Main Findings from ICF Report
"Assessment of ERCOT Market Structural Changes"
October 26, 2022

This report evaluates the reliability and wholesale cost impacts of ERCOT market and operational changes adopted since Winter Storm Uri in February 2021, as well as the three primary market design options under consideration by the Public Utility Commission of Texas (PUCT) to improve ERCOT grid reliability. The Texas Consumer Association (TCA) and Texas Consumer Foundation engaged ICF, Inc. to conduct this analysis.

This analysis finds that none of the Phase 2 market reform proposals will cause enough new resource construction to reduce possible customer outages in ERCOT to industry standards by 2030. All of the measures studied will raise total wholesale market costs by billions of dollars between now and 2030. TCA values grid reliability, but we want to be sure that Texas customers get the maximum reliability value from the money we invest in the grid.

Phase 1

The PUCT and ERCOT have already adopted several operational and wholesale electric market changes, called the "Phase 1" changes, that include power plant winterization, paying "scarcity prices" to power producers during more hours of the year, and paying for more generation to be available in case of emergencies. These Phase 1 changes:

- Have increased wholesale ERCOT costs by at least $1.5 billion so far this year, according to the ERCOT Independent Market Monitor, and will likely raise ERCOT's total wholesale costs by another $1.3 billion (a 5% increase) to about $28.7 billion in 2023.
- These cost increases, on top of higher natural gas costs and billions of dollars in additional fees to cover Winter Storm Uri gas and power company losses this year, have already increased ERCOT retail customer bills by up to 70%.
- These changes will incent new construction of some additional natural gas, photovoltaic and battery resources in ERCOT through 2030.

Phase 2

ICF analyzed the reliability and cost impacts of the PUCT's three preferred policy options, using its suite of electric market operational and economic models and 1,000 different potential weather (including extreme weather) and grid outage cases through 2030. ICF's analysis finds that when compared to the Phase 1 changes now in place, the Phase 2 Backstop Reliability Service (BRS) proposal delivers the greatest reliability improvement at the lowest incremental

cost, while the Dispatchable Energy Credit (DEC) proposal produces the greatest cost savings. The Load-Serving Entity Obligation (LSEO) proposal delivers the same reliability improvement as the DEC option, but at a much higher cost. Neither the Phase 1 or Phase 2 options now under consideration will cause new generation to be built before 2026, and they will not improve reliability up to common industry goals by 2030.

The ICF analysis finds that the Dispatchable Energy Credit (DEC) and Backstop Reliability Service (BRS) proposals would deliver some new generation capacity at costs below the recent, typical $1.3 million/MW "overnight cost" of a new gas turbine. The DEC proposal could actually lower wholesale electricity costs over time relative to Phase 1 costs. The LSEO option, however, would cost more than $9.0 million per MW of incremental new capacity over 2025-2030, almost seven times higher than actual capital costs.

ERCOT is tasked with managing a wide range of reliability challenges and risks associated with extreme winter and summer weather conditions, particularly as wind and solar resources grow. The BRS proposal will address much of the winter risk (assuming both power plants and fuel deliveries are winterized), while the DEC proposal, with high levels of fast batteries and gas peakers, can solve the summer risks. The LSEO proposal will not fully address either summer or winter risks.

On the specific Phase 2 policy options, ICF finds:

Load-Serving Entity Obligation -- The LSEO proposal, which would create a capacity market-like mechanism to pay more to current and future generators, will have the highest cost impact while delivering no more reliability improvement than the lower-cost DEC proposal.

- **Higher costs** -- The LSEO could raise ERCOT wholesale costs by $8.5 billion in 2025 to $3.8 billion in 2030, on top of the Phase 1 cost increases, even though LSEO will not incentivize additional new generation construction until 2026-27.
- **Higher generator earnings** -- The higher LSEO charges will increase existing generators' earnings more than the other measures, but they will bring little new dispatchable fossil generation online.
- **Won't prevent retirements** -- The LSEO will not prevent any existing gas and coal generators from retiring.
- **Won't improve reliability to industry expectations --** The LSEO proposal would deliver a reliability level of four possible outages every 10 years — four times more outages than the one outage-in-10 years electric industry goal.
- **Easy to manipulate** – The LSEO proposal can be manipulated in several ways to inflate the amount of customer money paid to generators.
- **Prioritizes regulation over competition** – The LSEO would massively increase the power of government regulators compared to the market today, making political calculations and government administrative decisions more important than economic competition in determining financial and reliability outcomes in the electric market.

- **Stifles competition by independent retailers** – The LSEO proposal would stifle the capability of small, independent Retail Electric Providers to compete in the ERCOT retail market.

We see no way to modify the LSEO proposal to make it as cost-effective as the other Phase 2 options, or to constructively improve ERCOT reliability.

Backstop Reliability Service (BRS) – The BRS proposal would pay some older existing dispatchable fossil plants to defer retirement, pull out of the energy market entirely, and remain available solely for emergency operations.

- **Greatest reliability improvement for lowest cost** – The BRS proposal offers the greatest reliability improvement for the lowest incremental cost, reducing Texas' risk from potentially six outages-per-10 years down to two outages-per-10 years.
- **Addresses winter reliability risk** -- The BRS will address much of ERCOT's winter risk (assuming fuel deliveries are winterized).

Dispatchable Energy Credit (DEC) -- The DEC proposal would pay a small price premium to fast, flexible generation and battery units that improve real-time, intra-hour grid operation and expand resource capacity.

- **Lower cost for reliability** -- The DEC proposal delivers the same reliability as LSEO (up to four possible outages every 10 years), but at a direct cost of only $1.3 million per new MW of capacity.
- **Saves customers money** -- Unlike the other proposals, the DEC proposal could save customers money relative to Phase 1 by adding more resources that reduce wholesale energy costs over time.
- **Addresses summer risk** -- The DEC proposal will incent new resources that better support summer operational risks from high solar and wind resource penetration.

In a few weeks, the Texas Consumer Association and Texas Consumer Foundation will issue a supplemental report — using the same data and methodologies used here — to assess the impact of aggressive deployment of energy efficiency, demand response, and distributed energy resources on ERCOT costs and reliability.

The Texas Consumer Association supports consumers on pocketbook issues before several Texas regulatory agencies. The organizations sponsored this analysis by ICF Inc., a well-respected consulting firm with extensive energy market expertise and no conflicts of interest in the ERCOT market. TCA/TCF receive no funding from any Texas energy stakeholders.