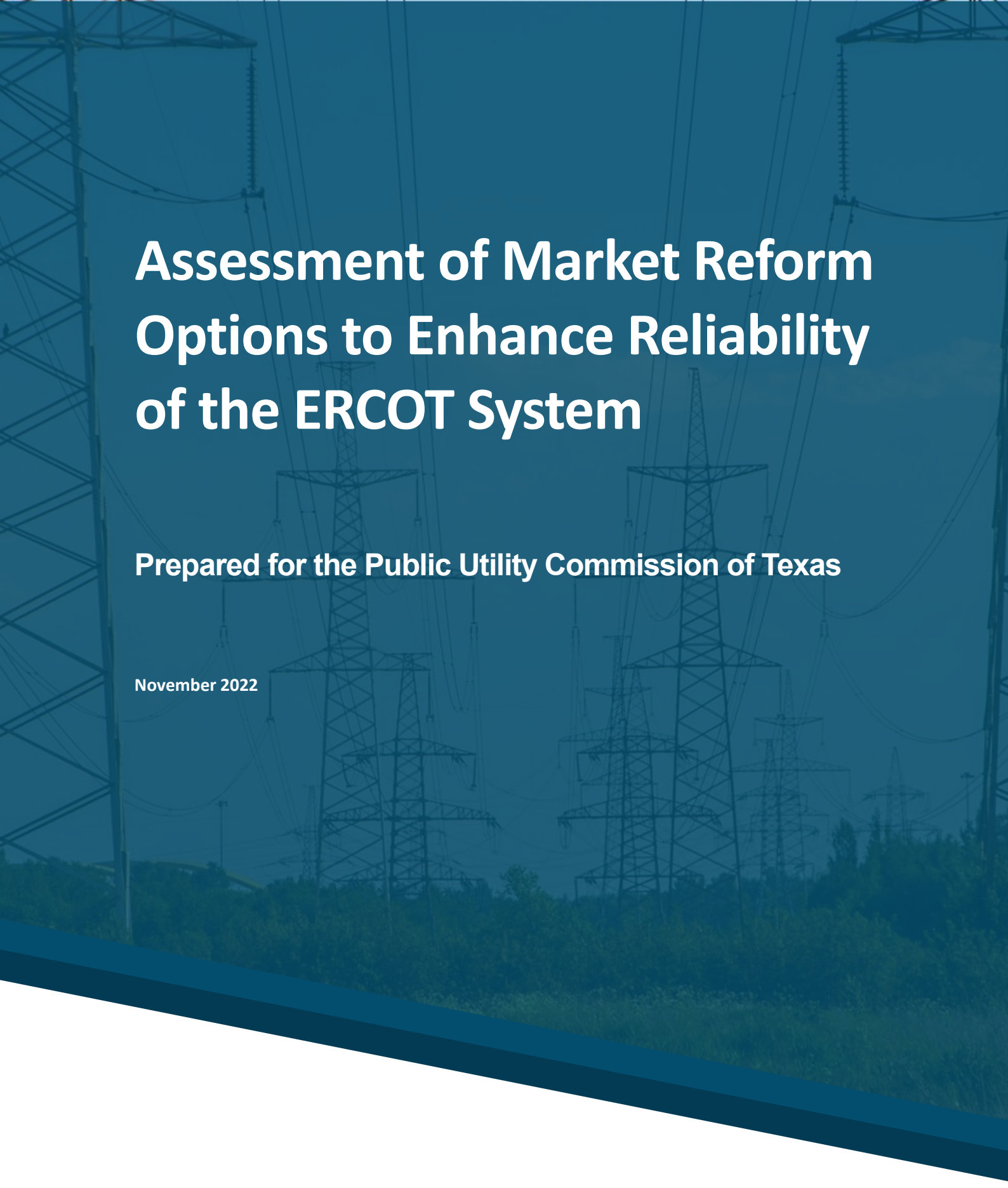

Assessment of Market Reform Options to Enhance Reliability of the ERCOT System

Prepared for the Public Utility Commission of Texas

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Acronyms

Acronym	Definition
4CP	4 Coincident Peak
AS	Ancillary Services
BRS	Backstop Reliability Service
CDR	Capacity, Demand and Reserves (ERCOT Report)
CONE	Cost of New Entry
CT	Combustion Turbine
DEC	Dispatchable Energy Credit
ECRS	ERCOT Contingency Reserve Service
ERS	Emergency Response Service
EFOR	Equivalent Forced Outage Rate
EFORd	Equivalent Forced Outage Rate on Demand
ELCC	Effective Load Carrying Capability
ERCOT	Electric Reliability Council of Texas
EUE	Expected Unserved Energy
E3	Energy and Environmental Economics, Inc.
FFRS	Fast Frequency Response Service
FRM	Forward Reliability Market
IMM	Independent Market Monitor
ISO	Independent System Operator
LOLE	Loss of Load Expectation
LOLH	Loss of Load Hours
LOLP	Loss of Load Probability
LR	Load Resource
LSE	Load Serving Entity
LSERO	Load Serving Entity Reliability Obligation
ORDC	Operating Reserve Demand Curve
PBPC	Power Balance Penalty Curve
PCM	Performance Credit Mechanism
PRD	Price Responsive Demand
PUCT	Public Utility Commission of Texas
PUNS	Private Use Networks
REC	Renewable Energy Credit
RPS	Renewable Portfolio Standard
RRS	Responsive Reserve Service
SERVM	Strategic Energy & Risk Valuation Model
TDSP	T&D Service Providers

Glossary

- **1-Day-in-10-Years:** Shorthand for a common electricity industry reliability standard that specifies that an electricity system must have sufficient generating resources to serve load all but one day every ten years. This standard is equivalent to 0.1 days per year loss of load expectation.
- **Accreditation:** The process by which a generating unit is assigned a value that quantifies its contribution to system reliability. An accredited generator has *Effective Capacity* (see definition below).
- **Ancillary Services:** The services necessary to support grid stability and security, including real-time operating reserves that maintain reliability despite expected and unexpected fluctuation in system demand and supply.
