

Energy Market Economics & Texas Regulatory Framework

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The Public Utility Commission of Texas

- **PURA 39 – established a fully competitive electric power industry**
 - Authority to oversee electric market structure
 - Adopts rules addressing market
 - Appellate authority over ERCOT protocols adopted by ERCOT board
- **Complete authority over ERCOT finances, budget and operations with oversight by Texas Legislature**
 - Approves ERCOT Bylaws
- **16-member ERCOT Board composition is established by law**
 - Currently under review by the Texas State Legislature



ERCOT Corporate Governance

(Electric Reliability Council of Texas)

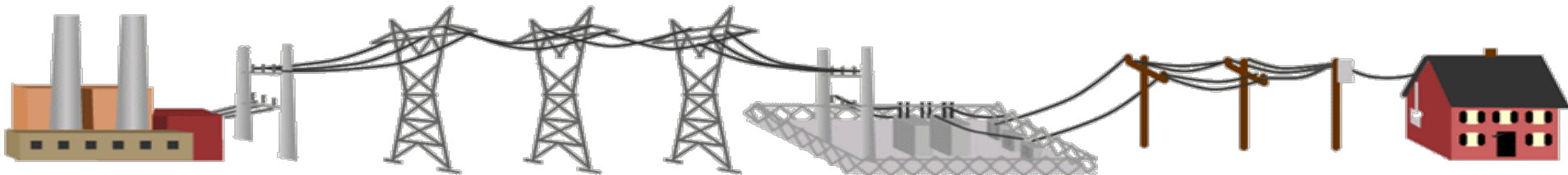
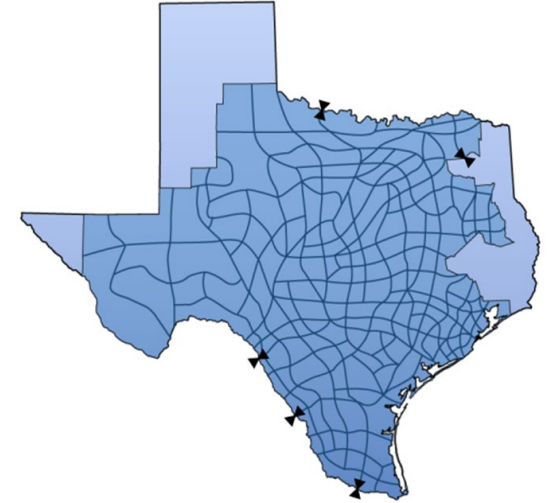
- Founded in 1970
- TX Legislature enacted laws governing all ERCOT activities
 - See PURA Section 39.151
- Tx non-profit corporation with members from seven market segments:
 - Consumers (Commercial, industrial, residential)
 - Cooperatives
 - Independent Generators
 - Independent Retail Electric Providers
 - Investor-Owned Utilities
 - Municipals



ERCOT Responsibilities

ERCOT's Primary Responsibility is Reliability

- Match generation with demand
 - Settlements
 - Retail switching
 - Transmission access



Executes competitive markets for reliability services



ERCOT Mechanics

Electric Wholesale Market

Austin Energy's Owned
and Contracted Assets

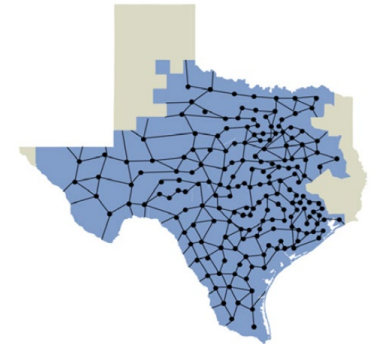


Austin Energy delivers generation to
ERCOT's Wholesale Market

- 430 MW Nuclear
- 600 MW Coal
- 1,161 MW Natural Gas
- 108 MW Biomass
- 1,795 MW Wind
- 1,216 MW Solar *



