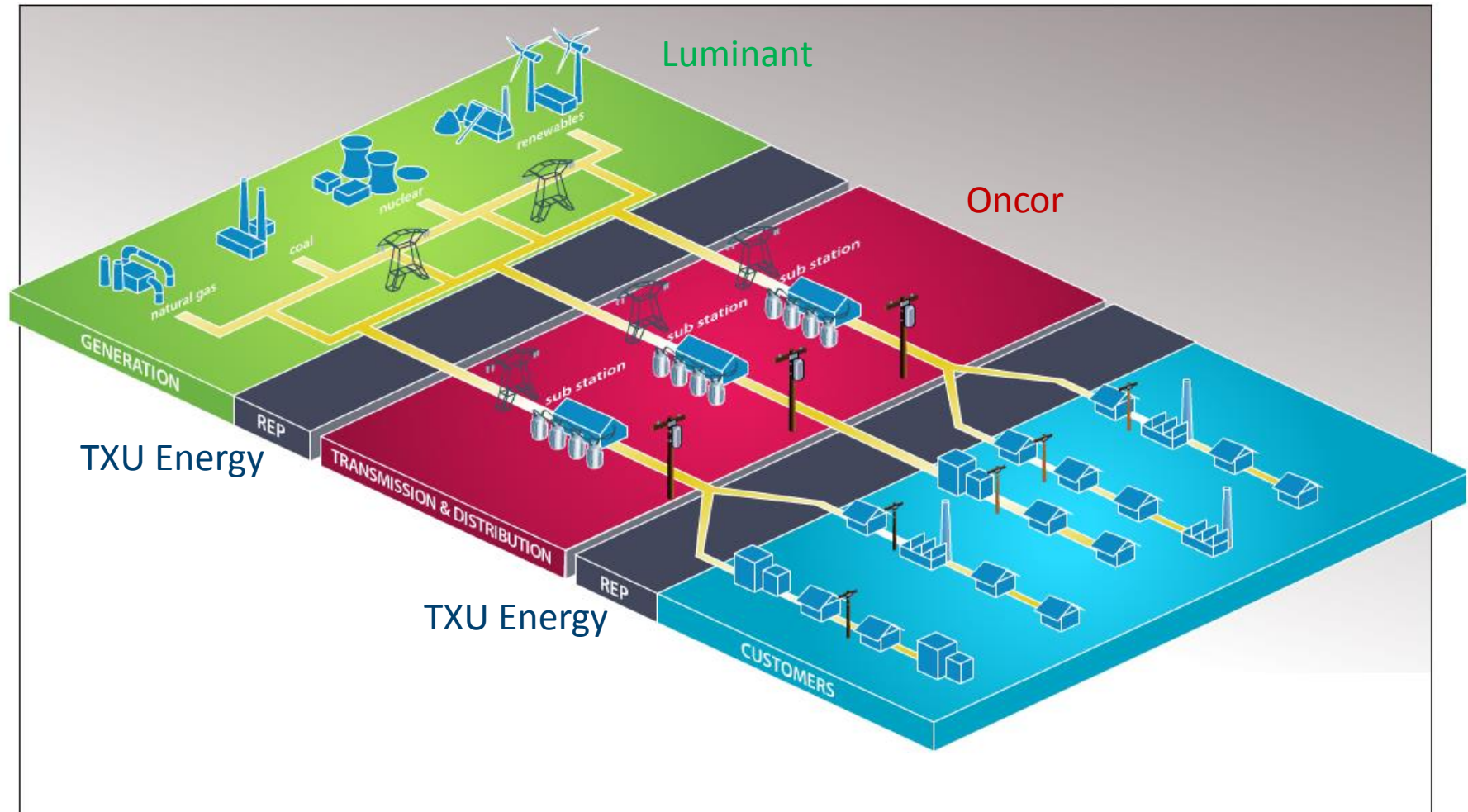
Texas' Generation Profile is Changing

Energy by Fuel Type (MWh)



In a 6 year period, the percentage of energy produced by wind generation has almost doubled and natural gas generation has increased as well while coal generation has declined 25% from its previous production level.

