Item 3

# Resource Generation Plan Overview

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# Austin Energy and the ERCOT Market

## Participation is Mandatory

Generation Supply → ERCOT Market → Serve Load → Customer

Austin Energy is required to sell energy generated to the ERCOT wholesale market.

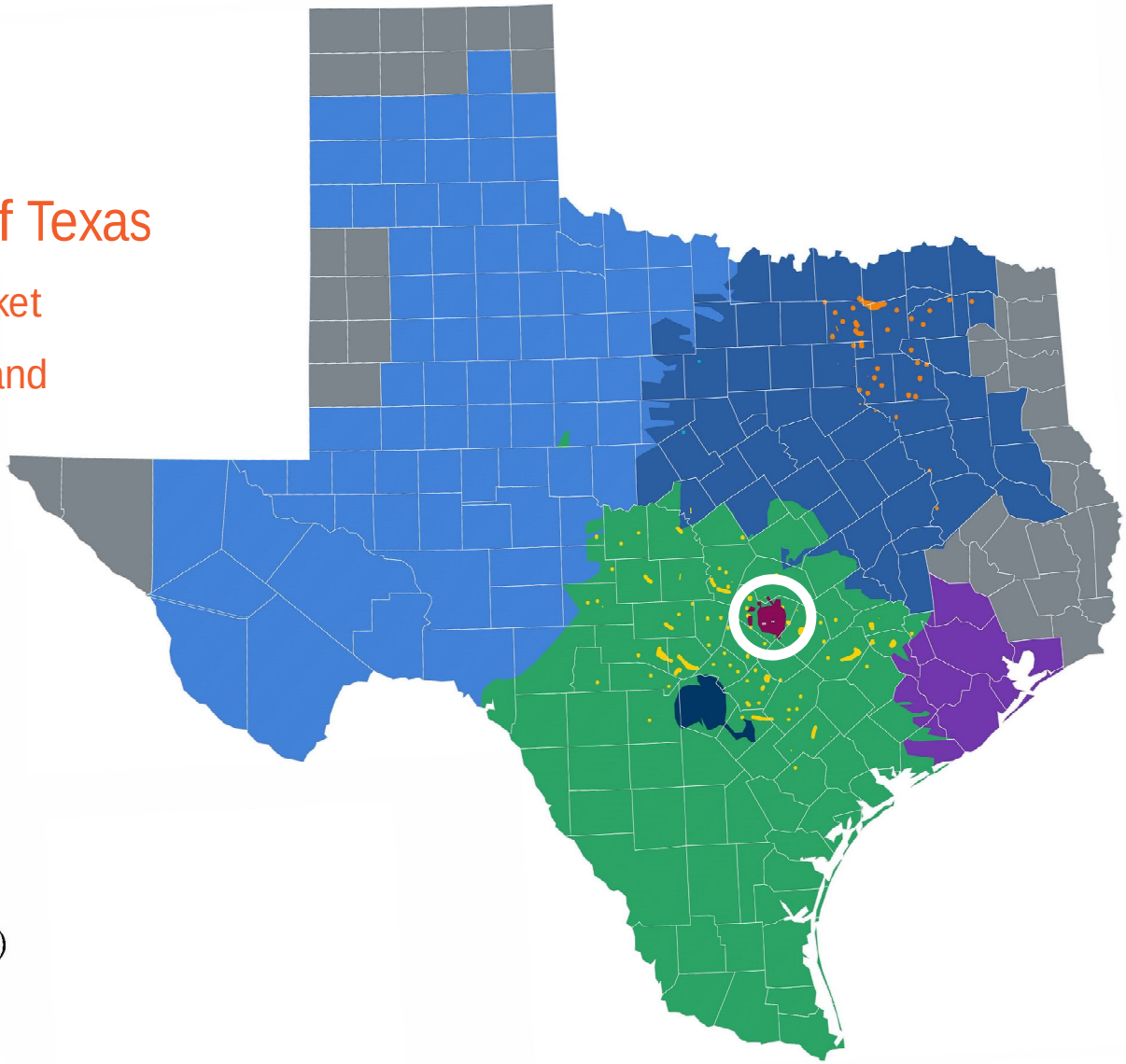
Austin Energy is required to purchase energy at its load-zone price from ERCOT market to serve customers.

