

Energy Annex (ESF-12)

State of Texas Emergency Management Plan

March 2017

Table of Contents

- Introduction 3
- Overview and Purpose 4
- Concept of Operations 6
- Strategy 1: Coordinate Energy Operations 7
 - Local Authority 7
 - State Operations Center (SOC) Support 7
 - Mutual Aid..... 10
- Strategy 2: Monitor Energy-Centric Critical Infrastructure and Respond to Disruptions..... 12
 - Electric Infrastructure 12
- Strategy 3: Restore and Sustain Essential Services to Maintain Community Functionality..... 18
 - Electrical Energy Assessment..... 18
 - Electrical Energy Restoration 19
 - Portable Power Generation 21
 - Pipeline Restoration and Recovery..... 21
- Strategy 4: Provide Response Resources..... 22
- Summary of Responsibilities 24
 - Common Stakeholder Responsibilities 24
 - Stakeholder-Specific Responsibilities 24
- Authority 28
- Record of Changes 29
- Contributors 30
- Appendix A: Energy and Utilities Action Guide 2
- Appendix B: Energy and Utilities Terms and Descriptions 3

Introduction

This document is an annex to the *State of Texas Emergency Management Plan*, which responds to state and federal laws, policies, doctrine and guidelines as described below.

In responding to federal emergency response doctrine and, specifically, the National Response Framework (NRF), the *State of Texas Emergency Management Plan* (State Plan) takes into account the needs of the whole community of citizens likely to be affected by an incident or event that requires a state-level coordinated response.

The State Plan complies with Homeland Security Presidential Directive 5 (HSPD-5) “Management of Domestic Incidents” and Presidential Policy Directive 8 (PPD-8) “National Preparedness,” the “National Preparedness Goal,” and Texas Executive Order RP40, which mandates the adoption of the National Incident Management System (NIMS) as the “declared State standard for incident management.”

The State Plan is composed of a Basic Plan, functional annexes, and hazard annexes. The State Plan responds to **Texas Government Code, Section 418.042**, which directs the Texas Division of Emergency Management (TDEM) to “prepare and keep current a comprehensive state emergency plan.” The plan outlines the “coordination of federal, state, and local emergency management activities.”

Further, this annex sets forth cross-agency coordination responsibilities as agreed to by Emergency Management Council (EMC) agency representatives in response to their mandate, **Texas Government Code, Section 418.013**, to “assist the division [TDEM] in identifying, mobilizing, and deploying state resources to respond to major emergencies and disasters throughout the state.” The State Plan is designed to integrate with other state agency or entity plans and annexes when they are included as subordinate appendices or attachments to the State Plan.

All sections of the plan contain links to related information. For an explanation of the acronyms, abbreviations, and terms in this document, refer to the State of Texas Acronyms and Terms (STAT) Book, which can be found online at [\[unformatted url\]](#).

This document is intended to provide guidance and is not prescriptive or comprehensive. Use judgment and discretion to determine the most appropriate actions at the time of an incident.

Overview and Purpose

Successful response operations assist with the rapid restoration of essential functions while protecting residents from disaster. This planning document defines a standardized statewide approach to energy operations for disasters.

Goal

Define the organization, responsibilities, and procedures of the state as they relate to energy incident preparedness, mitigation, response and recovery to meet the needs of the whole community.

Objectives

- Promote the methods to coordinate energy recovery operations.
- Outline the major functions and responsibilities for agencies and organizations involved in energy management in the State of Texas.
- Provide guidance for obtaining emergency energy for critical operational functions and facilities until energy service can be restored.
- Explain methods and procedures for sharing situational information through established channels.
- Address information for how the resources are obtained and distributed.

Audience

- State Emergency Management Council representatives
- State Operations Center (SOC) personnel
- Disaster District Committee (DDC) personnel
- Local jurisdiction emergency management personnel
- Federal energy stakeholders
- Elected officials
- Texas State Energy Conservation Office

Planning Assumptions

- This annex is applicable to all locations and to all agencies, organizations and personnel with energy management responsibilities.
- Incidents are typically managed at the lowest jurisdictional level possible.
- Local community and regional energy system providers restore their individual systems according to their established plans and procedures.
- Energy providers may seek restoration assistance from other energy providers, contracts and assistance from government entities.
- The loss of energy infrastructure or a significant curtailment of service may have immediate and long-term effects on a community or region of the state.
- The prompt restoration of energy production and distribution systems is vital to the well-being of individual citizens and the economy of Texas.
- Restoration activities commence immediately, weather and access permitting, upon indication of service disruption. The state acts in a support role to assist utilities, as required.

- Most critical infrastructure sites in the state are privately owned and operated, and many have their own security forces. To secure these sites, the power of public-private partnerships must be maximized to ensure that individual citizens, private security forces, commercial security measures and governmental assets cooperate in every aspect of safeguarding critical infrastructure.

Concept of Operations

Energy activities in the State of Texas vary widely in type, size and complexity. This section outlines the general concept of operations for the state's planned response in support of energy operations.

When an energy disruption occurs, energy providers and suppliers respond using available resources and capabilities. To cope with especially large energy curtailment, energy providers and suppliers rely on mutual aid agreements to conduct timely restoration activities. As energy disruption expands, state resources may be required.