In Competitive Areas Of Texas, Different Companies Serve Each Part Of The Electric Value Chain



Generation and Retail are competitive while Transmission and Distribution segment remains fully regulated

With intense and growing competition in Retail



2002



2016



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Our company



A Powerful Combination



- Commodity Expertise
- Extensive Renewable Portfolio
- Largest Wholesale Trading Floor
- Market Insight



- Customer-centric
- Accurate Billing
- Innovative Products
- Efficiency Funds

Expertise and resources to meet the sophistication of any customer.



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The Rise of Renewables – A Confluence of Forces

AFFORDABILITY

As renewables become more affordable, pricing is less likely to fluctuate than oil and gas.

Commercial prices have fallen by:

58%
since 2012



16%
in the last year*

CLIMATE LEADERSHIP

Businesses are strengthening their commitment to sustainable best practices and environmental leadership.

of the
Fortune
100:

71

have set renewable targets or sustainability goals

22

have committed to going 100% renewable**

GROWTH

For the third year in a row, the majority of new energy generation has been from renewable resources.*



Corporates are increasingly adopting Renewables

Long-term price certainty
with savings and renewable
energy benefits.

Meet expectations of shareholders
and gain marketability of sustainability with
customers.

Long-term financial hedge
on energy prices for all or
a portion of electricity consumption.

Positively impact the environment
with sustainable choices that reduce
carbon footprint.



Texas is a renewables leader



24% U.S. wind energy
is generated in Texas
18,500 MW Total Capacity



780 installed in 2016
1,215 MW Total Capacity
MW Solar



*Solar Energy Industries Association

Vistra is a large integrated Renewables Player in Texas



Large purchaser
of Texas wind-generated
electricity.

~400^{MW*}
Current
Capacity

One of the largest single
utility-scale solar projects
in Texas.

180^{MW}
Total Capacity

718^K
Solar
Panels



There are several ways to go Renewable

		Shared Renewable Resources	Power Purchase Agreement (PPA)	Self-Owned Project
<i>Contract Complexity</i>				
BENEFITS	Long-term price certainty	✓	✓	✓
	Renewable Energy Credits	✓	✓	✓
	No upfront capital cost	✓	✓	
	No operation or maintenance costs	✓	✓	
	Ability to hedge all non-commodity costs	✓		
	Customizable term length	✓		
	Simple to participate	✓		

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iOT provides innovative product opportunities