**Austin Energy Balances Dollars – Not Energy**

# What is ERCOT?

## Electric Reliability Council of Texas

- Manages the Texas Wholesale Market
- Balance Electrical Supply and Demand



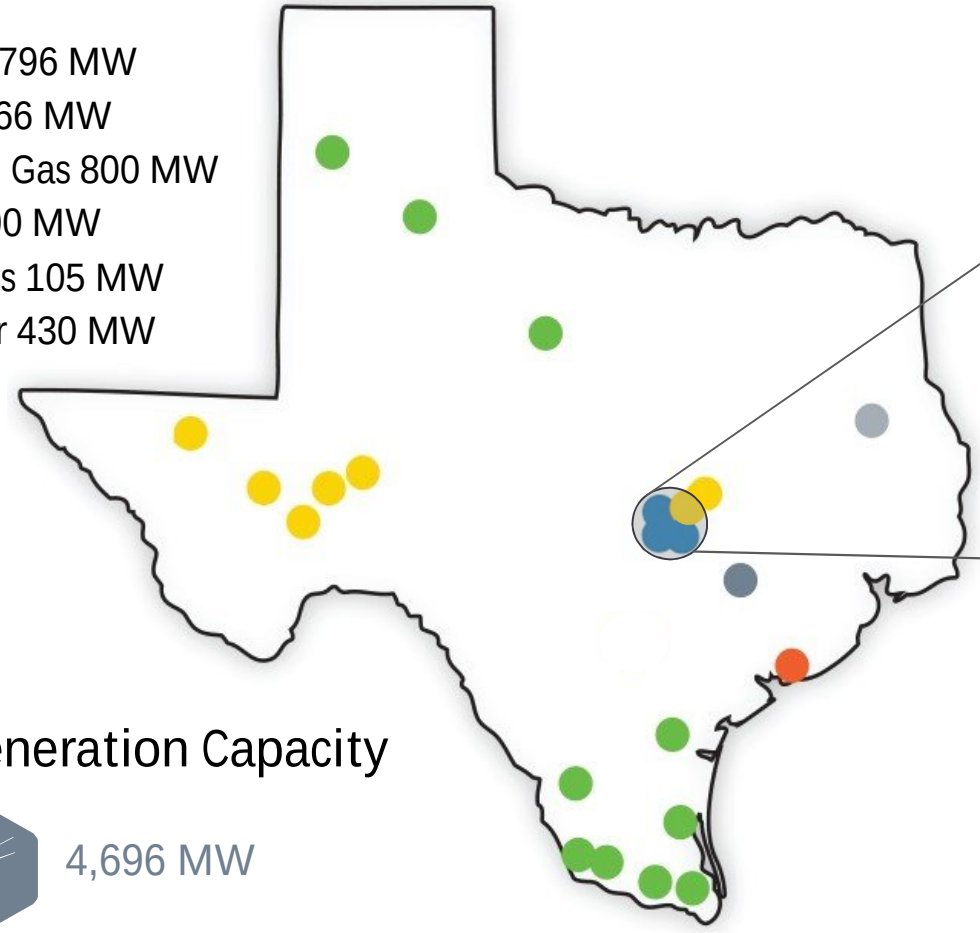
### ERCOT Load Zones

- North
- West
- South
- Houston
- Austin Energy (AEN)
- CPS Energy (CPS)
- Lower Colorado River Authority (LCRA)
- Rayburn Electric Cooperative (RAYB)

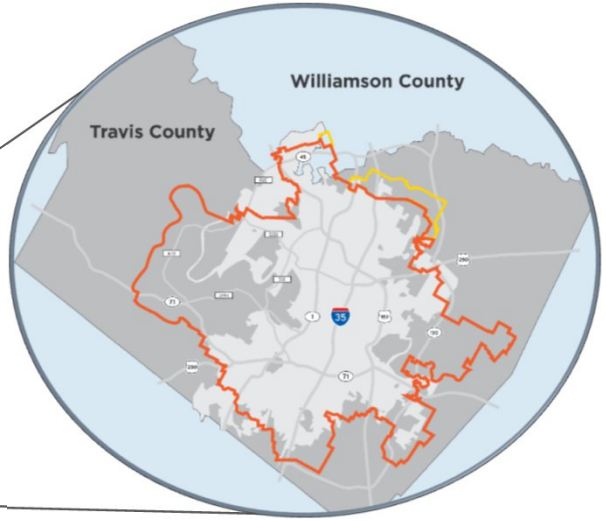
# Austin Energy's Supply and Demand

## Sell Generation to ERCOT Market

- Wind 1796 MW
- Solar 966 MW
- Natural Gas 800 MW
- Coal 600 MW
- Biomass 105 MW
- Nuclear 430 MW