Energy disruption preparation, response and recovery may involve multiple agencies and partners. The Texas Division of Emergency Management (TDEM), the Public Utility Commission of Texas (PUC), the Railroad Commission of Texas (RRC) and other emergency management council agencies work closely to respond to energy emergencies of state significance. The PUC may take any action provided by Texas statute and rule necessary to facilitate restoration of energy in the State of Texas.

As mandated by Texas Government Code 418, the Texas Division of Emergency Management (TDEM) is responsible for preparing and maintaining the *State of Texas Emergency Management Plan* (State Plan). TDEM designates a primary entity to support the planning process for each functional or hazard annex that comprises the State Plan. A primary entity has significant responsibility, resources and capability for this function. The Public Utilities Commission (PUC) is designated the primary entity to assist in this planning effort. Additional support entities are included in the planning effort and provide their knowledge about capabilities, coordination and resources for the annex.

Strategies

This section presents the state's strategies used for energy response, which include:

Strategy 1: Coordinate Energy Operations

Strategy 2: Monitor Energy-Centric Critical Infrastructure and Respond to Disruptions

Strategy 3: Restore and Sustain Essential Services to Maintain Community Functionality

Strategy 4: Provide Response Resources

Each strategy describes an important piece of the state-level energy response in Texas. Additionally, the appendices and attachments to this annex provide supplemental detail on specialized energy actions.

Strategy 1: Coordinate Energy Operations

This section outlines coordination mechanisms used to support emergency energy operations.

During a disaster, coordination across all levels of government is necessary to effectively conduct energy operations. This section describes how energy operations are coordinated in the state of Texas, beginning with the local response, moving through the regional and state response and onto the federal response, if warranted.

Local Authority

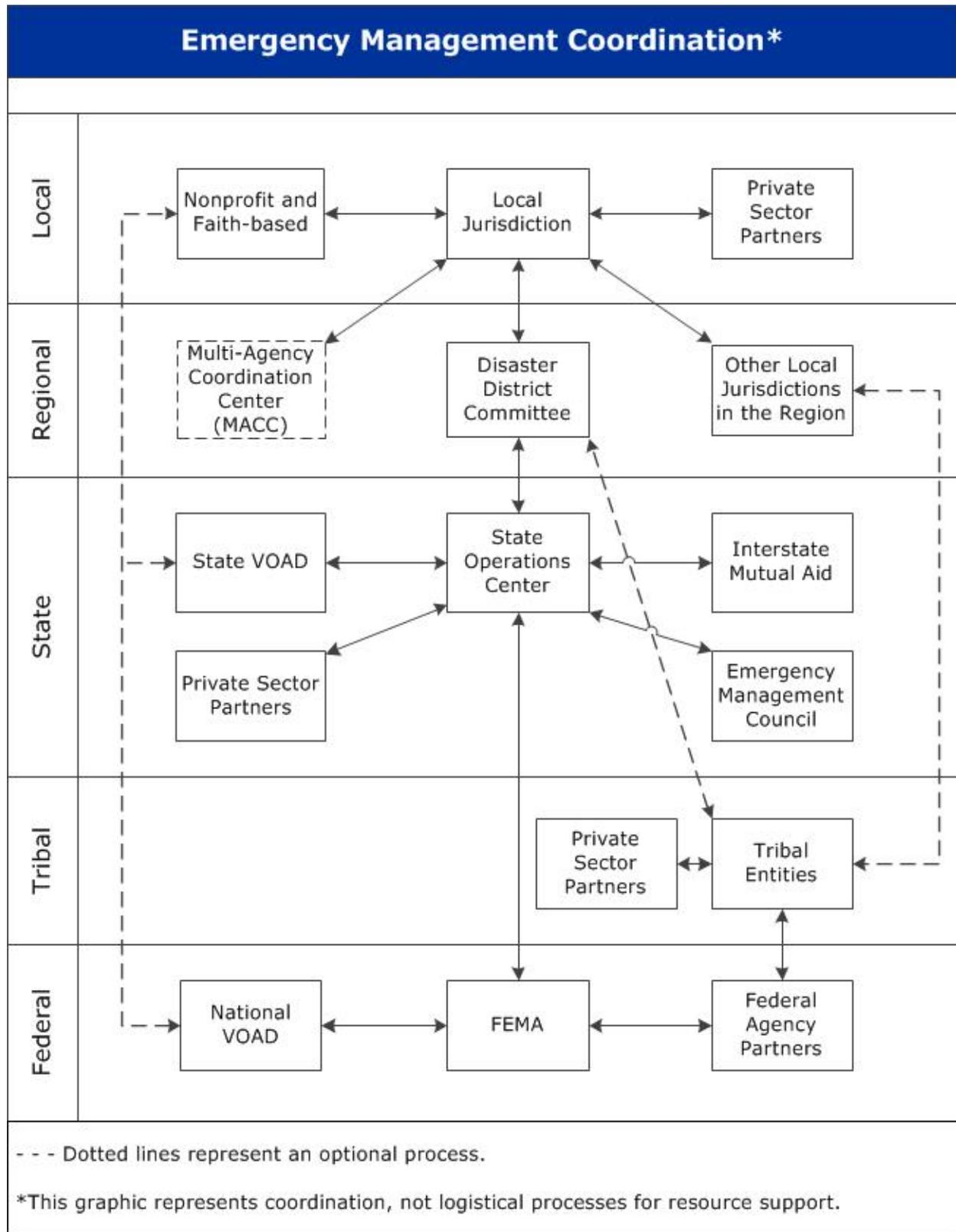
A disaster or event occurs at the local level and should be coordinated as such. Local elected officials direct emergency operations within their jurisdictions and have primary responsibility for coordinating energy operations. Local jurisdictions can request additional assistance from Disaster District Committees (DDC) when they anticipate a depletion of resources, identify a gap in resources or exhaust resources.

