



# ERCOT GCPA Spring Conference

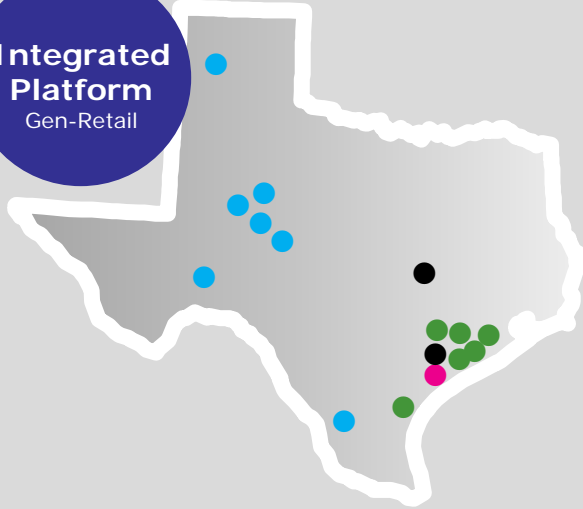
Mauricio Gutierrez  
President & CEO – NRG Energy

April 19, 2017



# NRG in ERCOT – A Balanced Portfolio

**Integrated Platform**  
Gen-Retail



## Largest Retailer

~**2.1 Million** Mass Retail Customers Served  
**Reliant** – Leading Retail Brand  
**35 TWh** Mass Load Served  
**18 TWh** C&I Load Served



## Second Largest Generator

~**10,100 MW** total thermal generation  
**700 MW** wind generation  
~**1,500 MW** under development wind and solar



## Significant Presence

Close to **3,000** employees  
~**\$1.5B** capital invested in past 3 years

# Texas Energy Policy

## Vast resources

Diverse natural resources (gas, oil, wind, solar)

