



Energy Market Transformation

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Informational Update

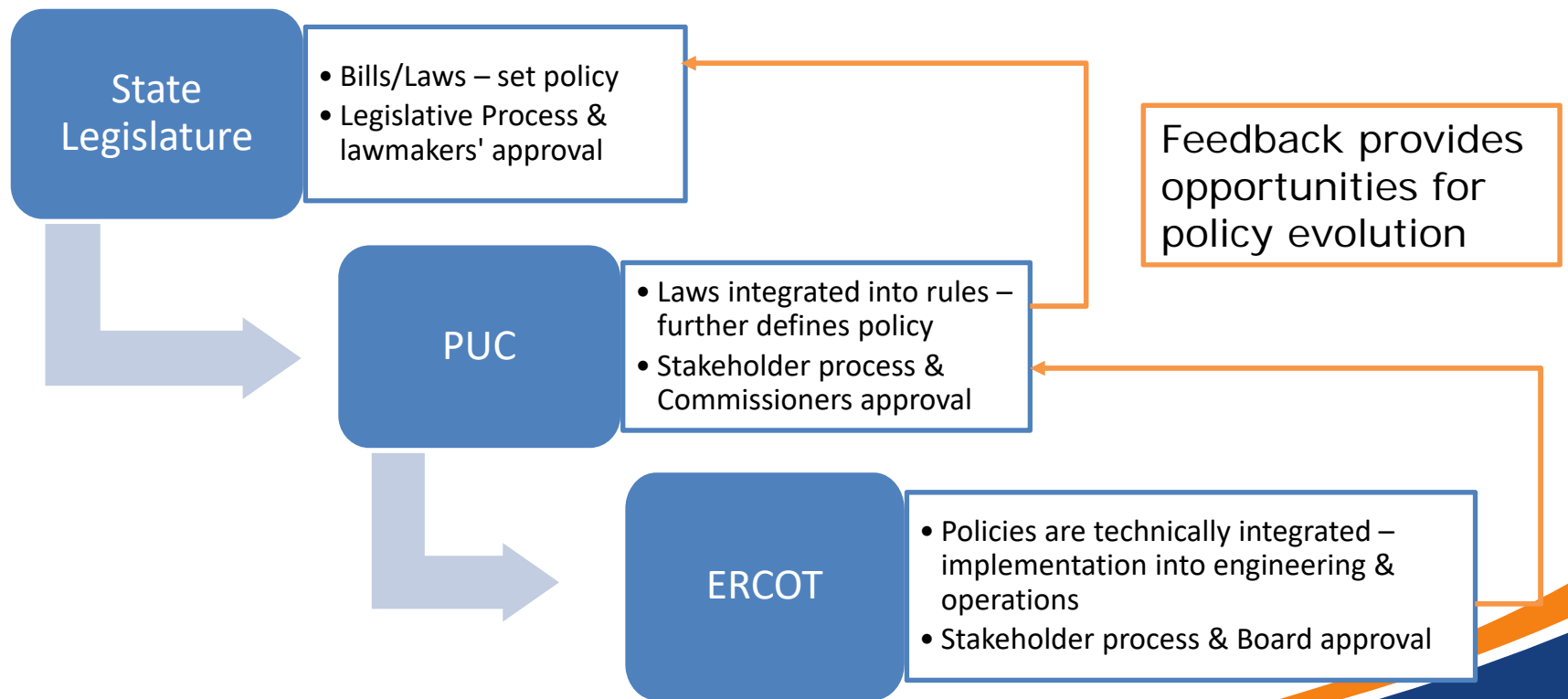
AGENDA



- **REGULATORY STRUCTURE**
- **FOCUS ON THE PUBLIC UTILITY COMMISSION (PUC) & ELECTRIC RELIABILITY COUNCIL OF TEXAS (ERCOT)**
- **QUICK FACTS**
- **POLICY PRIORITIES**
- **INFLUENCES ON POLICY**
- **MARKET REDESIGN BLUEPRINT**
- **STRATEGIC CONSIDERATIONS**
- **Q&A**