## Buy Electricity from ERCOT Market to serve Customers




Austin Energy Load Zone

## Total Generation Capacity

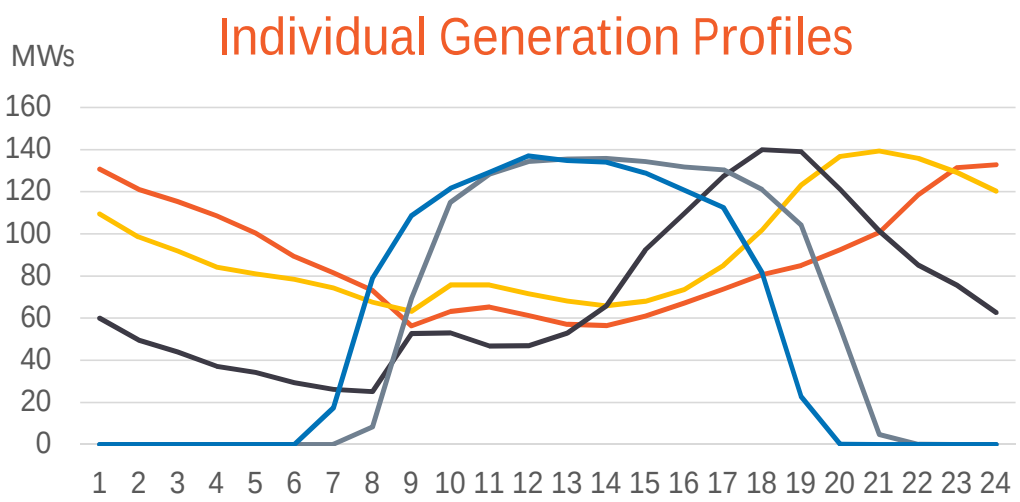
4,696 MW

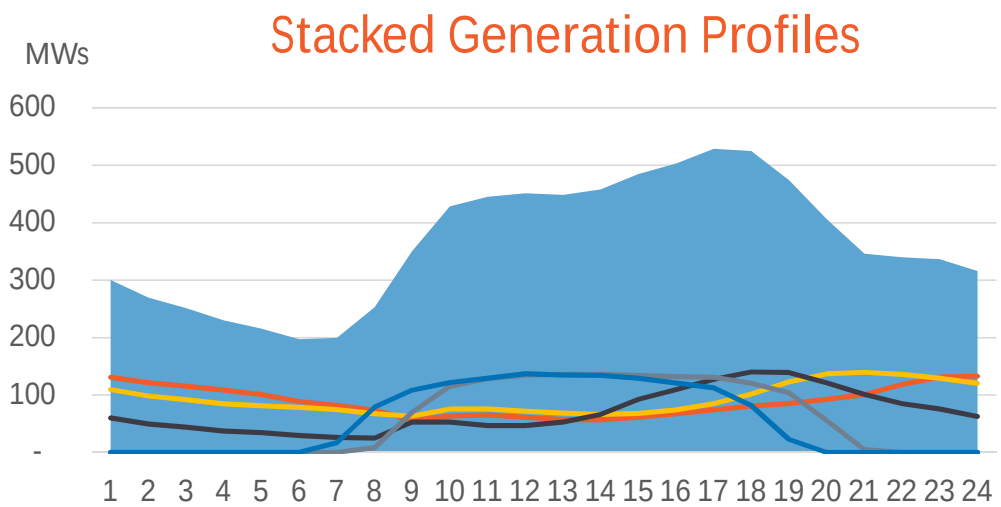
## All-Time Peak Demand

3,004 MW – Aug. 2023

2,613 MW – Dec. 2022

# Renewable Generation Profiles

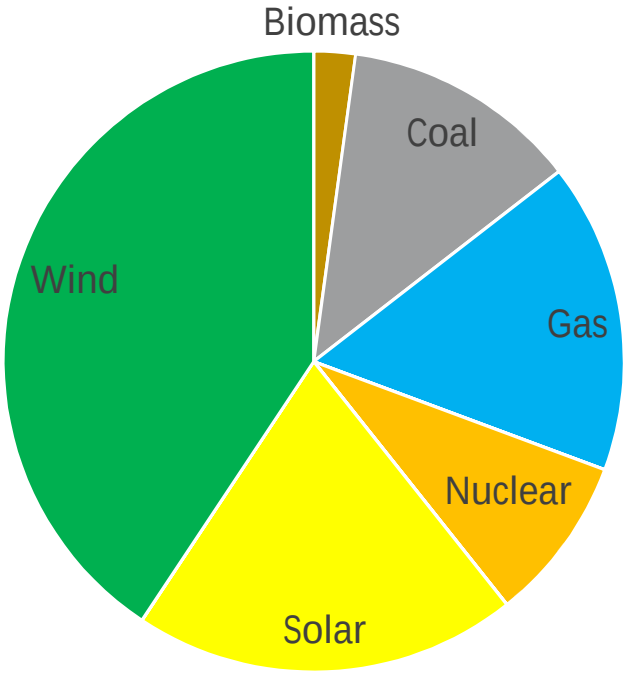


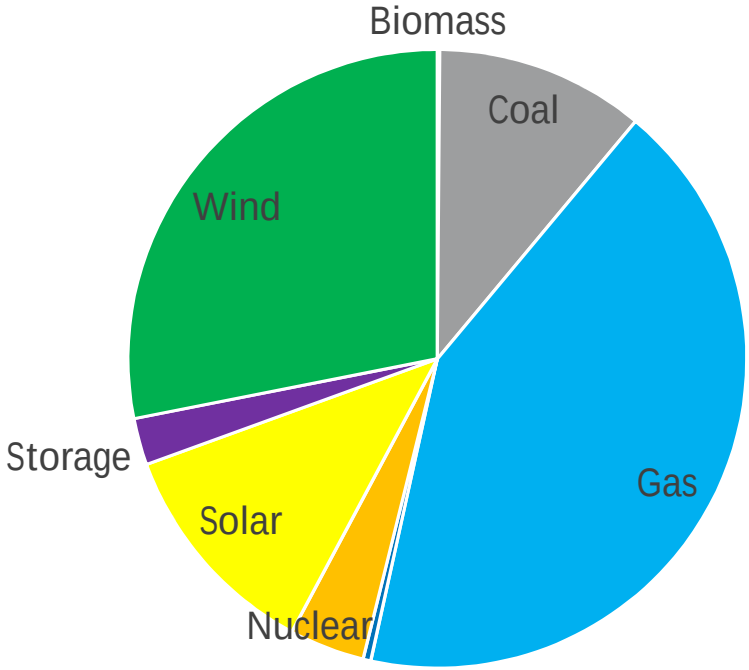

West Wind
South Wind
Coastal Wind
West Solar
Central Solar

# Austin Energy vs ERCOT Generation Capacity

## Austin Energy's Generation Mix



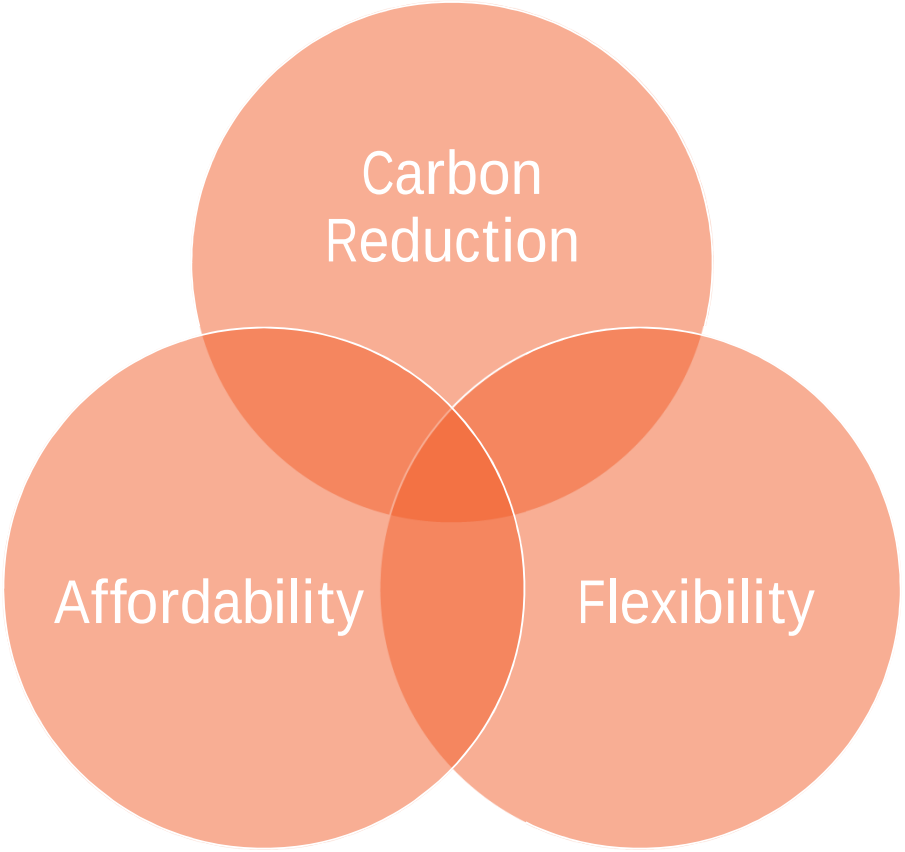

## Statewide ERCOT Generation Mix



# Resource, Generation & Climate Protection Plan to 2030

The **2030 Plan** commits **Austin Energy** to continue safely delivering clean, affordable and reliable energy sufficient to meet customer demands while pursuing the City of Austin's climate protection and sustainability goals.

# Resource Planning Objectives




The 2030 Plan is intended to be flexible and dynamic in order to respond to changing circumstances, including customer electric load, economic conditions, energy prices and technological development, while strictly committing to firm carbon reductions.