State Operations Center (SOC) Support

TDEM, a division of DPS, operates the SOC year-round, 24 hours a day, communicating critical information via multiple systems to partner organizations at all levels of government. If a DDC needs additional resources, the DDC Chair requests assistance from the SOC using a State of Texas Assistance Request (STAR) form. The SOC processes DDC requests and provides resources to fill unmet needs using state agency capabilities, voluntary organizations and contract services.

If the SOC is not able to provide resources to fill unmet needs, TDEM may submit mutual aid requests to other states or request federal assistance from the Federal Emergency Management Agency (FEMA), which coordinates federal resources during disasters.

The following diagram represents the emergency management coordination process from the local through the federal level.



Public Utility Commission of Texas (PUC)

The PUC's Emergency Management Response Team (EMRT) is the information interface between state government and electric utilities during emergencies. The EMRT's main roles include:

- Conveying outage and service restoration information from electric utilities to state government;
- Conveying service restoration priorities (hospitals, water treatment facilities, etc.) from state government to electric utilities; and
- Facilitating the clearance of downed power lines in key areas and facilitating entry of electric utilities into disaster areas

The EMRT is prepared to provide 24-hour coverage at the SOC during major electric service disruptions and other emergencies. The EMRT's lead is responsible for scheduling team members and overseeing the day-to-day operations of the EMRT at the SOC.

All requests for energy assistance at the DDC level are first directed to the affected electric utilities for resolution. If not resolved, DDCs may submit a STAR to the SOC. TDEM may fill the STAR with state energy resources based on situational requirements and requests from local jurisdictions. The PUC does not own any energy resources. However, the PUC can fulfill STARS that are information based and assist in issue resolution.

Although PUC substantive rules set certain priorities for restoration, the electric utilities have the responsibility to plan and implement procedures necessary to restore power to their customers.

The PUC requests that electric utilities take the following actions to assist with situational awareness and response efforts:

Prior to Storm or Event

- Update emergency contacts within 30 days of a change.
- File emergency operation plans with PUC within 30 days of substantive change.

During the Storm or Event

- Report number of outages and expected restoration plan/time when requested so that information can be passed on for a common operating picture.
- Report on specific/critical facility restoration if requested.
- Provide utility presence at the SOC if requested.

After the Storm or Other Event

- Continue to update information on outages and restoration efforts.
- Communicate any need for assistance to clear roads or other obstacles.
- Work with PUC, TXDOT, and Initial Reentry Assessment Team (IRAT) to identify downed power lines.
- Provide utility presence at the SOC if requested.

Depending on the impact of an incident on the state's electric system, the PUC's EMRT may also request that a representative from the Electric Reliability Council of

Texas (ERCOT) report to the SOC to work with the PUC and other state agencies to help return the state to normal conditions in a safe and efficient manner.

During and after a storm or other event, the PUC uses geographical information systems (GIS) maps to track and monitor electric power outages. The PUC's GIS tool also has the ability to overlay the service area boundaries of investor-owned utilities, electric cooperatives and municipally owned electric utilities with Doppler radar and National Weather Service watches and warnings.

Railroad Commission (RRC)

The Railroad Commission of Texas (RRC) personnel assigned to the SOC during activation provide information regarding their organization's operations and can access resources such as emergency contact lists and geospatial maps that include critical infrastructure facilities.

The RRC SOC representative coordinates emergency activities with RRC Regional and District Office personnel located in the field throughout the state. Designated District/Region office personnel maintain contact with the RRC's SOC representative during an emergency. RRC may be available to assist local governments and DDCs in the field.

The RRC monitors the production and pipeline activities of oil, gas and hazardous liquids. RRC staff and the SOC representative can work with local governments and partner agencies to determine how much and what type of energy source is available and whether resources can or should be reallocated from non-affected areas to affected areas.

Texas Energy Reliability Council (TERC) is a team of natural gas industry representatives which work closely with the RRC's Liaison and industry operators.

The RRC Oversight and Safety Division Director is the liaison to TERC for emergency operations. The liaison interfaces with the energy providers and the RRC SOC representative to provide real time information of an event.

Mutual Aid

Mutual aid agreements with neighboring jurisdictions may allow local jurisdictions to manage incidents without state assistance.

If resources are not available locally or through mutual aid agreements, the SOC may assist in coordinating resources upon receipt of a STAR. Requests for energy resources to participate in emergency operations are routed to the PUC through the appropriate DDC.

If an incident exhausts state energy resources, support may be requested from other states through the Emergency Management Assistance Compact (EMAC) or from the federal government through the Federal Emergency Management Agency (FEMA). Assistance requests originate from the SOC, but PUC may assist in preparing energy operations assistance requests.

Interstate Emergency Response Support Plan (IERSP)

The IERSP is a collective agreement between the five FEMA Region VI states to provide immediate response and support using a unified command structure. The IERSP operates under the Emergency Management Assistance Compact (EMAC) with other states.

The IERSP is used to expedite the provisions of assistance from member states to those states affected by a disaster in anticipation of a federal disaster declaration and to facilitate and coordinate a regional response. The IERSP is also used to provide better visibility and allocation of state resources within the region during response and recovery efforts in a catastrophic event.