REGULATORY STRUCTURE OVERVIEW

FROM THE CAPITOL TO UTILITY



REGULATORY STRUCTURE

PUC GOVERNANCE CHANGES



PUC Commissioner Requirements

Senate Bill 2154

New Commissioner Requirements

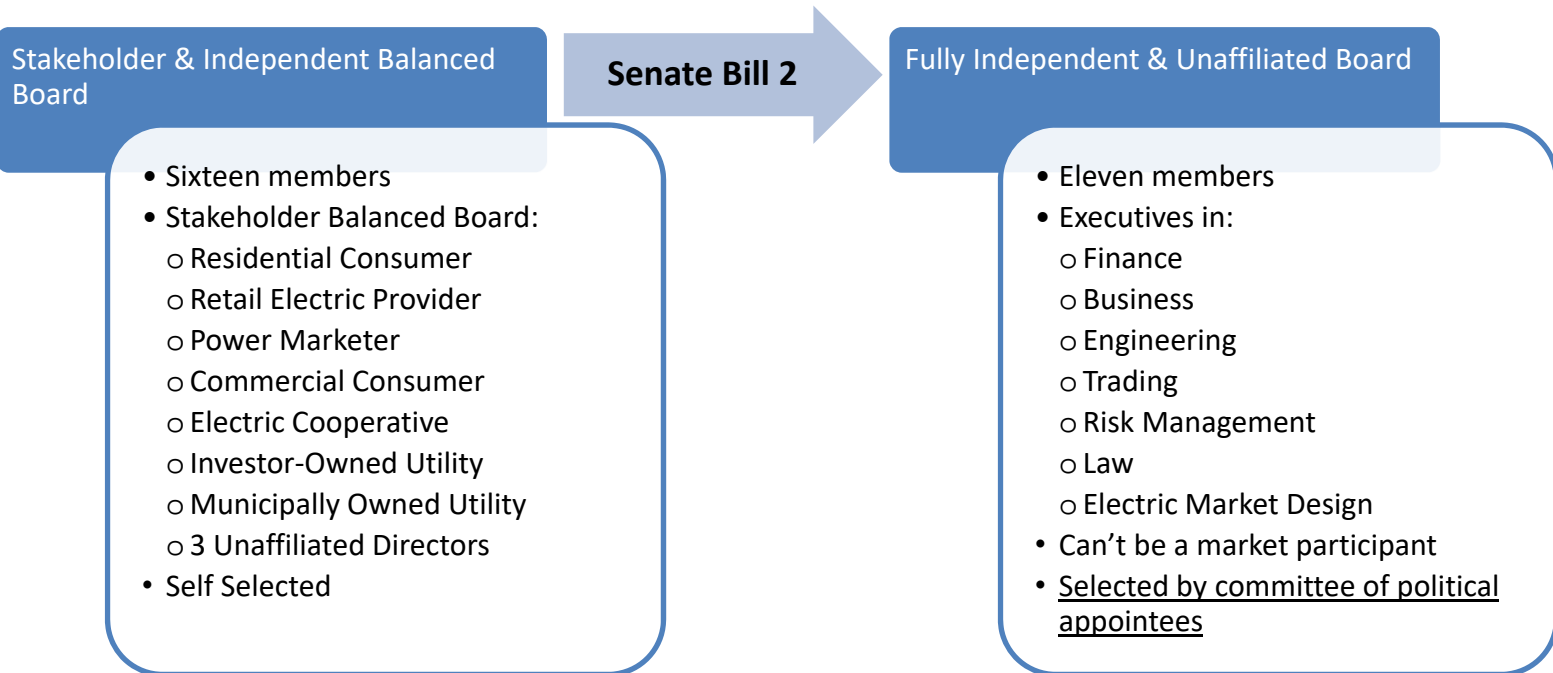
- Three commissioners
 - **No dialogue** outside of open meetings
- Appointed by Governor
- All must be well informed & qualified in utility regulation

- Five Commissioners
 - **Two can now meet** – open meetings act
- Appointed by Governor
- **Two** must be well informed & qualified in utility regulation

The PUC creates policy through a stakeholder process with commissioners as the decision makers.