** includes signed contracts not yet online*



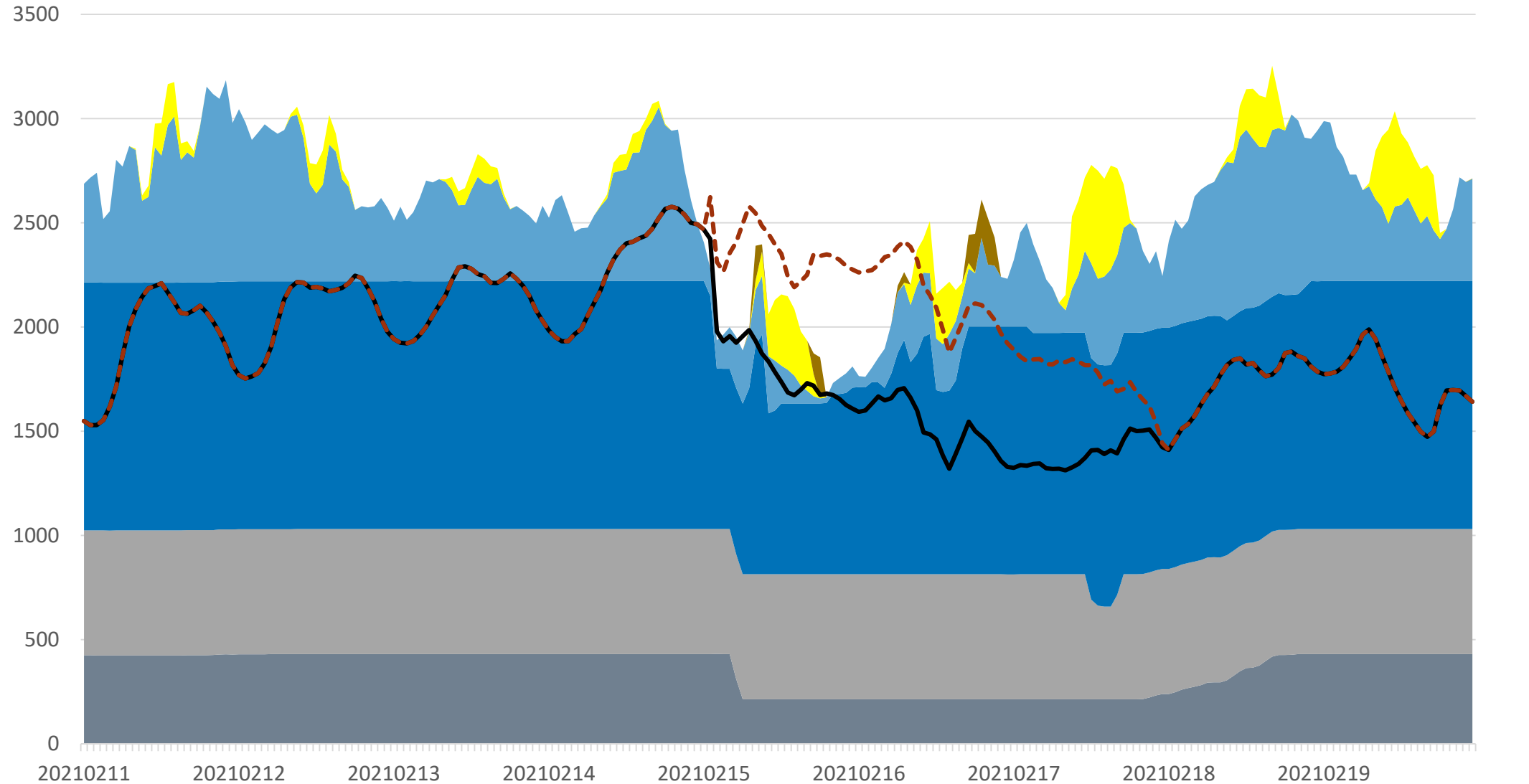
How Does Austin Energy (AE) Participate?