## Embrace competition

A pro-business government and regulatory environment

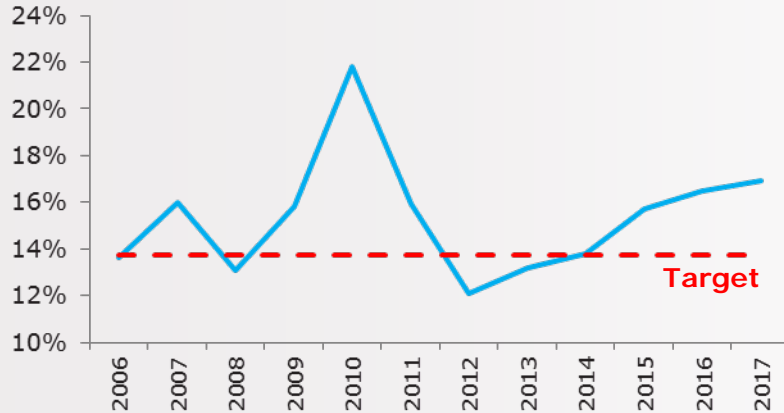
## Transmission focused

Policy to bring vast resources to market

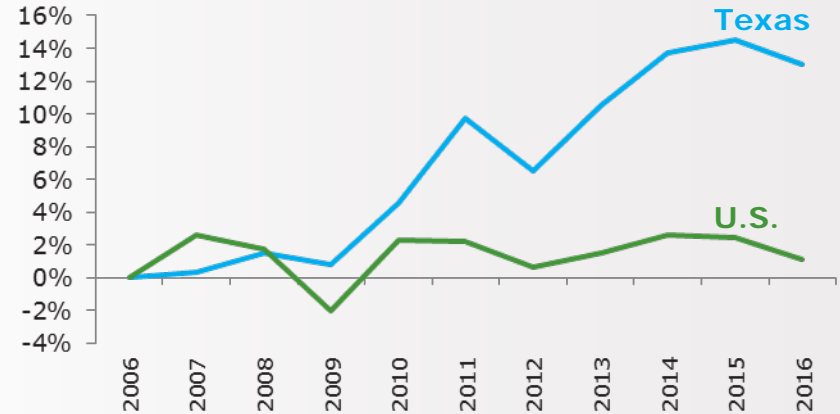
## Thriving economy

Strong population and electric demand growth

### Planning Reserve Margins<sup>1</sup>



### Cumulative Demand growth<sup>2</sup>



# Current Market Concerns

## 1 Price Formation

## 2 Renewables

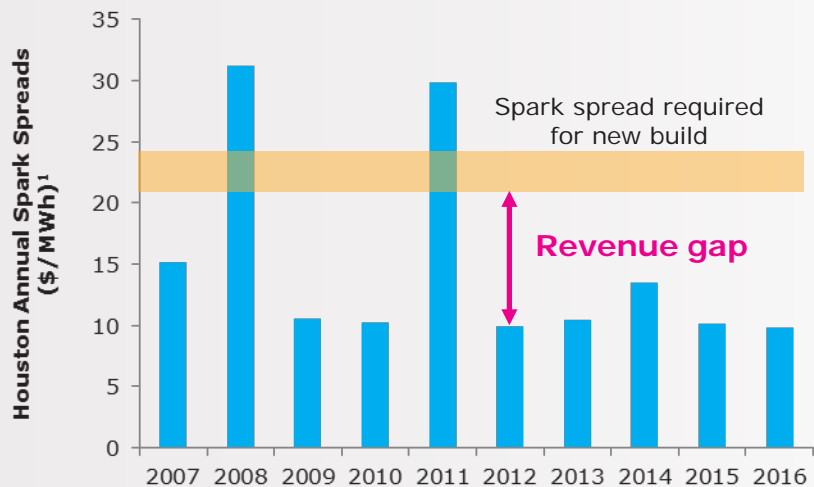
## 3 Transmission



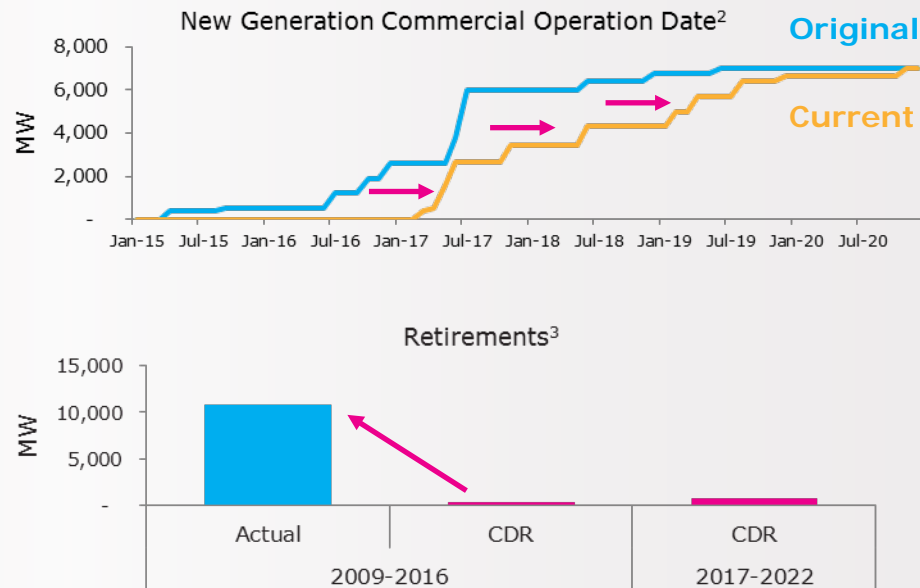
- Annual transmission spend has increased 4x since 2002
- Inherent preference for transmission over market solutions
- Consumers bear the burden of these increasing costs

# 1 Price Formation

Market prices do not incentivize new dispatchable generation, now and haven't for the past five years...