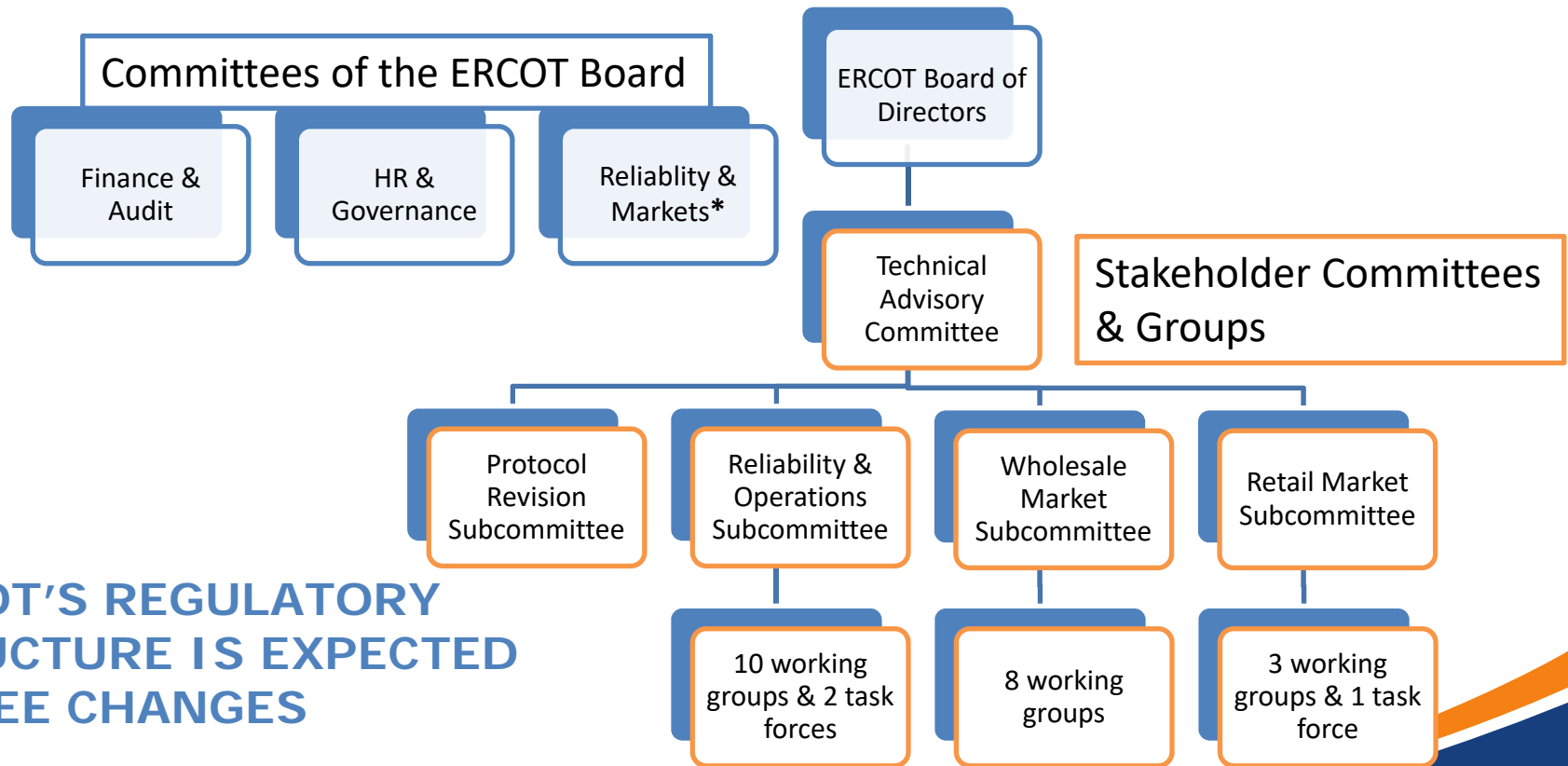
ERCOT GOVERNANCE CHANGES

STAKEHOLDER DILUTION



ERCOT creates policy through a stakeholder process with an unaffiliated ERCOT Board as the decision makers