- AE does not self supply its generation to its customers
- AE's participation in the ERCOT market is not optional
- AE's generation competes in ERCOT's deregulated wholesale market
- AE is a Municipal Market Participant / Non-Opt-In Entity
- AE is a Load Serving Entity – purchases customer's power from grid at city's load zone
 - ***ERCOT charges AE for all power we pull from grid / market at AE's load zone price***
- AE is a Generator – sells electric resources to grid at locations throughout the state
 - ***ERCOT pays AE for all power we offer grid / market at prices at each resource***

How was Austin Energy's portfolio prepared for 2021's February Winter Event?



Supply (Capacity) by Fuel Source vs Austin Energy Load during February 2021 Winter Event



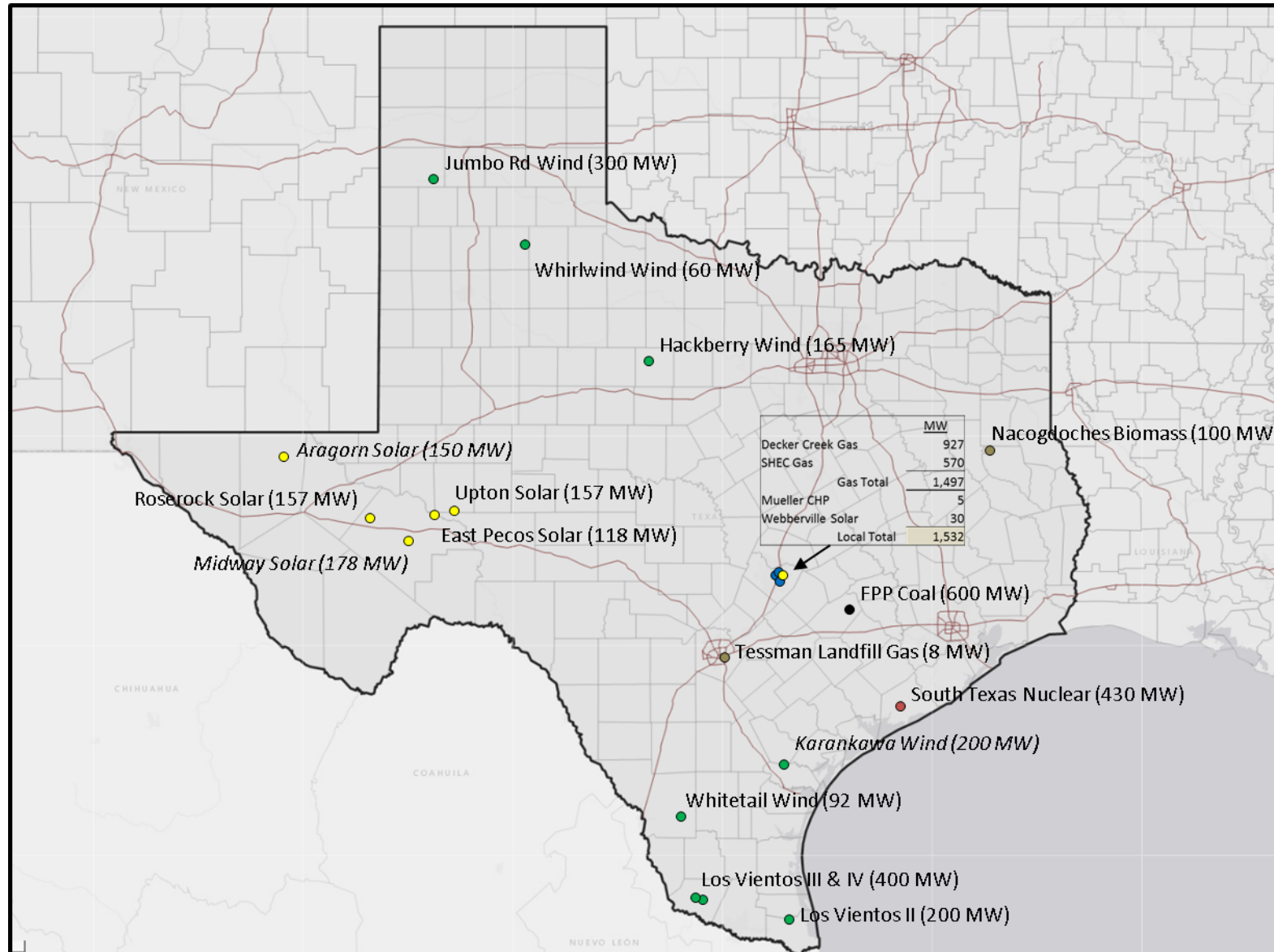
Austin Energy's been hedging since 2003

- AE has an internal Risk Oversight Committee which has been in place for 18 years.
 - Meets monthly
 - Daily and monthly reports
- AE has a robust competitive RFP process selecting strategic assets for customer's portfolio.
 - Internal expertise originating projects, not outsourced
 - Comprehensive stochastic and fundamental modeling combined with extensive analytics
 - Comprehensive approval process within utility and city
- AE diversifies the portfolio
 - Renewable and conventional generation