Strategy 2: Monitor Energy-Centric Critical Infrastructure and Respond to Disruptions

This section outlines the monitoring of on-going energy operations and measures taken in the event of energy supply emergencies.

The Public Utility Commission of Texas (PUC) works cooperatively with the Railroad Commission of Texas (RRC) and is aided by the Federal Department of Energy and other agencies that coordinate Emergency Support Function (ESF)-12 to provide recommendations to the Governor, State Director of Homeland Security, and the Assistant Director of the Texas Division of Emergency Management (TDEM) for possible actions to prepare for or respond to disruptions of energy supplies.

Effective energy assurance and emergency response requires an ongoing understanding of the current and projected energy supply condition. To achieve this understanding, the PUC monitors energy supplies, shortages and recovery efforts. The RRC and other entities monitor oil and gas production and pipeline transportation.

Electric Infrastructure

About 90 percent of the state's electric load is in the ERCOT region and over 550 electric power generating units are in the ERCOT region. Approximately 53% of the generation capacity in the ERCOT region comes from natural gas, 22% from coal, 18% from wind, and 6% from nuclear sources. Approximately 1% of generation capacity comes from solar, hydroelectric and biomass resources. Texas generates and consumes more electricity than any other state.

Electric System Emergencies

Electric system emergencies may be caused by internal failure of the electric system or failure caused by external sources.

- External-Damage to or destruction of electrical systems due to natural catastrophes or human-caused events.
- Internal-Failure of the electric system due to electrical, mechanical, or control system problems that disrupt the operation of generation or transmission facilities or the inability of facilities to meet demand.
- Electric system emergencies can result in customer outages that may include blackouts.

Electrical Energy

Although natural gas and coal are the most commonly used resources to generate electricity in Texas, wind, nuclear, solar, and hydroelectric resources are also used to generate electricity.

Nuclear Energy

There are two nuclear generation facilities in Texas, each with two generating units: the South Texas Project Electric Generating Station and the Comanche Peak Nuclear Power Plant.

To mitigate electric system emergency situations resulting from a generation outage or damage to utility infrastructure, ERCOT:

- Plans and operates the system so that loss of a single transmission line or generator causes no major problems;
- Reserves enough generation and load resource capacity to maintain system frequency when demand and generation output vary, up to the loss of the ERCOT region's two largest generation units (currently, units at the two nuclear plants); and
- May respond by reducing demand to protect the system (localized or system wide rotating outages) to prevent emergency situations from becoming more severe.

Alternatively, when a nuclear plant does not or cannot safely shut down in an emergency situation, electric utilities will put priority on restoring any damaged transmission infrastructure serving the plant to restore the integrity of the transmission system.

Wind and Solar Energy

Wind and solar are intermittent generation resources. Wind makes up approximately 18 percent of energy providers' total generation capacity, but because of its intermittent nature, contributes, on average, 12 percent to total energy consumption. Solar energy makes up less than one percent of energy providers' total generation capacity and total energy consumption.

Energy providers respond to the intermittent nature of these renewable resources by maintaining sufficient generation reserves and load resource capacity. Energy providers maintain the electric grid so that loss of power from wind or solar generation does not impact reliable delivery of power to customers.

Hydroelectric

Texas generates very little electric power from hydroelectric resources. Loss of power from hydroelectric generation poses little issues to an adequate and reliable supply of power.