Austin Energy Resource, Generation and Climate Protection Plan to 2030

# The 2030 Plan

## A Quick Overview of the Balance

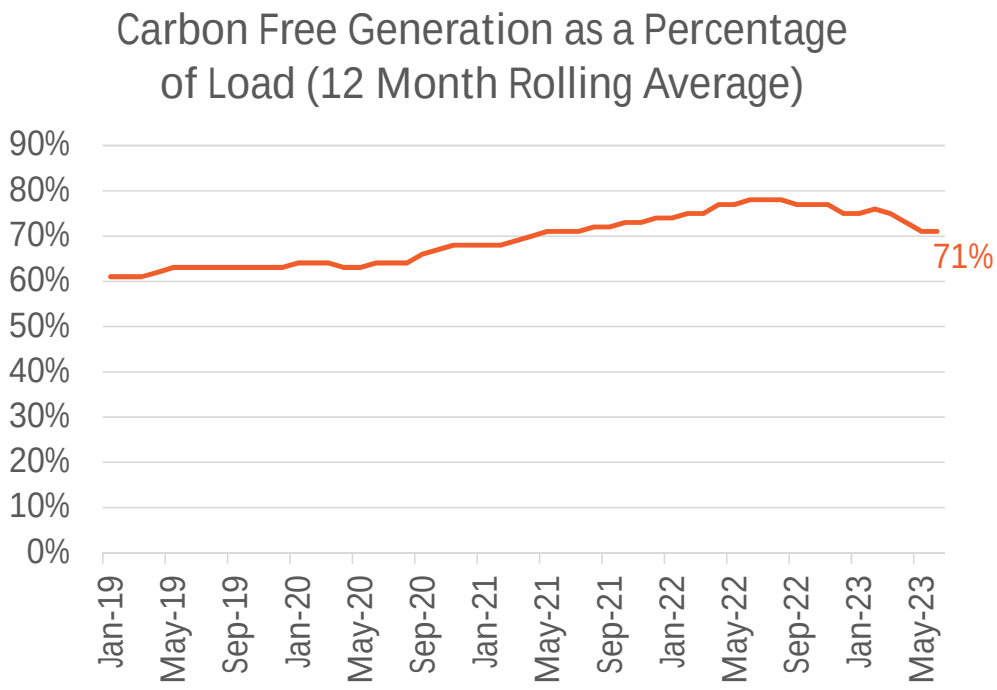
Environmental Sustainability ↔ Reliability ↔ Affordability ↔ Cost Stability

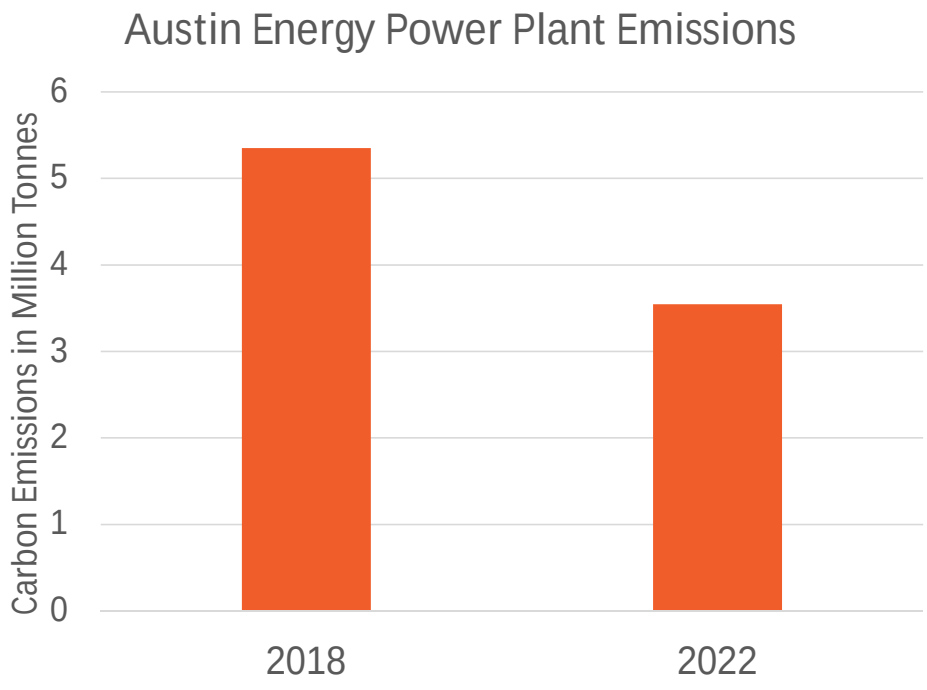
- Decker Creek Power Station
- Fayette Power Project
- No New Carbon Generating Assets
- REACH for Carbon Free by 2035

- Transmission Study
- Electric Transportation
- Local Thermal Storage

- Additional Renewable Generation Facilities
- Local Solar Resources
- Energy Efficiency and Demand Response
- Equitable Participation in Programs

# How Are We Doing?



# R E A C H

## Reduce Emissions Affordably for Climate Health

### Affordable

Protect customer rates

### Flexible

Dispatch during higher prices

### Reduction

4.12 mil tonnes saved to date

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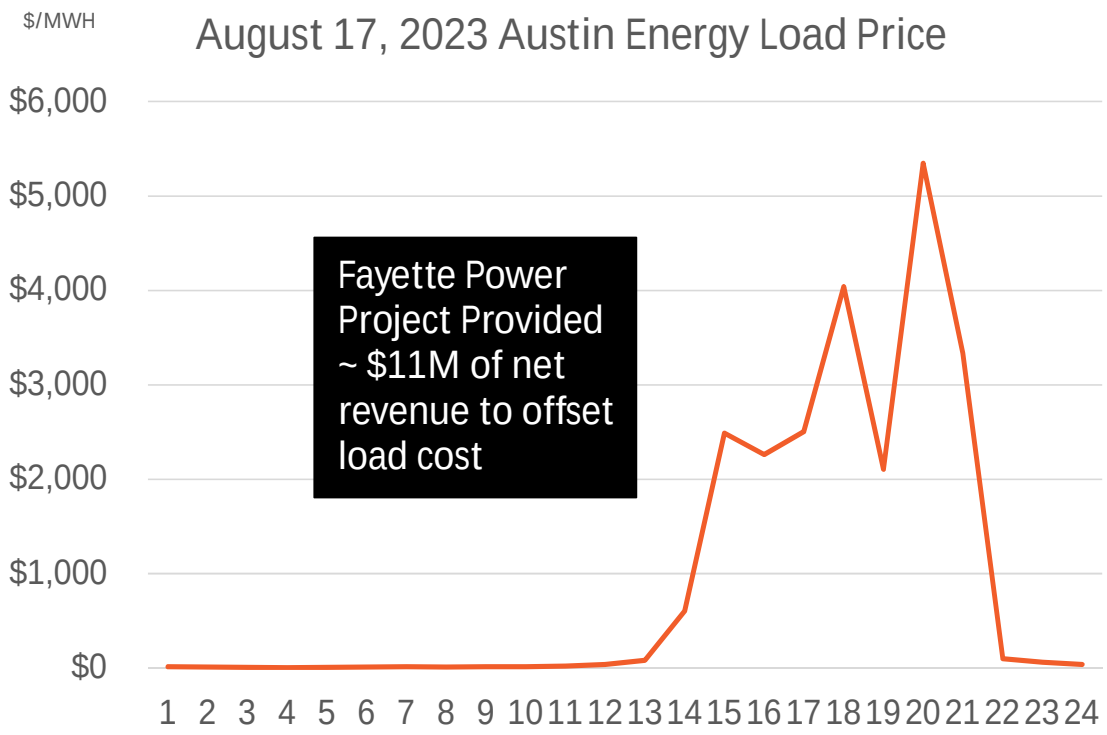
REACH is flexible and allows the utility to reduce emissions while at the same time protecting customers from rate increases arising from volatility in the ERCOT market

