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# Market Design Options for Managing Reliability in ERCOT

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PRESENTED TO  
Public Utility Commission of  
Texas

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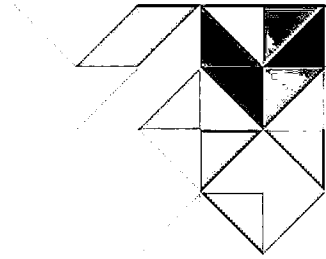
# Disclaimer

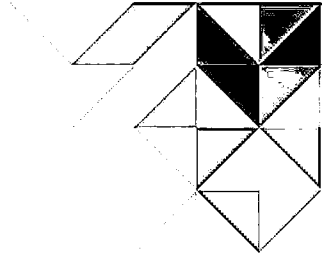
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## PLEASE NOTE

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## Two problems market design can help address

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### 1. Resource Adequacy

Ensure enough supply always available to meet demand

- Under all reasonably plausible conditions
- Not just enough *nominal MW* but *available* capacity, including dispatchable

### 2. Operational Responsiveness

Manage changes in supply and demand

- Contingencies, expected and unexpected ramping needs
- Can manage ramping reliably if have resource adequacy
- How to manage more efficiently, in-market?

## Market Design Options for Resource Adequacy

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A large teal circle containing the text 'OPTION 1' and 'LSERO+'.

OPTION 1  
LSERO+

A large green circle containing the text 'OPTION 2' and 'Targeted Fuel and Backup Reserves'.

OPTION 2  
Targeted Fuel  
and Backup  
Reserves

## Elements of Option 1: LSERO+

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OPTION 1 LSERO+	
Basic Features	Enhancements
<ul style="list-style-type: none"><li>→ RA standard</li><li>→ LSE requirement for every season</li><li>→ Opt-out</li><li>→ Supply accreditation</li><li>→ Credit tracking</li><li>→ Performance penalties</li></ul>	<ul style="list-style-type: none"><li>→ “Big fish” auction</li><li>→ Prompt showing</li><li>→ Interim measures</li></ul>

## Elements of Option 2: Targeted Fuel & Backup Reserves

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OPTION 2		
Targeted Fuel & Backup Reserves		
Weatherization	Fuel Firming Product	Backup Reserves
→ Enforcement	→ Product definition → Eligibility → Quantity → Auction → Cost allocation → Testing → Offer at price cap	→ Product definition → Eligibility → Quantity → Forward timeframe → Cost allocation

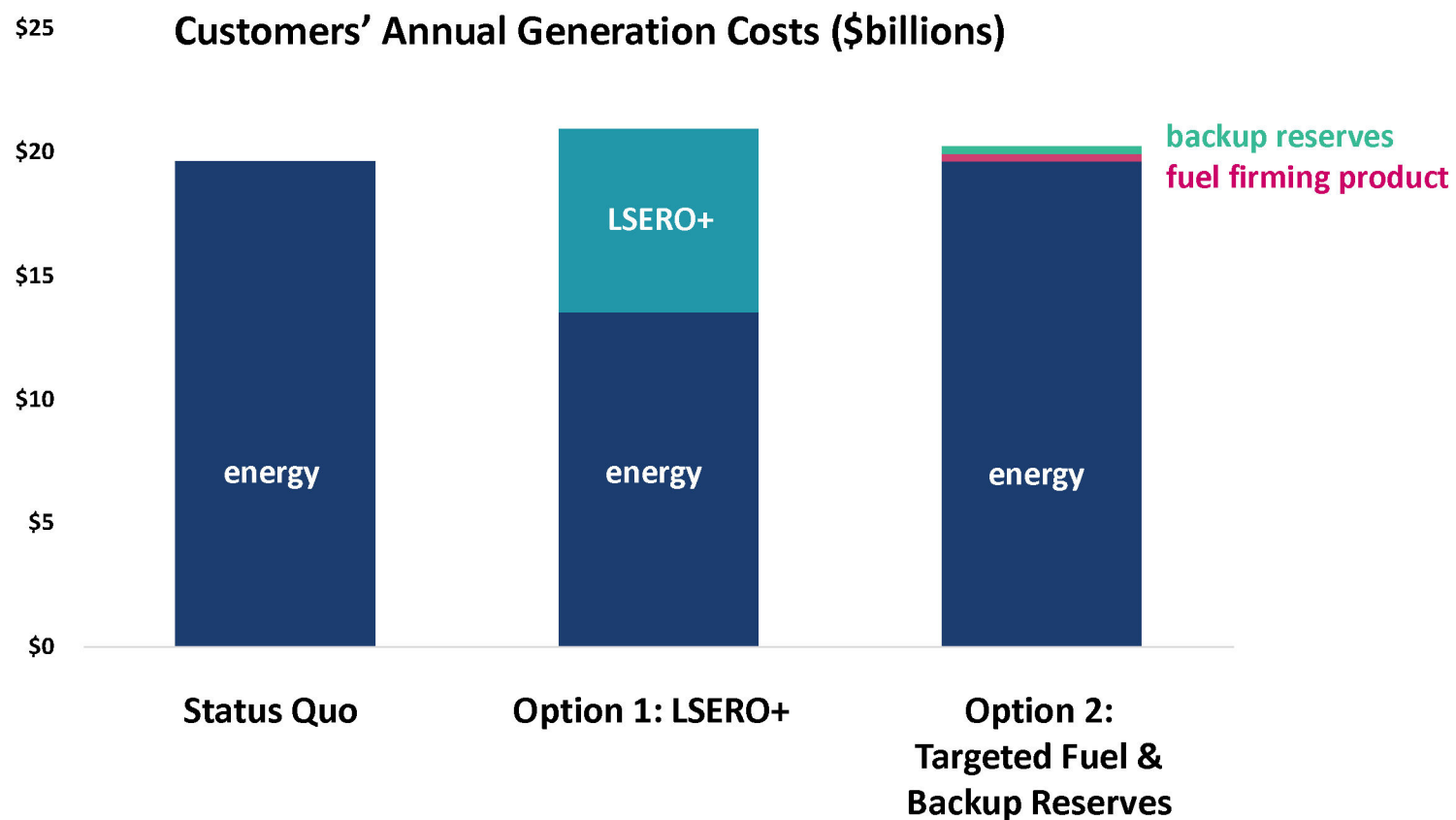
## Comparison of Resource Adequacy Options

	OPTION 0 Status Quo	OPTION 1 LSERO+	OPTION 2 Targeted Fuel & Backup Reserves
Resource Adequacy	✗	✓ ✓	✓
Market & Regulatory Sustainability	✗	✓	✓
Cost on Bill	Least	+7% on generation	+3% on generation
Challenges	Less control to secure fleet against extremes; shortages every 1-2 yrs	Administrative intensity; risk to LSEs?	Does not control preparedness of entire fleet



# Estimated Customer Costs of Resource Adequacy Options

Preliminary Estimate



## Meeting Ramping Needs In-Market

NSRS and ECRS can address ramping needs in-market

- **Quantity**
  - Much smaller than “duck curve”
- **Cost allocation**
- **LT improvements**
  - RTC is key
  - Suite of AS products