ERCOT STAKEHOLDER STRUCTURE



ERCOT'S REGULATORY STRUCTURE IS EXPECTED TO SEE CHANGES

* Newly formed committee

REGULATORY PROCESS

QUICK FACTS



- ERCOT is the financial & technical implementation step in a complex regulatory process
- We are a key participant in the ERCOT process
- Policy & regulations are developed with stakeholders, but ERCOT has command & control authority
- Legislators, PUC Commissioners, & ERCOT leadership are aligned on reliability first policies
- Impacts of Winter Storm Uri prompted policy makers to modify the ERCOT market & focus on reliability & dispatchability

Reliability & Market Policy decisions are made at the State level.

REGULATORY PROCESS

QUICK FACTS



- CPS Energy is required to be a part of ERCOT as a Transmission Operator
- CPS Energy has been an active member of the Texas electric grid since its beginning as the Texas Interconnected System (TIS) formed during WWII
- CPS Energy continued to be a member of ERCOT since its creation in 1970, replacing the TIS
- Connecting to other grids is not a local decision

We have been a key part of the electric system in Texas since the beginning.

REGULATORY FOCUS TOPICS



CURRENT POLICY INITIATIVES

- PUC Priorities:
 - Market Redesign
 - Weatherization
 - Administrative penalties
 - Market price caps
 - Securitization
 - Critical Loads
 - Gas & Electric Coordination
 - Emergency Comms
 - Emergency Ops Plans
 - Supply Chain Mapping
- ERCOT Priorities:
 - Changes to market pricing
 - Increases in daily operating reserves
 - Changes to load shed flexibility
 - Changes to generator outage process
 - Ancillary Service Changes
 - New Firm Fuel Supply Service

POLICY PRIORITIES

WHERE IS POLICY HEADING?



- Policy is focused on reliability & market design
- Dispatchable Generation is top of list
- Crisis Based Business model replaced with conservative operations
- PUC is **evaluating** a Market Redesign Blueprint
 - Load Side Obligation
 - Dispatchable Energy Credit program
 - Reliability Backstop Mechanism

Energy market policy is driven by the PUC & Legislature with a focus on enhancing the reliability of generators.

MARKET REDESIGN BLUEPRINT

LOAD SIDE OBLIGATION



- Load Serving Entities will be required to secure capacity for their load obligation
- Generators likely to be accredited based on their operational characteristics
 - Not all generators will be accredited equally
- Goal is to spur demand for enough dispatchable generators to serve all customers

Companies will be required to have enough generating capacity to serve their customers.

MARKET REDESIGN BLUEPRINT

DISPATCHABLE ENERGY CREDITS



- Generators will be issued credits for new build based on accreditation for dispatchability
 - Not all generators will be accredited equally
- Can be a generator portfolio standard or included in the Load Side Obligation as a load side standard
- Goal is to build new dispatchable generators to maintain adequate system reserves

Dispatchable Energy Credits could be the means to build new generators & achieve a desired reserve margin.

MARKET REDESIGN BLUEPRINT

RELIABILITY BACKSTOP



- A subset of generators will be paid to stand by & only operate during emergencies
- Will use a regulated rate of return to fund operations
- Goal is to create artificial scarcity on the supply side (\$\$\$), spur new generation investment & maintain emergency power sources

Reliability Backstop will reserve power sources for emergencies & create artificial scarcity.

STRATEGIC CONSIDERATIONS

FACTORS TO BALANCE



- Direct impacts
 - Changing valuation of generators in new market paradigm
 - Economics of ERCOT Market are changing
 - Costs to participate in market
 - Costs to our customers
- Indirect impacts
 - Secondary & bilateral market to see pricing influences
 - System costs to implement new technologies
 - Supply chain challenges, new demand may stifle supply
 - Environmental considerations

Diversification of our generation portfolio mitigates uncertainty in market policy.