- **Backstop Resources:** Resources that are held in reserve by ERCOT (i.e., not active participants in the electricity market) and are utilized to maintain reliability if needed due to insufficient other resources.
- **Bilateral Procurement:** Procurement executed through individual contracts between a generator and an LSE.
- **Capacity Factor:** The ratio of the electrical energy produced by a generating unit for the period considered relative to the electrical energy that could have been produced at continuous full power operation during the same period.
- **Centralized Procurement:** Procurement executed through a centralized auction for all supply and demand in the market.
- **Cost of New Entry (CONE):** The levelized all-in cost of a new resource, including capital expenditures, financing costs, and fixed operations and maintenance. This total cost is often normalized by generator capacity (kW) and then amortized over the life (years) of the resource into a final metric of "dollars per kilowatt per year" ($/kW-yr). In this study, CONE is used primarily in reference to the marginal capacity resource (calculated through modeling to be a natural gas combustion turbine).
- **Cost of Retention:** The levelized go-forward costs of an existing resource. In this study, the value refers to the levelized go-forward cost of the reference marginal retention resource (coal).
- **Demand Response:** Reductions in electricity consumption by consumers in response to economic signals, with the goal of reducing usage during high reliability risk hours.
- **Dispatchable Energy Credit (DEC):** A credit that is generated when energy or ancillary services are produced/provided from an eligible dispatchable resource. In this study, an eligible dispatchable resource must be able to start in 5 minutes or less, have less than a 9,000 Btu/kWh heat rate, and be able to dispatch continuously for 48 hours or more.
- **Equivalent Forced Outage Rate on Demand (EFORd):** Measure of the probability that a generating unit will be forced offline (not be available due to forced outages or forced derating) when there is demand on the unit to generate; This is an input in reliability modeling and an important determinant of a resource's Effective Capacity.

Also available as part of the eCourse
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