# REACH Performance & Benefits

REACH includes a value of carbon in our generation dispatch costs to reduce emissions at lower margins but still provides rate protection during high priced periods

## REACH Performance

- 4.12M tonnes of carbon emissions reduced
- $12.45 cost per tonne
- Highly cost effective compared to
  - California Carbon Mrkt ~$36 / tonne
  - North East Carbon Mrkt ~$14 / tonne



# Resource Planning: It's a Process…

1. Set Scope & Objectives
2. Develop Inputs & Assumptions
3. Modeling & Scenario Analysis
4. Risk & Financial Analysis
5. Select Preferred Strategy

# Current Challenges

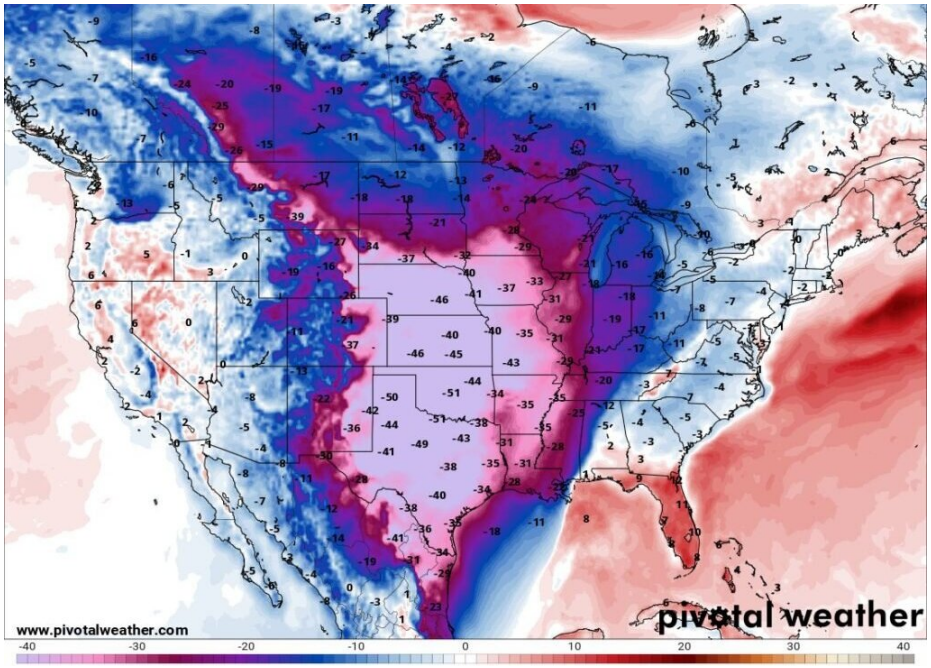
Retiring Fayette Power Project

Extreme Weather Events

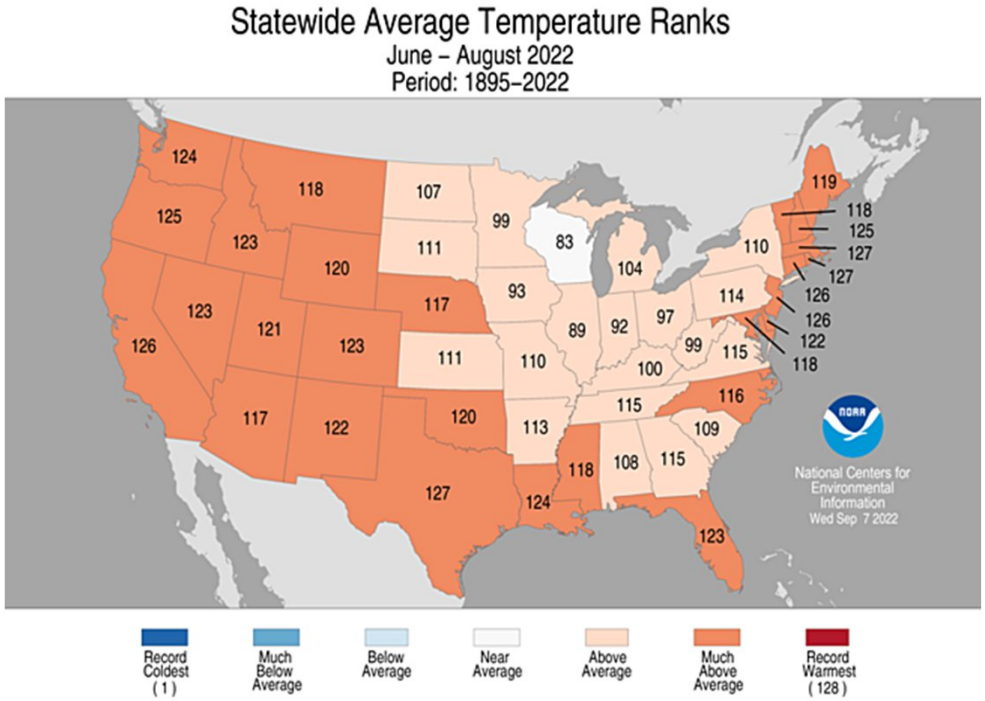
Regulatory / ERCOT Market Changes

Increased Market Volatility & Congestion Costs

# Extreme Weather Events




Winter Storm Uri saw temperatures 30 to 50 degrees below normal




Last year was 2nd hottest summer on record, we are looking to beat that this year

# Regulatory Risk and ERCOT Market Rule Changes

## ERCOT Market Changes

In response to Winter Storm Uri, changes now optimize for reliability in the market