Electrical Grids in Texas

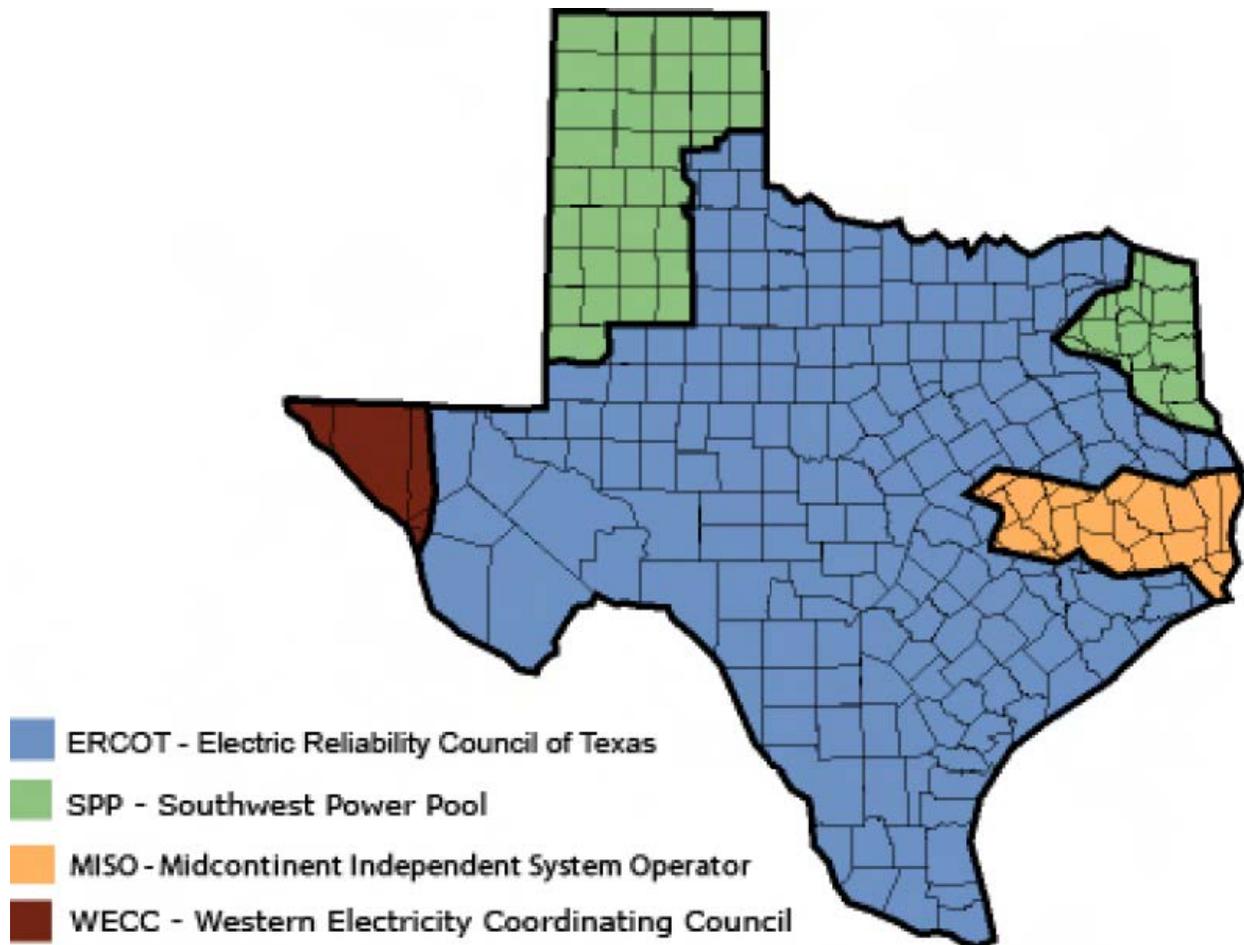
Energy providers within the state monitor the grid in real time to manage the flow of electric power to resolve capacity shortfalls and transmission congestion and to maintain system reliability.

ERCOT is responsible for assuring reliable electric power within its system, which covers approximately 85 percent of the land area in Texas and serves approximately 90 percent of the state's demand for electricity¹.

Neighboring regional transmission organizations, the Midcontinent Independent System Operator, Inc. (MISO) and the Southwest Power Pool, Inc. (SPP), and a regional entity, the Western Electricity Coordinating Council (WECC), are

¹ For more information, refer to [ERCOT Maps](#)

responsible for assuring reliable power in the remainder of the state. The figure below shows the ERCOT region and the other electric grids that serve the state.²



Electric Outage Monitoring

The Texas Natural Resource Information System (TNRIS) hosts the PUC's geographical information system (GIS) maps of utility service area boundaries, links to utility outage and restoration information and other pertinent information. The PUC uses GIS maps to track and monitor outages in a given area across the State of Texas during emergencies. The GIS tool has the ability to overlay the service area boundaries of investor-owned utilities, electric cooperatives and municipally owned electric utilities with Doppler radar and National Weather Service watches and warnings. In addition, there are links to specific utility outage information that are updated in real time. This information is disseminated to SOC personnel to be used in various ways.

PUC receives information from MISO, SPP, WECC, and ERCOT on electrical outages within the state. PUC can deliver emergency alert communications to the SOC that

² For more information, refer to [Understanding the Grid](#).

it receives from MISO or SPP. In most instances, electric utilities serving customers in MISO and SPP will inform the PUC of emergency situations occurring in those regions. WECC is a Reliability Entity that coordinates and promotes bulk electric system reliability. Because WECC is not responsible for real time operation of the grid, it does not deliver emergency alerts. In the WECC region, El Paso Electric Company will inform the PUC of emergency situations in impacting the utility and its customers. The PUC will then pass that information on to the SOC.

It is the responsibility of the utility to deliver electricity to their customers in these regions. It is the responsibility of MISO, WECC and SPP to assure reliability of the grid.

Balancing the Grid

There are 3 interconnections or power grids in the lower 48 states, ERCOT, the Eastern Interconnection, and the Western Interconnection. For the most part, these interconnections operate independently from each other with limited transfers of power between them. Neighboring regional transmission organizations, MISO and SPP are a part of the Eastern Interconnection. WECC is a Regional Entity located in the Western Interconnection. ERCOT, SPP, MISO and WECC are responsible for assuring reliable power in the portion of the State that they serve.

ERCOT currently has five asynchronous ties or connections to outside grids. ERCOT has two connections to the Eastern Interconnection and three ties to the Mexican system. These ties allow ERCOT and the connecting grids to exchange power in emergency situations and for entities in the opposing grids to trade power on a commercial basis. In addition, a utility in the MISO region in conjunction with two utilities in the ERCOT region, operate two switching stations that allow a small amount of power to be physically transferred from one region to another during emergency situations.

In emergency situations, utilities will contact the local emergency operations center (EOC) and the PUC. When the SOC is not activated, the SOC may be updated by the EOC and the PUC. When the SOC is activated, the PUC provides situational reports to the SOC on a regular basis.

Pipeline Infrastructure

Texas has the largest pipeline infrastructure in the nation, with more than 425,939 miles of pipeline, representing about one sixth of the total pipeline mileage of the entire United States. Texas' pipelines are divided into the categories of natural gas and LP-gas distribution lines, hazardous liquid and natural gas transmission lines, intrastate production and gathering lines leaving a lease, and interstate lines. Interstate lines in Texas are under the jurisdiction of the US Department of Transportation (DOT) and the Texas Railroad Commission will be the liaison with the US DOT.