...delaying new projects and putting existing generation at risk



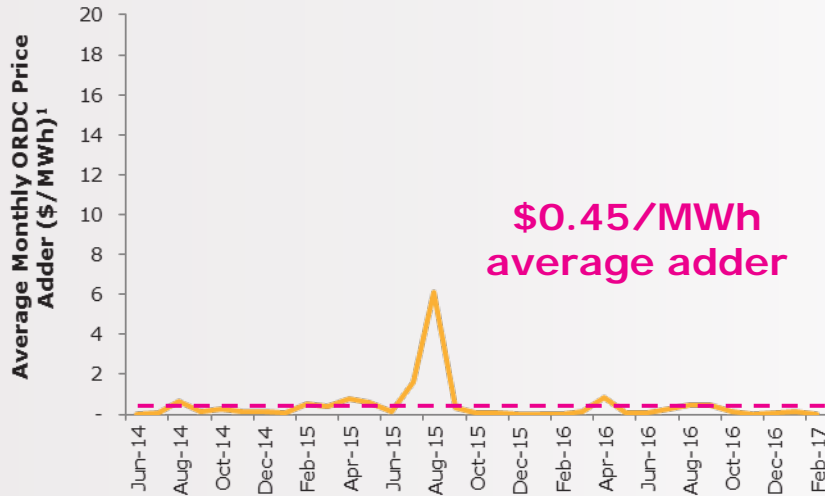
Prices insufficient to attract or maintain dispatchable generation

<sup>1</sup> Source: ERCOT, NRG estimates; Spark spreads based on actual real time on-peak clears vs HSC GDA. Spark spread needed for new build based on the revenue requirement for a 6.8 HR NGCC at \$800/kW. <sup>2</sup> Source: ERCOT GIS reports; Graph includes only those assets that are listed as new thermal generation in the Dec 2016 CDR. <sup>3</sup> Source: Energy Velocity, ERCOT CDR's; CDR retirements represent retirements identified in prior and current CDR's.

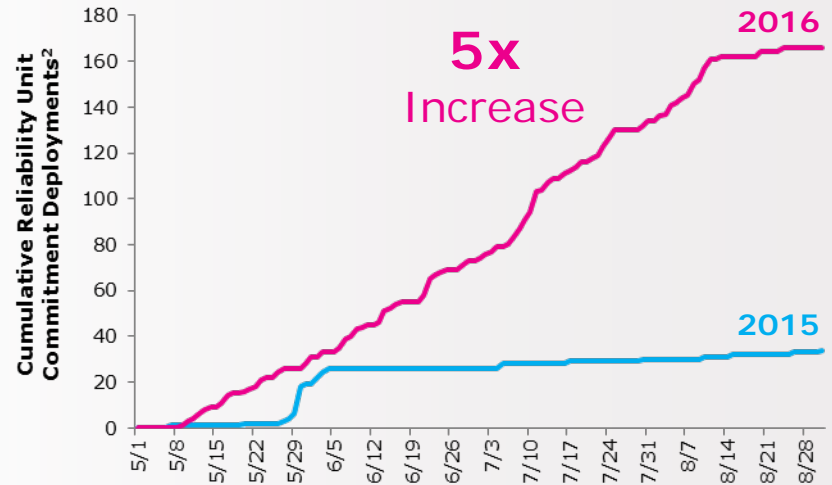
## 1

# Price Formation – Additional Concerns

ORDC has not provided the right price signals...