 - Renewable projects in many parts of the state (different generation profiles, minimize congestion risk)
 - Projects steadily layered in overtime in small chunks allows for dollar cost averaging
- AE actively manages its portfolio, hedging program in place for 18 years
 - Sophisticated risk management tools and long-standing policies employed in forward, day ahead and real time markets to mitigate price risk
 - Power Supply Adjustment metrics reviewed monthly by Oversight Committee measures portfolio performance



Public power hedging has strict rules around risk management – no speculation

Austin Energy is diversified



Power Supply Adjustment (PSA) Drivers

PSA is a Pass Thru

Major Elements Impacting PSA

Cost Drivers

Load Zone Costs
Austin Demand

Owned Assets
Austin Supply

Contracted Assets
Austin Supply

Over /
Under
Balance

Customer
Growth

Weather

Generator
Availability

Market
Price

Intermittency

Location

PSA Rate to
Market Price
Spread

Natural Gas
Price

Transmission
Congestion

Forward
Price Curve

Weather

Market
Price

Contract
Price



Questions?



Briefing on Energy Markets and Customer Bills

Adam McInroy

Finance Director for Risk and Settlements



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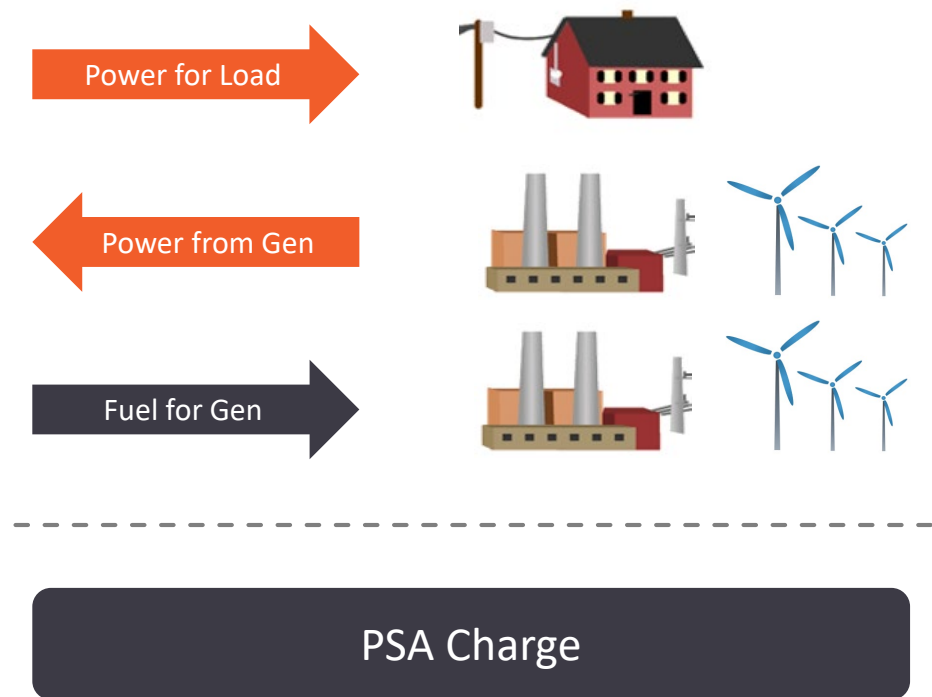
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Energy Markets and the Power Supply Adjustment