Railroad Commission of Texas (RRC)

The Railroad Commission of Texas (RRC) monitors oil and gas production, pipeline distribution, incidents, and remediation of hazardous liquid spills.⁷ RRC regulates intrastate pipelines and the production of oil and natural gas.

The RRC requires intrastate operators to have, maintain, and utilize their emergency operations plan.

Texas Energy Reliability Council (TERC) liaison, SOC representative and District and Regional Office personnel assist operators of oil and gas wells and pipeline facilities with the timely dissemination of vital emergency information and coordinate available resources for recovery operations.

Demand Management

The Assistant Director of TDEM, State Director of Homeland Security, and the Governor have authority to order cutbacks in the use of natural gas in state-owned facilities and to activate a campaign to encourage voluntary reductions in consumption by residential and other customers through public service announcements.

Outages, Damages, Shortages and Restoration

Extended electrical outages can directly impact other utility systems including water and wastewater systems and natural gas and petroleum processing facilities. Extended shortages or disruptions can cause curtailment of natural gas or liquid fuels that may directly impact electric power generation or transportation fuel supplies.

The RRC monitors, evaluates and distributes information pertaining to outages, damages, shortages and restoration time on natural gas and hazardous liquid pipelines to the SOC. TERC monitors supplies during an emergency and furnishes information about supplies and supply shortages to the RRC liaison. Working with the RRC liaison, TERC facilitates the voluntary allocation of natural gas resources to ensure that high priority needs of Texas consumers are met.

Short Duration Shortages

Short-term recovery does not include the reconstruction of the built environment, although reconstruction may commence during this period. For natural gas supply shortages of short duration, voluntary measures are coordinated by TERC and affected utility providers to reduce natural gas consumption.

Long Duration Shortages

Long-term recovery is the process of returning the community, to the extent possible, to the conditions that existed prior to the event, preferably while taking the opportunity to mitigate against future disasters.

In the event of an extended duration natural gas supply shortage, TERC, the RRC liaison, RRC Emergency Communications Coordinator (ECC), RRC SOC representative and federal ESF #12 partners present recommendations to the

⁷ For more information, refer to the [Transportation Annex \(S\)](#).

Governor, the State Director of Homeland Security and the Assistant Director of TDEM. These recommendations focus on the necessary actions the state should take to respond to the shortage.

These authorities take action to allocate supplies as required. Emergency actions may include:

- Diverting producer and pipeline supplies to specific areas of need.
- Directing storage operators to increase delivery rates.
- Directing large industrial customers or electric generation plants to cut back on their gas consumption to allow supplies to go to higher priority users.

Natural Gas Curtailments

Natural gas providers will follow the curtailment plans they are required to file with the RRC Gas Services Department.

A curtailment plan describes the order in which natural gas services are curtailed to customers or classes of customers in the event of a natural gas supply disruption. Gas utilities are required to report to the Gas Services Department a curtailment of natural gas to a customer either before an actual curtailment occurs or within two hours after curtailment.

Liquefied or Compressed Gas

The RRC regulates transportation and storage of Liquefied Petroleum Gas (LPG), Liquefied Natural Gas (LNG) and Compressed Natural Gas (CNG) fuels. In the event of an emergency, TDEM may require state facilities to temporarily switch to these fuels where possible.

In support of TDEM's actions, the RRC may:

- Assist in identifying the location and availability of these fuels within an affected area.
- Issue temporary waivers to out of state LPG suppliers to make emergency deliveries of LPG possible, after a governor's disaster declaration.

Strategy 3: Restore and Sustain Essential Services to Maintain Community Functionality

This section provides information on the restoration of energy to affected areas.

Prevention and Mitigation of Electric System Emergency Situations

Utilities and Power Generation Companies

Investor-owned electric utilities are required by PUC to maintain current Storm Hardening Plans that provide for the implementation of strategies to increase the ability of their transmission and distribution facilities to withstand extreme weather conditions.

Investor-owned electric utilities, river authorities, electric cooperatives, and power generation companies are required by the PUC to maintain current Emergency Operations Plans (EOPs) for emergency response and restoration of disrupted service. A number of municipally-owned electric utilities voluntarily submit EOPs to the PUC.

Electric Reliability Council of Texas (ERCOT)

ERCOT continuously maintains situational awareness of the electric grid. To prevent electric system emergencies or to prevent electric emergencies from worsening, ERCOT has developed the following operational risk management and mitigation strategies and responses:

- ERCOT plans and operates the system so that loss of a single transmission line or generator causes no problems and additional contingencies cause no major problems.
- ERCOT reserves enough generation and load resource capacity to maintain system frequency when demand and generation output vary, up to the loss of the ERCOT region's two largest generation units.
- ERCOT may prevent emergency situations from becoming more severe or aid in restoration efforts by:
 - Manually reducing demand to protect the system (localized or system wide rotating outages).
 - Using automated protection systems to reduce system wide demand to provide a safety net when frequency drops to extremely low levels.

Electrical Energy Assessment

Timely damage assessment is vital in estimating restoration time for energy infrastructure. Restoration timeframes are a major factor in determining the extent of emergency operations support needs and planning for resource allocation.