## Higher Costs to Serve Customers

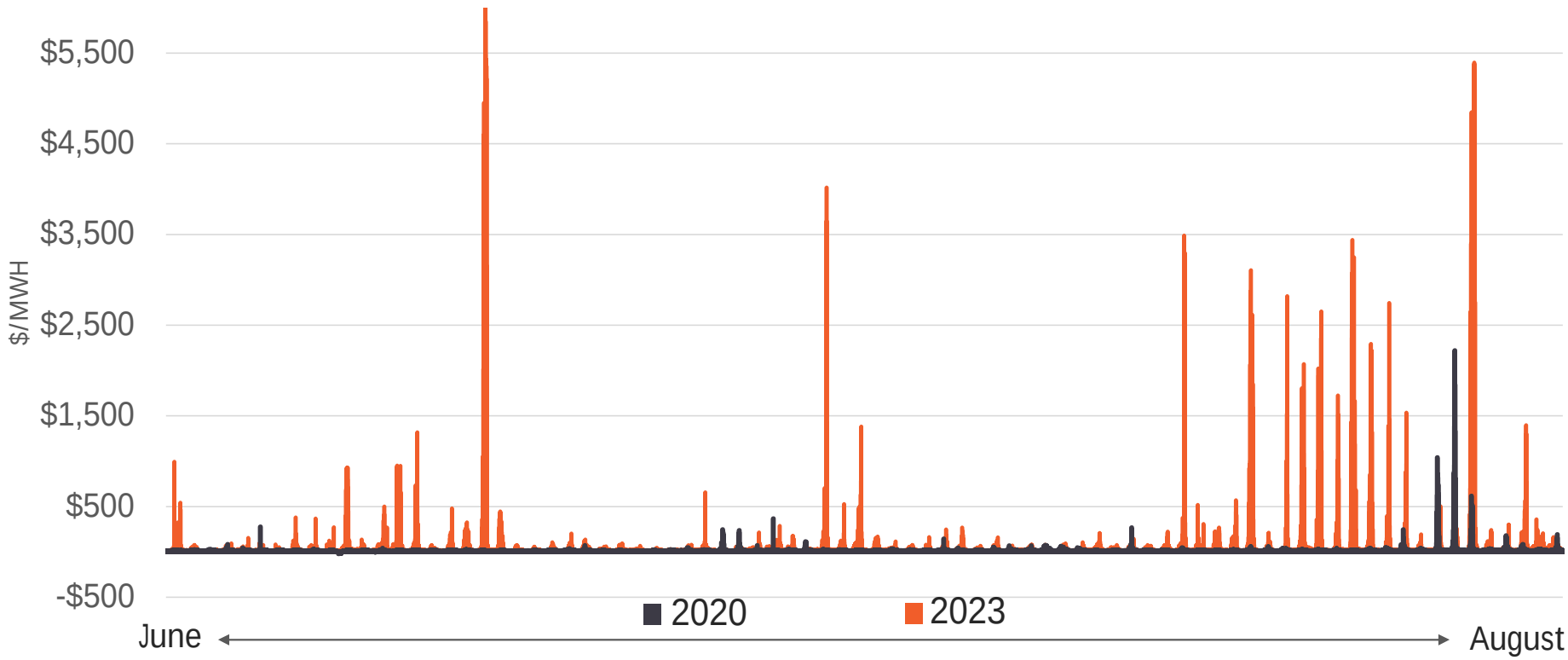
Changes have resulted in higher costs for Load (consumption)

## Value Changes for Generation Types

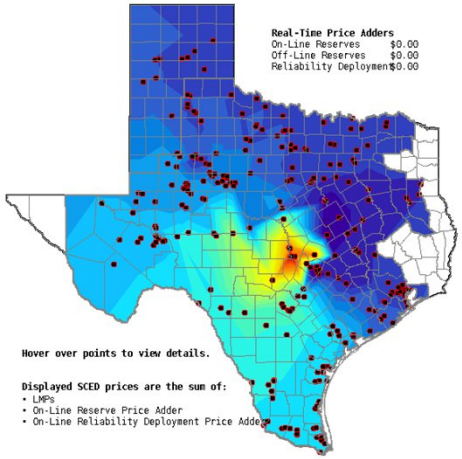
Changes have resulted in higher revenues for some types of generation supply

# Increased Market Volatility

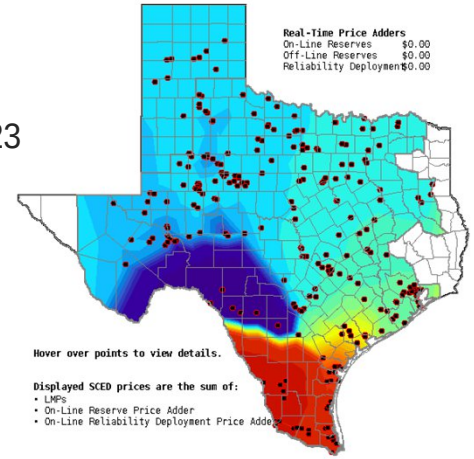
## Austin Energy Service Territory Market Settlement Price



# Market Congestion




August 16, 2023

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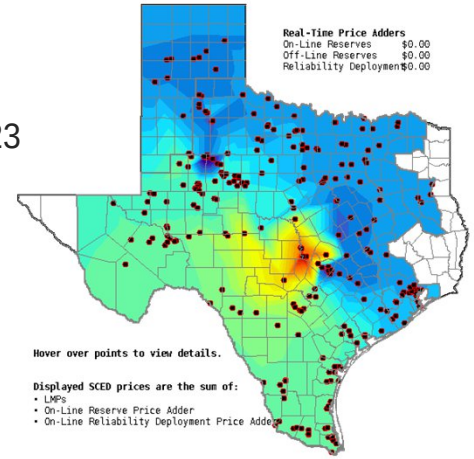