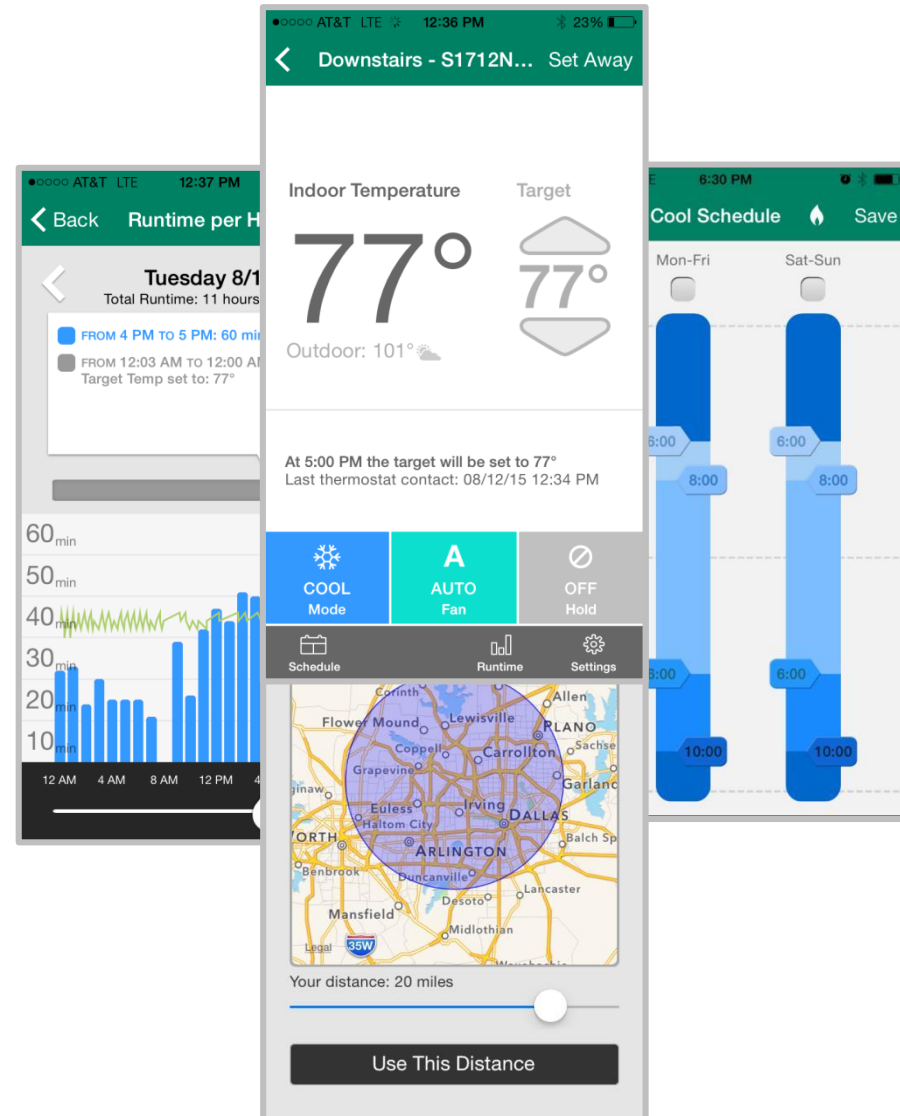
– TXU iThermostat example



Convenience.

Control.

Savings.



Technology advancements drive continuous innovation – Amazon Alexa example



Search 

MyAccount 

For Home

For Business

Savings & Solutions

Help Center

We've Gone Hands-Free.

Get an Amazon Echo Dot on select plans and manage your account in style.*

YES, PLEASE



VIEW PLANS FOR HOME



VIEW PLANS FOR BUSINESS



Energy to go.