Thank You

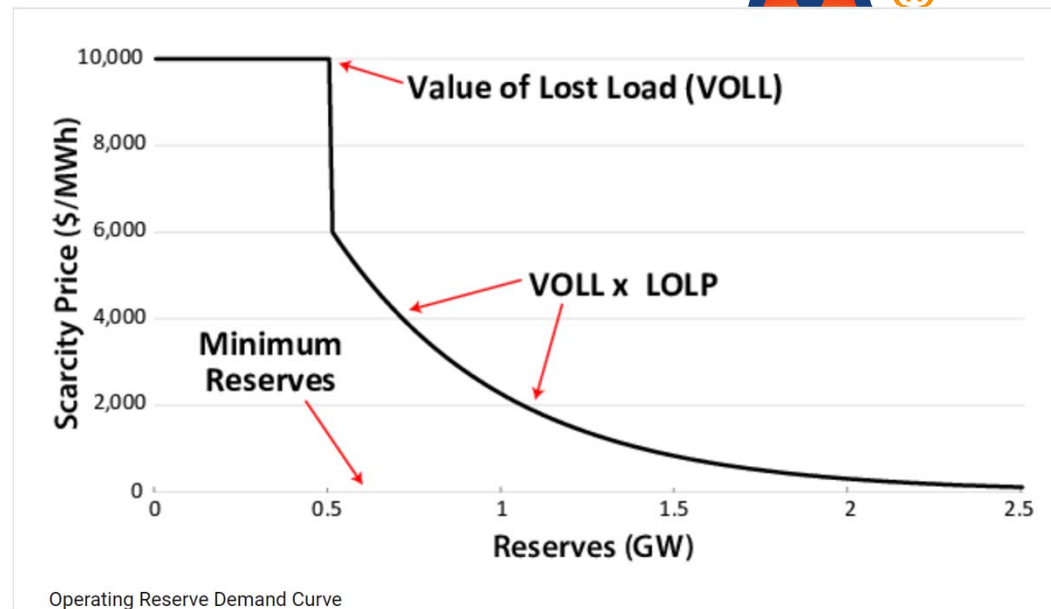




Appendix



Illustrative – Crisis based model

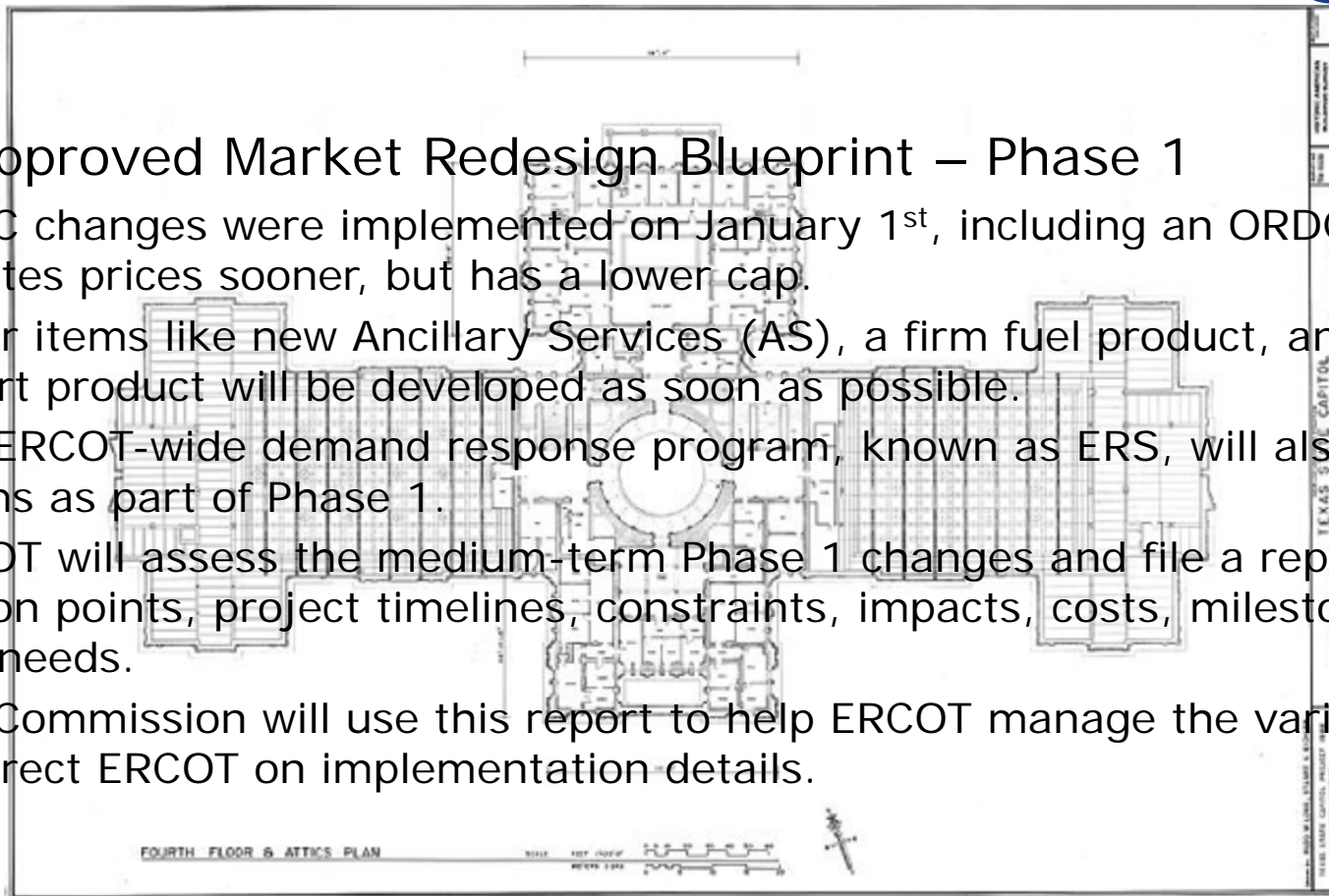


As we approach emergency (move from right to left on x-axis) prices increase (move from bottom to top on y-axis)

MARKET REDESIGN BLUEPRINT



- PUC approved Market Redesign Blueprint – Phase 1
 - ORDC changes were implemented on January 1st, including an ORDC that escalates prices sooner, but has a lower cap.
 - Other items like new Ancillary Services (AS), a firm fuel product, and a voltage support product will be developed as soon as possible.
 - The ERCOT-wide demand response program, known as ERS, will also see reforms as part of Phase 1.
 - ERCOT will assess the medium-term Phase 1 changes and file a report with decision points, project timelines, constraints, impacts, costs, milestones and other needs.
 - The Commission will use this report to help ERCOT manage the various changes and direct ERCOT on implementation details.



REGULATORY PROCESS

LEGISLATIVE ENGAGEMENT



- Texas Legislature – state elected officials focus on topics & pass legislation that are reflective of their priorities & their constituents' experiences.
 - The Senate Business & Commerce Committee & the House State Affairs Committee are the primary drivers of energy-related policy discussions
- Engagement & advocacy efforts are led by our Federal & State Relations Team with support from our key subject matter experts from across the company

We engage with lawmakers on behalf of our customers & community to improve the reliability & affordability of the electric market

REGULATORY & STAKEHOLDER PROCESS



REGULATORY COMMISSION ENGAGEMENT

- Public Utility Commission (PUC) & Railroad Commission (RRC)– Appointed commissioners create rules based on law, predominantly a legal forum with technical focus
- Follow regulatory process to comment on rulemaking proceedings directly or as a part of trade association engagement

Our engagement with the regulatory commissions improves the quality of the rules that we follow