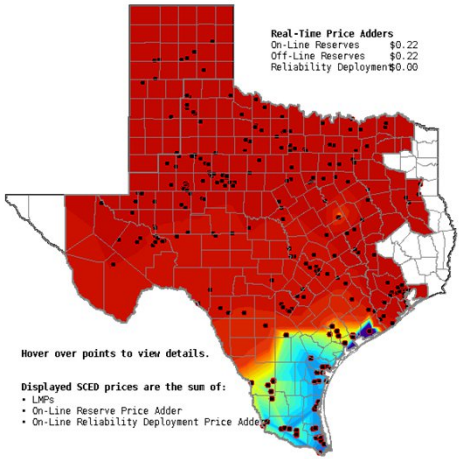


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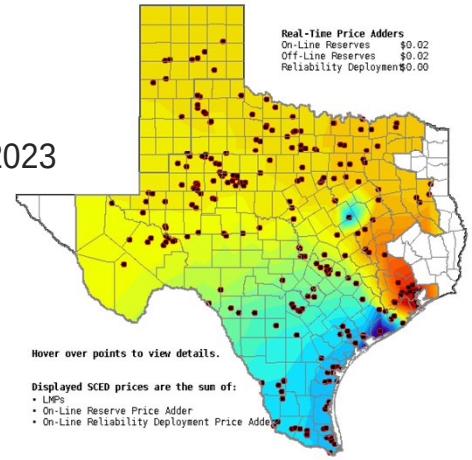
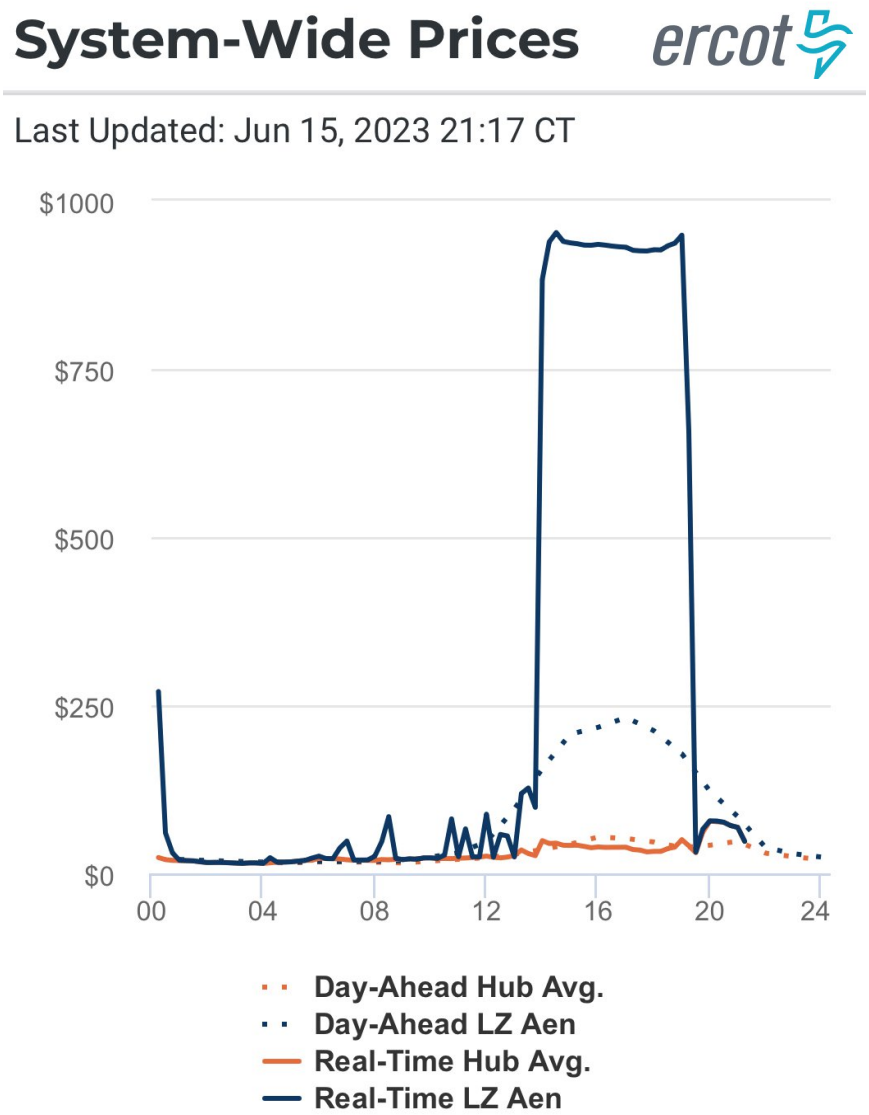
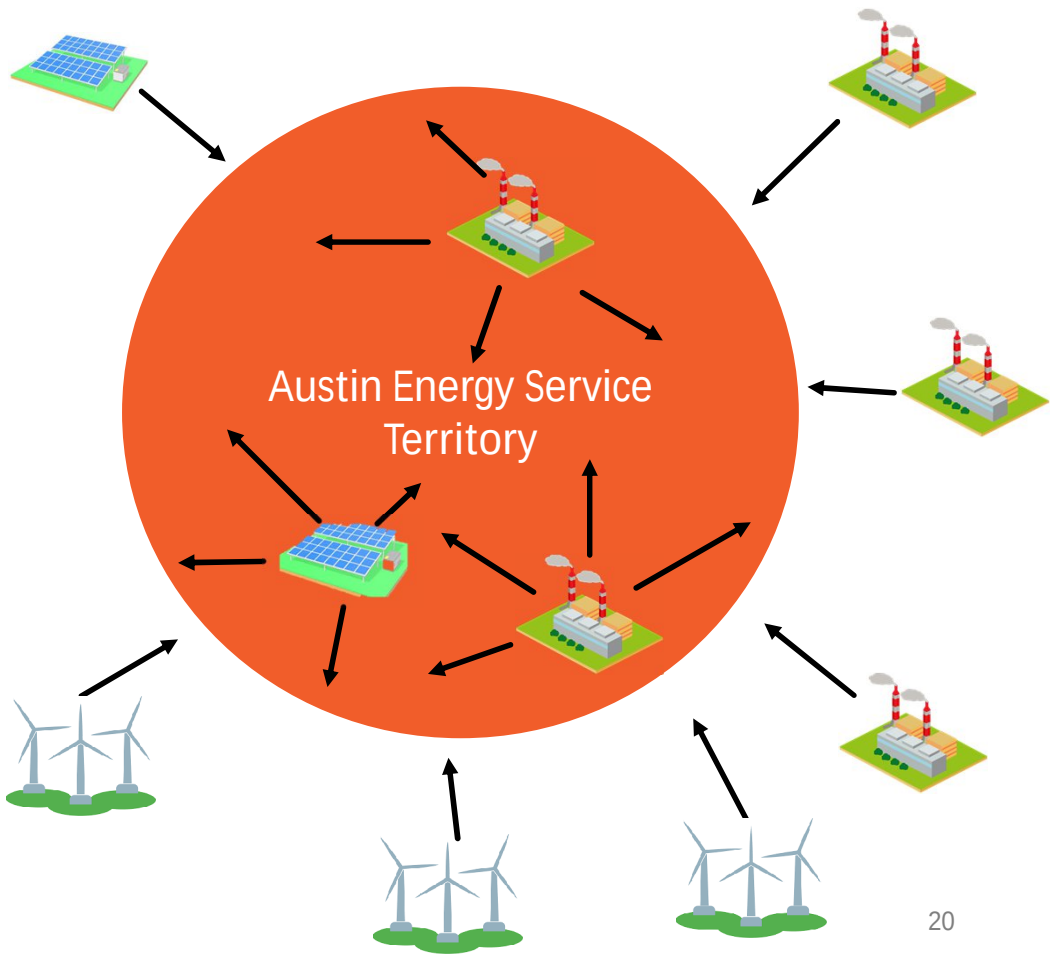