The state may assist utilities in obtaining and analyzing initial damage assessments of affected areas.

Initial Reentry Assessment Team (IRAT)

The Texas Division of Emergency Management (TDEM) deploys teams of subject matter experts and response personnel from multiple organizations to support Disaster District Committees (DDC) in quickly assessing response needs following hurricane strikes. The State Operations Center (SOC) coordinates the deployment of IRATs into impacted jurisdictions to conduct rapid damage assessments and works with the DDC for the prioritization and restoration of emergency services and identify the additional resources necessary to support local operations.

Utilities

Utilities that own damaged infrastructure are the primary responders in emergency events that impact the electric grid. Each utility has an EOP and is in the best position to assess damage to its infrastructure, formulate a plan for restoration and to execute the plan.

Redundancy and Resiliency

The electric grid's redundancy assists in resilience when there is an outage due to a hazard. Energy providers constantly monitor the status of the electric grid to balance load, and has the ability to use reserves if there is a shortage in any certain region. Utilities also have mutual aid agreements with in-state and out-of-state utilities to send resources, material and workers to repair damaged equipment. The PUC communicates with state utilities and energy providers to relay information about outages, and repair status to the SOC.

Electrical Energy Restoration

Electric utilities are responsible to make all repairs necessary to restore power after damage to utility infrastructure. This may require that utilities hire contract crews, and seek assistance through mutual aid agreements. Utilities may need assistance from the PUC to secure re-entry authorization waivers for working in the impacted area and to have blocked roadways cleared of debris.

Energy providers continuously monitor the electric grid and have systems in place designed to preserve system integrity and reliability. Energy providers are in continuous communication with utilities and work to maintain reliability and integrity of the grid during restoration of power.

Utility Mutual Aid Agreements

Utilities maintain both mutual aid agreements with utilities inside and outside Texas and contracts with vendors to make repairs in the affected area. Utilities work with their grid operators to minimize the impact of the outages to the grid and to restore the system as efficiently as possible.

Prioritization

In the event of a national emergency or local disaster resulting in disruption of normal electric service, a utility may, in the public interest, interrupt service to other customers to provide necessary service to civil defense or other emergency service entities on a temporary basis until normal service to these agencies can be restored.

A utility is required by statute and rule to give the same priority that it gives to a hospital in the utility's emergency operations plan (EOP) for restoring power after an extended power outage to an assisted living facility, a facility that provides hospice services, and a nursing facility.

A utility may use its discretion to prioritize power restoration to a facility after an extended power outage in accordance with the facility's needs and with the characteristics of the geographic area in which the power must be restored.

The PUC may also relay SOC priorities for restoration to the utilities.

Interconnections

On rare occasions, damage to infrastructure can necessitate a temporary interconnection between a utility inside ERCOT and one outside ERCOT in order to provide power to a critical facility or group of customers, stabilize conditions on either grid, or to otherwise solve a serious outage condition. The two utilities must include ERCOT and the appropriate reliability organization in the discussions, confirm that the integration is technically feasible, and file the appropriate waivers with the Federal Energy Regulatory Commission (FERC) and the Department of Energy (DOE). The PUC may be asked to assist in obtaining the appropriate federal authorizations.

Utility Assistance Requests

If local jurisdictions are unable to coordinate utility provider requests, local jurisdictions may relay requests to the Disaster District Committee (DDC) for special assistance. These requests may include vehicle waivers at inspection stations for personnel reentering affected areas, assistance in locating lodging for responders, and assistance in locating and securing equipment staging areas.

ERCOT Black Start Restoration Plan

ERCOT continuously monitors the electric grid and has systems in place designed to preserve system integrity and to prevent cascading outages. In the unlikely event that a blackout occurs despite systems in place to prevent it, ERCOT maintains a black start restoration plan to restart the ERCOT system. ERCOT conducts an annual black start drill with transmission operators and generating entities to test this plan.

Communication

Widespread Power Outages

When an emergency situation results in a widespread power outage, the PUC opens direct lines of communication with ERCOT and impacted transmission providers. PUC can produce reports to assist the SOC in determining restoration priorities and state resource allocation. The EMRT may communicate SOC requests for priority service restoration at critical facilities to utility providers.

The public can access power outage and restoration information from their electric utility. Many utilities maintain outage maps, restoration timelines and other emergency information on their websites. In addition, the PUC's media contact may provide timely reports and updates to the public during energy emergency events.

When ERCOT declares an energy emergency the SOC is notified via email and telephone followed by a press release. Once notification is received the SOC will send that notification out state wide via the SOC's messaging capabilities.

ERCOT Energy Emergency Alert Communications

In order to convey system conditions to market participants and the PUC, ERCOT issues a series of notices. Prior to declaring an emergency, ERCOT may issue an Operating Condition Notice (OCN) to give notice of a forecasted power shortage, a Control Room Advisory, a Control Room Watch or a Conservation Alert.

In emergency situations, ERCOT issues the following Emergency Notices³:

- Energy Emergency Level 1 (EEA 1) - Power Watch
- Energy Emergency Level 2 (EEA 2) - Power Warning
- Energy Emergency Level 3 (EEA 3) - Power Emergency

In addition, the PUC maintains communication with ERCOT emergency personnel to ensure that all restoration concerns are being addressed.

Portable Power Generation

Following disasters that disrupt the commercial power service, generators are often required at critical public facilities, such as water treatment plants, hospitals, wastewater treatment plants and shelters.