Energy market costs and revenues are passed to customers on a dollar-for-dollar basis, through the power supply adjustment (PSA) charge on customer bills.

PSA cash flows encompass:

- Purchases for customer usage
- Sales from generation
- Purchases for fuel and renewable energy
- Risk management of power costs
- GreenChoice collections
- Value of Solar payments to customers



Daily Power Markets, Annual PSA Rates

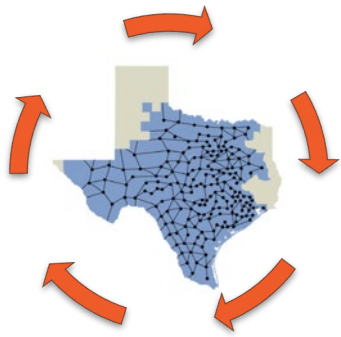
Energy markets are extremely dynamic

- Hourly price movement, daily settlement
- Multiple market environments
- Many commodities and locations
- Dependence on uncertain weather

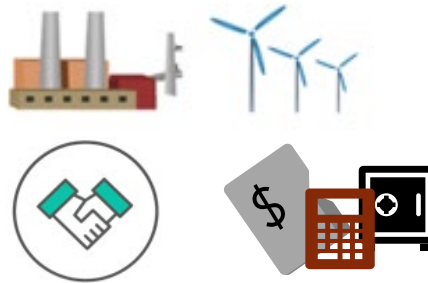
Austin Energy mitigates this for customers

- Diversified physical resources
- Risk management activities
- Liquidity and financial management
- Analysis and planning

Dynamic Power Markets



Austin Energy Activities



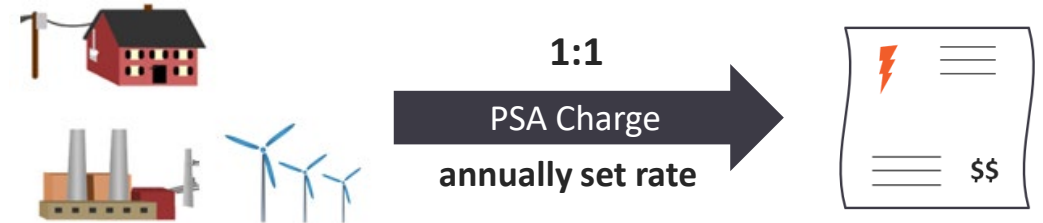
Stable, Annual Rate



PSA Billing

PSA costs are collected from customers as a pass-through charge on customer bills.

- Recovers energy market costs
 - Across the system
 - Over twelve month rate year
- Dollar-for-dollar pass through
- No general fund transfer on PSA
- Roughly 31% of residential customer bills¹



⁽¹⁾ City of Austin Residential Non-CAP Customer using 860 KWh (2019 Typical Monthly Consumption)¹⁵

PSA Rate Adjustment Process

The PSA rate for customer bills is generally adjusted once per year, during the annual budget cycle.