...resulting in significant out-of-market actions by ERCOT

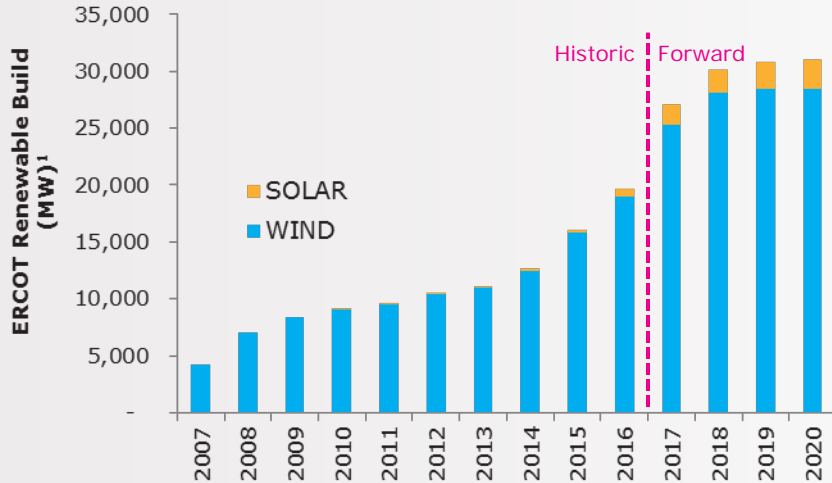


Improvements in price formation are needed

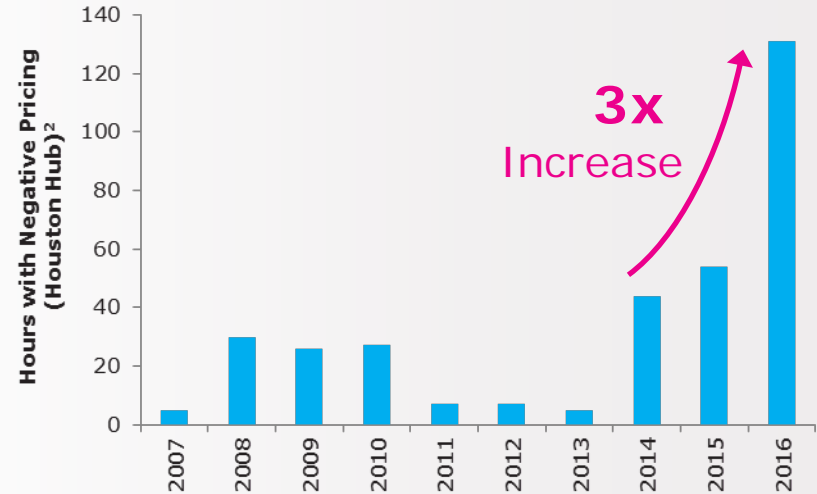
## 2

## Renewables

Wind is growing rapidly and will make up  
~30% of total capacity by 2020...

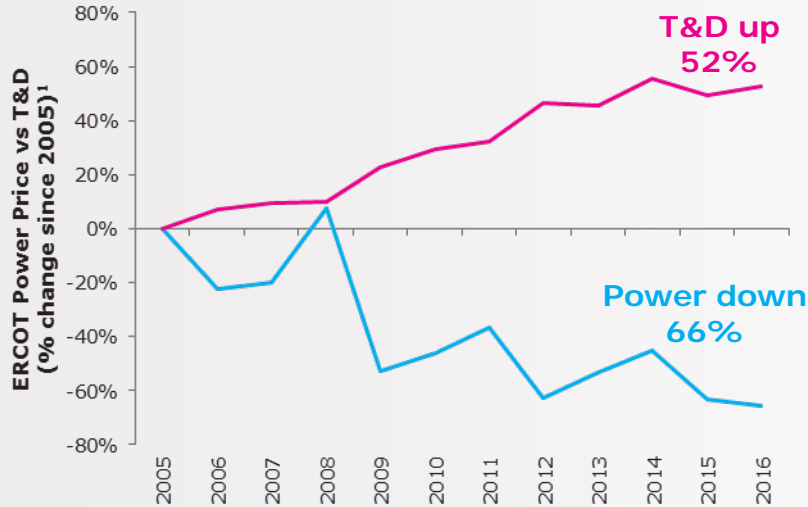


...increasing significantly the frequency of  
negative prices



Abundant wind is causing substantial disruption to  
marginal cost price formation...and more is coming

# Transmission



- Electric policy has been centered around a robust transmission system to bring ERCOT's vast resources to the market
- Transmission costs are socialized across consumers
- Transmission and distribution charges to residential consumers up over 50% since 2005
- More efficient, market-based solutions should be considered beyond transmission

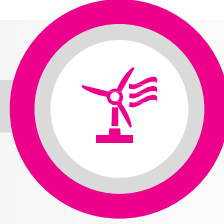
Increasing transmission costs keep consumers from realizing the value of competition in reducing their electricity bill



# Recommendations



## Price Formation



## Renewables



## Transmission

1. Improve ORDC price signal and implement locational component
2. Include marginal losses in ERCOT prices
3. Minimize the use of out-of-market actions
4. Address mitigation rules for RMR units
5. Balance transmission investment with market-based solutions

Changes are needed today to ensure  
a sustainable market structure in the future