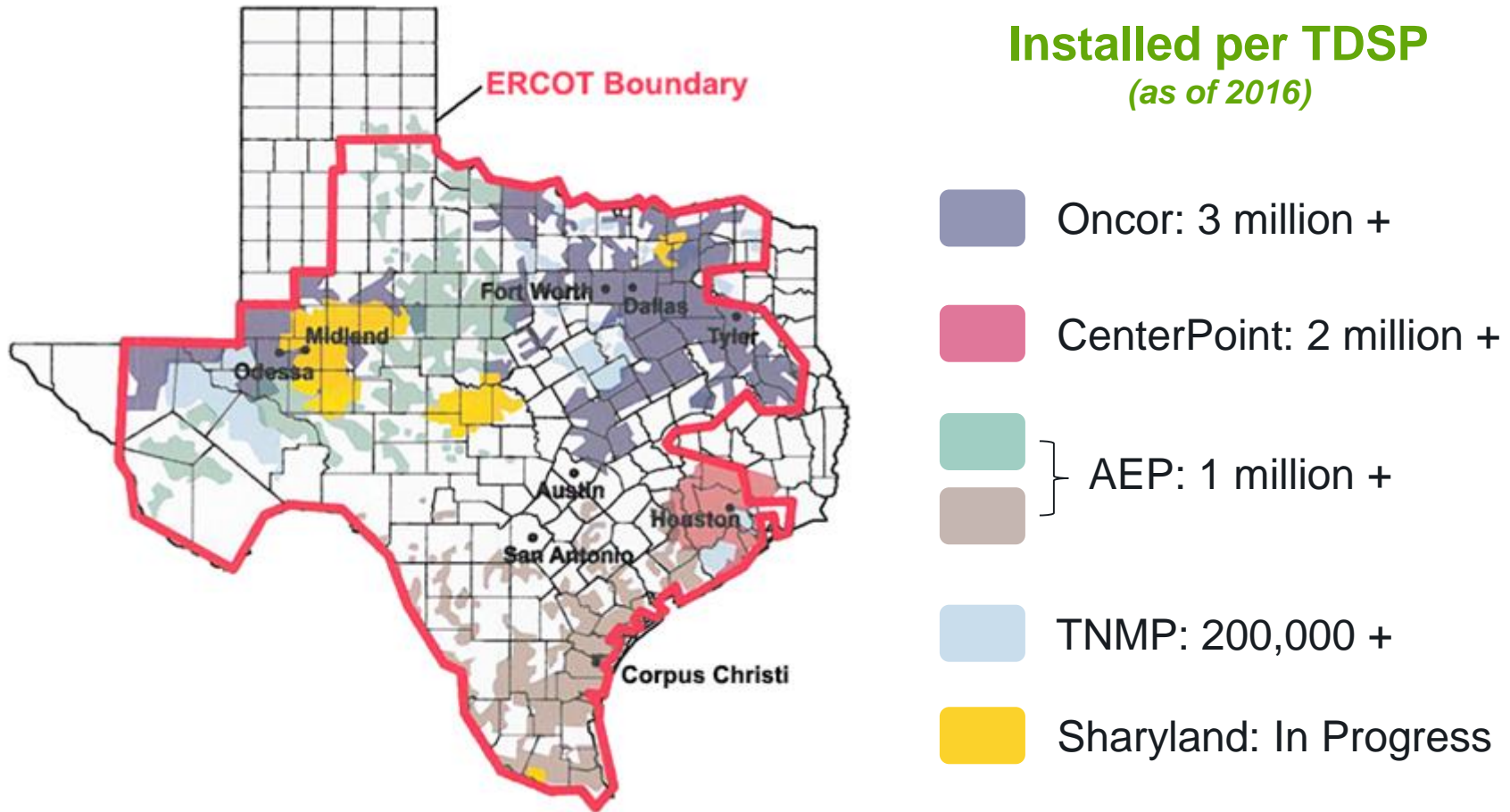


Know more. Spend



Season Pass

Smart Meters are ubiquitous in Texas



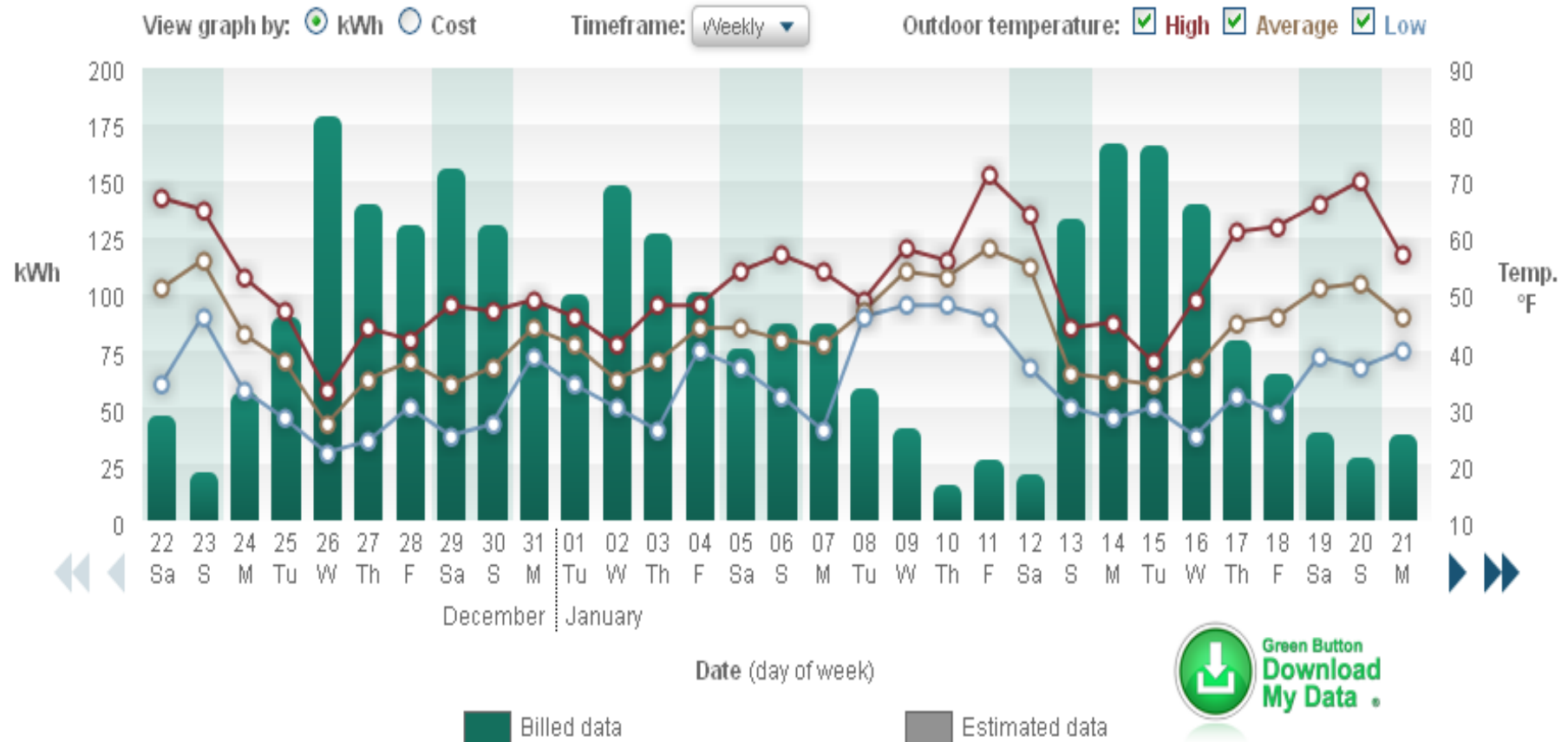
Smart Meters have had a significant impact to the business