- Daily energy market revenue changes do not directly impact customer bills
- Rate returns any PSA balance built up from daily activity
- Off-cycle adjustment if needed, for new twelve-month rate

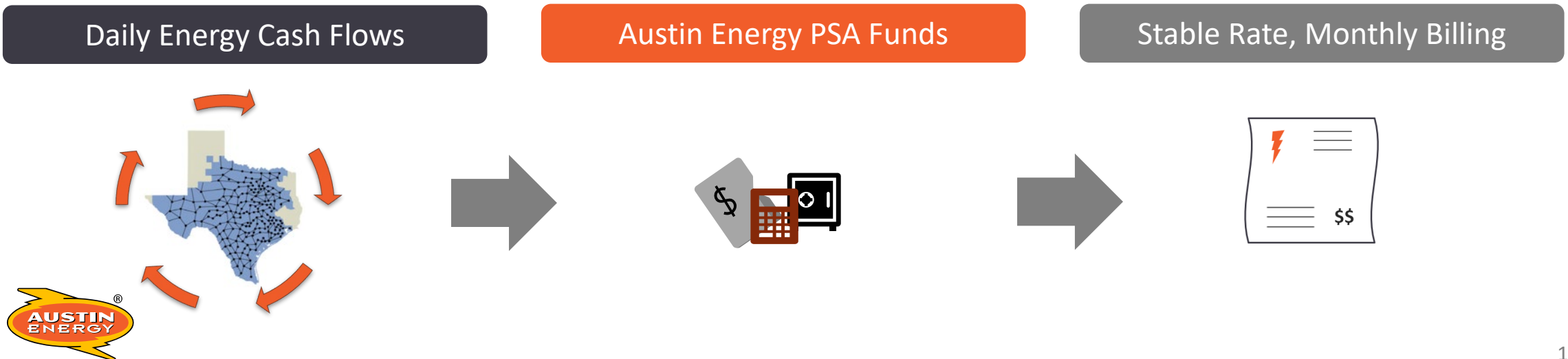


PSA Funds and Liquidity

Austin Energy's cash and liquidity balances help customers experience measured changes in their power supply costs.

Across the Texas utility industry, these balances came to be of concern for bondholders and ratings agencies after the winter event.

Austin Energy's liquidity and finances remained healthy throughout the winter event.



Bond Market Communication

To meet its obligations to make bondholders aware of significant events and risks, Austin Energy and City of Austin Treasury made a financial disclosure to the bond market on March 8th.

In the disclosure, Austin Energy and Treasury communicated that, during the event:

- Cash liquidity remained strong
- Austin Energy supplied generation in excess of load to ERCOT
- Event energy revenue may fully offset costs
- Settlements are not yet complete
- Many uncertainties remain



PSA Discussion Summary

Austin Energy manages dynamic daily energy markets to provide stable, affordable, annually set PSA rates to customers.

PSA charges are passed through to customers with no GFT.

By using its own liquidity on customers' behalf, the utility must occasionally give guidance to bond markets on its financial health.

Austin Energy is financially healthy after the winter event, and looks forward to continuing to offer stable PSA rates for our customers going forward.



Questions?



Load Shed

Tom Pierpoint

Vice President Electric System Engineering & Technical Services



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Load Shed

- Load Shed is typically accomplished through Rotating Outages

- Automated program used on those feeders available for load shed events
 - Feeder may not be available due to critical loads and frequency protection
 - Feeder originates at substation and serves thousands of customers
 - Each feeder can be up to several miles in length and serve many communities
- Extreme ERCOT-mandated reductions can consume AE Load Shed capabilities and prevent rotation
- After Actions:
 - Looking into potential to power critical loads while others are cycled -- could include segmenting, sectionalizing, and/or reconfiguring feeders, where feasible.
 - Automated Metering solutions will be explored but technical risks and limitations exist
 - Leverage resources from EPRI (Electrical Power Research Institute)

- Other types of Load Shed also exist

- Mostly comprised of larger Commercial and Industrial (C&I) customers that cannot be cycled
- Load Shed is not automated; Close coordination is required to ensure safety
- After Actions:
 - Work with ERCOT and C&I customers to develop a more automated program



Questions?



Thank you!



**Customer Driven.
Community Focused.SM**