REGULATORY & STAKEHOLDER PROCESS

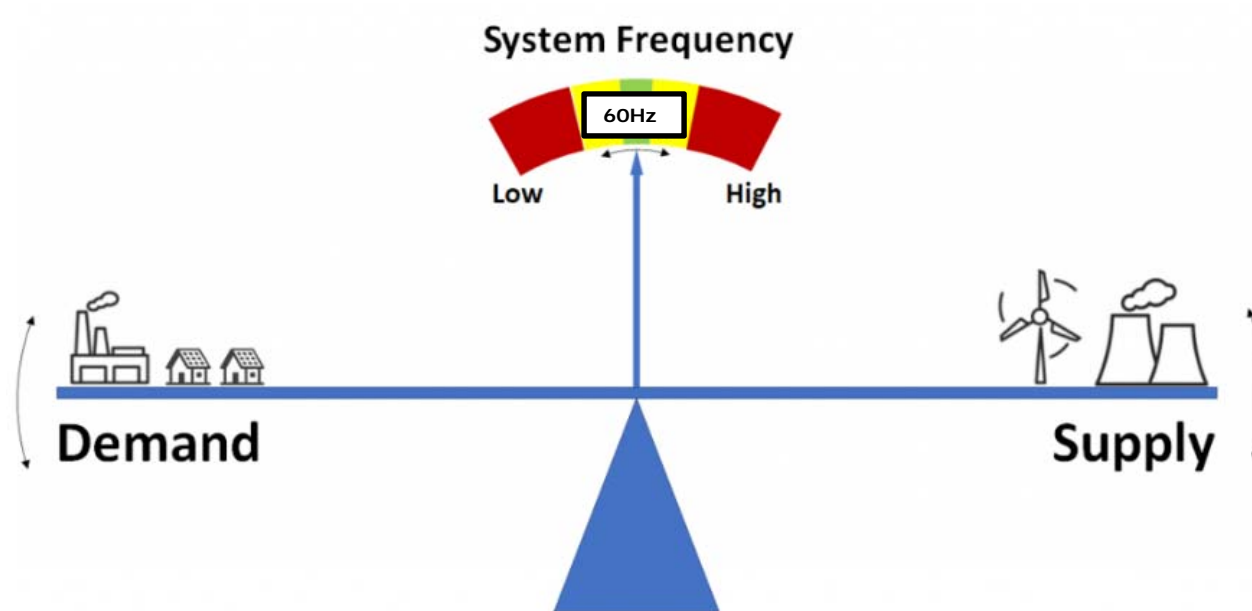


STAKEHOLDER ENGAGEMENT

- ERCOT – Uses a well-designed regulatory framework to develop, propose, vet, & implement changes to the ERCOT rules
- The ERCOT stakeholder process is highly collaborative with communication & compromise being the key attributes of the process
- Change proposals can come from any stakeholder

Our team works across the organization to recognize, develop, & engage in policy development that meets our policy objectives