- Usage is recorded in 15 minute intervals (96 intervals per 24 hrs)
- Remote capabilities
- Producing a treasure trove of data that enable unique customer & energy management insights



MyEnergy Dashboard Example

USAGE GRAPH - MONTH VIEW (DEC 22, 2012 - JAN 21, 2013)



Budget Alerts and Forecasts

Budget Alert

Your Budget Alert for ESI ID 10443720009654082.

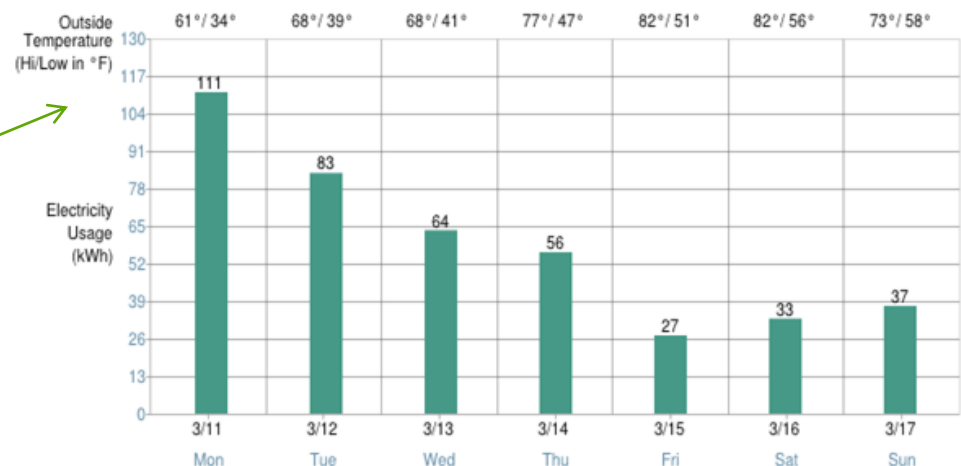
Based on your recent electricity usage, your forecasted costs for the billing cycle ending 01/22/2013 are expected to exceed your budget threshold.

Cost Summary*		Your Budget Threshold
Billing Cycle Ending 01/22/2013		
Costs Accrued to Date (12/19 - 12/19)	\$6	
Forecasted for Billing Cycle Ending 01/22	\$252 - \$309	\$300

Threshold Alert

Weekly Electricity
Usage Alert

Usage for Week of March 11 - 17, 2013



A dark blue background with a subtle pattern of white stars and a bright, glowing crescent moon in the upper right corner. The text "TXU Energy" is written in a large, white, serif font, and "Free Nights" is written below it in a slightly smaller, white, serif font.

TXU Energy
Free Nights

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Trends that could impact future

- Transition to distributed grid
- Development of microgrids
- Increase in intermittent resources
- Entry of unconventional competitors
- Continued low wholesale prices
- Technological developments
- Other?????

