

ERCOT Presentation to Senate Committee on Energy and Natural Resources

February 2, 2011 Grid Emergency Events

John Dumas, Director of Wholesale Market Operations

February 21, 2011

ERCOT Region: 22 Million Texans

75% of Texas land area 200,000 square miles

85% of Texas load

- 65,776 MW peak demand Set Aug. 23, 2010
- 57,282 MW winter peak demand Set Feb. 10, 2011
- 319 billion kilowatt-hours energy produced, 2010

\$32 billion market

22 million Texans served ~6.5 million households in competitive choice areas

ERCOT does not include:

- El Paso area
- Texas Panhandle
- Northeast Texas
 - Longview, Marshall and Texarkana
- Southeast Texas
 - Beaumont, Port Arthur, and the Woodlands





A record-breaking arctic front was approaching prior to February 2, 2011





ERCOT's Pre-Event Preparation

Jan 28-31: Transmission outages – cancelled, withdrawn or delayed

10-345 kV lines

27-138 kV lines

3-69 kV lines

2-345/138 kV autotransformer

1-138/69 kV autotransformer

Jan 31 at 6:30am:

Operating Condition Notice issued, "A cold front is approaching with temperatures anticipated to be in mid to low 18 degree range and maximum temperature expected to remain near or below freezing impacting 50% of more of major metropolitan areas. Estimated starting time Tuesday 2/1/11 09:00".

Feb 1 before midnight:

13 Generating Resources were committed in the Reliability Unit Commitment process.

Feb 1

Jan 31 at 4:25am:

Requested MCSES 8 to be on-line by 10:00 on Feb 1; this generator has a long start-up lead time.

Jan 31 at 10:30am:

Requested LHSES 1 on-line burning oil.

Feb 1 at 09:05am:

Advisory issued, expecting temperatures in teens to low 20F; maximum temperatures near or below freezing impacting 50% or more of major metro areas.



JAN 28

ERCOT preparations





More than 8,000 megawatts (MW) of generation unexpectedly dropped offline overnight





The ERCOT System responded as expected



Frequency vs. Load Shed



The generation loss was system-wide and covered units of all ages and multiple types of fuel





- ERCOT was advised that some units could generate more power if additional natural gas became available to the unit or if generators could temporarily surpass air emissions limits.
- PUC and RRC Commissioners and Staff worked cooperatively to assess specific situations and work with industry on natural gas issues.
- PUC and TCEQ Commissioners and Staff worked with ERCOT to develop a plan for encouraging addition of available generation resources to the ERCOT electric grid.



ERCOT will continue to review the actions leading up to this event and the handling of event itself.

- ERCOT is providing information to assist in the investigations currently underway.
- ERCOT will be an active participant in the discussion related to the adequate weatherization of generation units.
- ERCOT will work with transmission providers to study the potential use of advanced meters in selective load reduction.
- ERCOT is reviewing all communications policies related to grid emergencies.
 - ERCOT has already implemented changes that will provide automated notice to the State Operations Center (SOC) and the PUC.
 - ERCOT will implement a "phone bank" that will temporarily increase staff during emergency situations to respond to incoming calls.