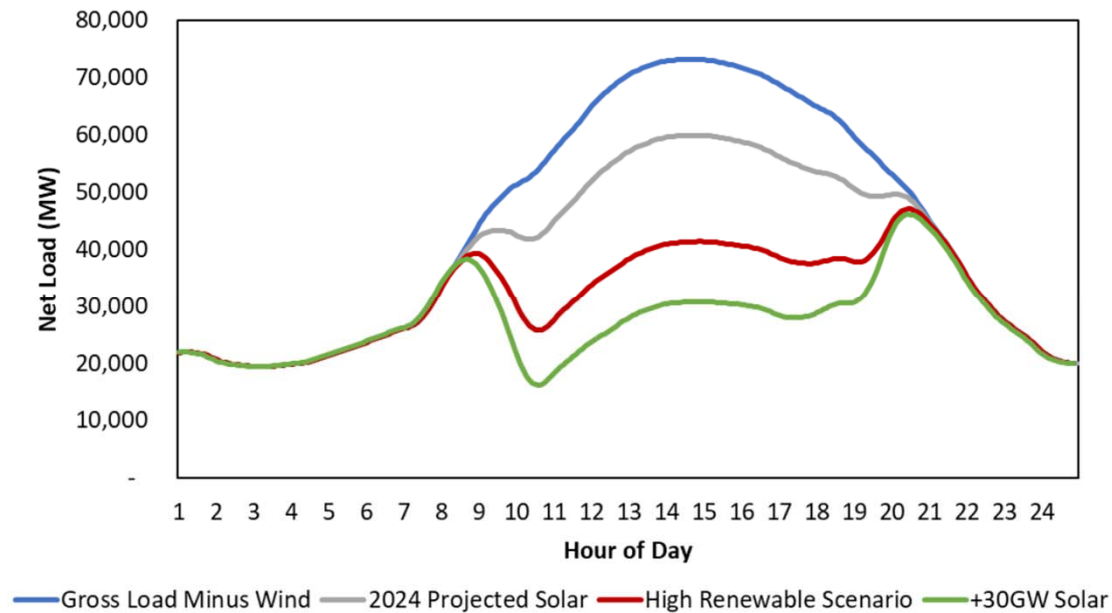
Illustrative – Grid Balance



System frequency reflects the closeness of balance between **demand** and **supply**

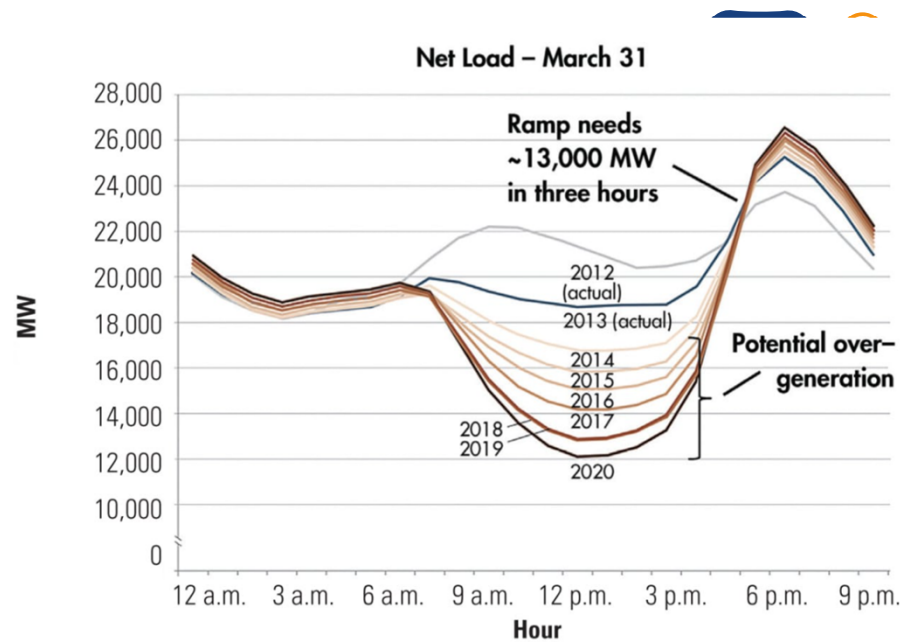
Net Load - ERCOT

Figure ES-7. Net Load Shape Impact of Solar⁷



As solar capacity increases risk of serving customers changes

Net Load – Duck Curve



Extreme impact of solar ramp at dusk creates a need for fast ramping generation

GLOSSARY / DEFINITIONS

Acronym or Word	Definition	Acronym or Word	Definition
ERCOT	Electric Reliability Council of Texas – manages the electric grid & the wholesale market	RRC	Rail Road Commission of Texas – regulator for the natural gas industry
AS	Ancillary Service – reliability services that ERCOT uses to manage the grid	RUC	Reliability Unit Commitment – the ERCOT practice of instructing a generator to come online in real-time
PUC	Public Utility Commission of Texas – regulator for the electric, water, & telecommunications industries in Texas	ORDC	Operating Reserve Demand Curve – the mechanism in the ERCOT real-time market that increases prices as online capacity approaches emergency conditions

GLOSSARY / DEFINITIONS

Acronym or Word	Definition	Acronym or Word	Definition
VOLL	Value of Lost Load – The theoretical economic customer value of losing power		