# Congestion

# Local Congestion
## Load Zone Price Separation



# System-Wide Prices

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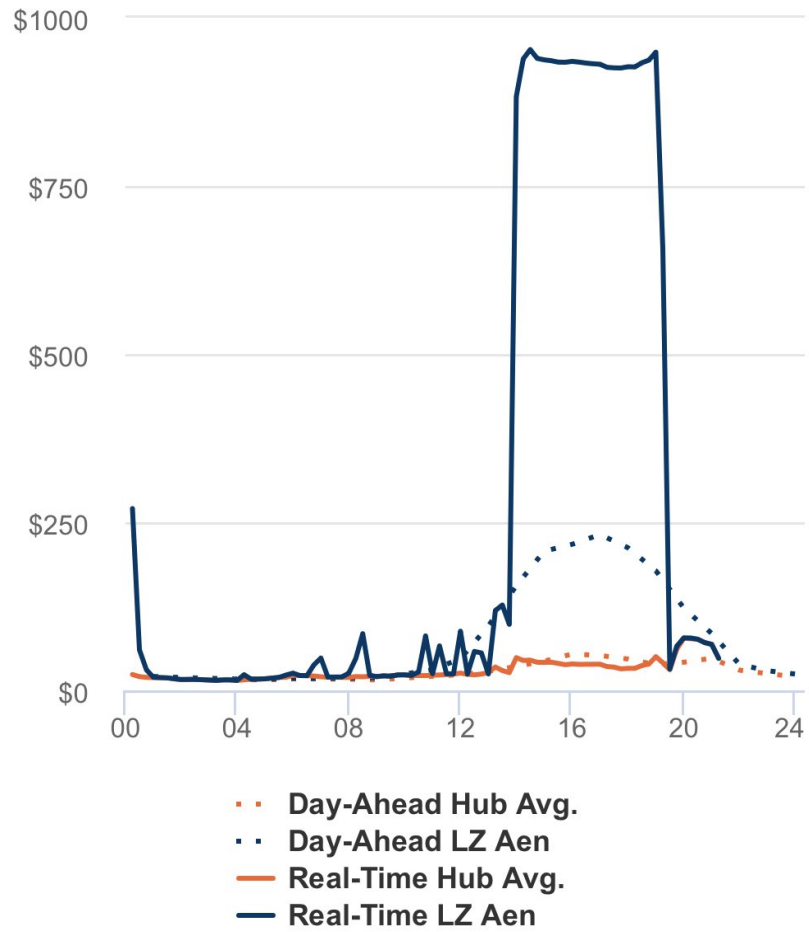
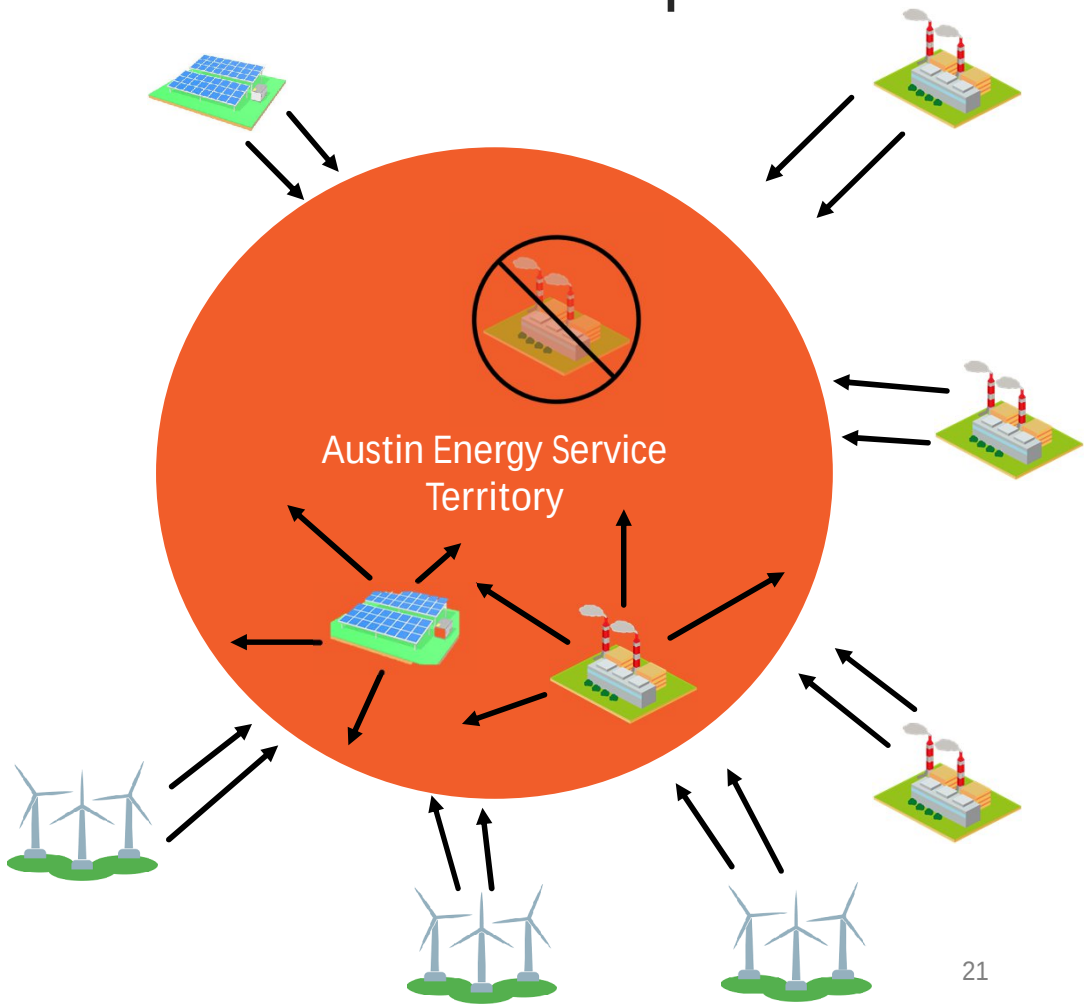



# Local Congestion
## Load Zone Price Separation



# New and Emerging Opportunities

## Infrastructure Investment and Jobs Act

## New and Emerging Technologies

- Green Hydrogen
- Longer Duration Storage
- Advanced Nuclear Reactors
- Carbon Capture and Sequestration

## Inflation Reduction Act

# What's Next?

## Solicit Feedback

Customer Driven
Community Focused

## Evaluate Existing and Emerging Technologies

Carbon Reduction
Affordability
Reliability
Rate Stability

## Update Plan

Resource Portfolio mitigates current and future challenges with a focus on achieving goals.