The state works with FEMA and the U.S. Army Corps of Engineers (USACE) to assess installation requirements for the deployment of generators by using the USACE Emergency Power Facility Assessment Tool (EFPAT). EFPAT is a secure web-based tool that can be used by critical public facility owners/operators, or emergency response agencies to assess temporary emergency power data. Having pre-installation assessment data in advance will expedite USACE's abilities to provide temporary generator power for critical operations based on priority of need.

Additional information regarding resource support can be found in the Logistics Management and Resource Support Annex. [↗](#)

Pipeline Restoration and Recovery

The RRC coordinates the recovery efforts to safeguard the restoration and recovery of intrastate pipelines⁷ and act as a resource in recovery efforts.

³ For more information refer to the [ERCOT Energy Emergency Alert Communications](#)

⁷ For more information, refer to the [Logistics Annex \(M\)](#).

⁷ For more information, refer to the [Transportation Annex \(S\)](#).

Strategy 4: Provide Response Resources

State agencies assist with energy operations of state significance in a variety of ways. This section outlines state capabilities and resources used in energy operations in Texas.

Based on needs and operational capabilities state assistance may consist of technical guidance, on-scene needs assessment, administrative support, and deployment of personnel and equipment engaged in energy operations. The following table shows some of the resources the state may use.

State agencies initial expenditure of money in response to an emergency, imminent disaster, or recovery from a catastrophic incident should come from funds regularly appropriated by the legislature. If a state agency requires additional assistance they may contact TDEM to pursue other available options.

Response Resources

The chart below provides an overview of response resources which may be used during energy emergencies in the State of Texas.

Entity	Resource	Use	
Public Utility Commission of Texas	Emergency Management Response team	Supply information resources. Provide access to subject matter experts in energy emergency events.	
	Railroad Commission of Texas	Field Inspectors	Ensure state regulations are adhered to, provide SMEs, technical equipment and damage assessment capabilities.
	Site Remediation and Technical Staff	Assist with coordination of spill recovery operations and site remediation.	
Texas Commission on Environmental Quality	Technical Support	Issues and administers permits for pipelines and other production and exploration projects. Provide well and pipeline map databases.	
	Technical Support	Provide enforcement discretion approval. Responsible for providing up-to-date situational awareness to the PUC and SOC on the actions taken for the duration of the event.	

Entity	Resource	Use
Texas Division of Emergency Management	Personnel	<p>Provide technical assistance in support of DDCs and local EOCs.</p> <p>Coordinate resource ordering and tracking.</p> <p>Compile and report incident related expenditures.</p> <p>Provide State Coordinators, District Coordinators, and amateur radio operators.</p> <p>Coordinate with Federal agencies and bordering states for EMAC assistance.</p>
	Information	<p>Maintain through web-based crisis management software situational awareness and providing a common operating picture.</p> <p>Facilitate state-level conference calls for situational awareness.</p>
	Equipment	Provide a DDC in a box.
	Public Works Response Team (PWRT)	PWRT can provide options for assisting with road clearing, heavy equipment and other items to assist with energy restoration.

Summary of Responsibilities

This section specifies the responsibilities of stakeholders with capabilities during energy preparedness, response and recovery.

All state Emergency Management Council (EMC) representatives that support energy response are responsible for the tasks listed below.

Common Stakeholder Responsibilities

Use the following table to ensure all EMC responsibilities are addressed.

Phase	Task
Preparedness	<ul style="list-style-type: none">▪ Determine staff requirements.▪ Identify specific personnel who can fill extended emergency duty positions in the state operations center (SOC), agency emergency operation centers (EOCs), state medical operations center (SMOC), Disaster District emergency operations center, multi-agency coordination centers (MACCs), the Joint Field Office (JFO), field command posts, traffic control and/or reentry points. Ensure that the number of personnel identified is adequate.▪ Train representatives in accordance with National Incident Management System (NIMS) requirements and ensure that these representatives are made aware of the capabilities of their parent organization to provide assistance and support and be prepared to provide recommendations.▪ Ensure appropriate action guides and standard operating guides are developed and maintained.▪ Develop and maintain contact lists and notification procedures.▪ Develop lists of agency resources and update these lists at least quarterly.▪ Develop and maintain procedures for identifying, locating, committing, deploying and accounting for agency emergency support resources.
Response	<ul style="list-style-type: none">▪ Assist with fulfilling intrastate and interstate mutual aid when possible.▪ Provide situational and operational status reports in accordance with existing procedures and/or as requested by the primary agency.▪ Support and coordinate accessibility and functional needs support services.▪ Capture costs associated with losses from an energy emergency.

Stakeholder-Specific Responsibilities

Some stakeholders provide personnel or equipment, while others offer knowledge and expertise in working with response agencies, the vendor community, commercial organizations or associations that supply or restore services.

The following tables show stakeholder responsibilities organized by phase of emergency management. Stakeholders are listed in alphabetical order, with the primary entity listed first.

Primary Entity: Public Utility Commission of Texas (PUC)

Phase	Task
Preparedness	<ul style="list-style-type: none"> Ensure that ERCOT, electric utilities and power generation companies maintain current emergency operations plans as required by PUC rule. Maintain PUC GIS maps that contain utility service area boundaries, links to utility outage and restoration information and other pertinent information. Coordinate with electric utilities during an emergency.
Response	<ul style="list-style-type: none"> Assist in monitoring the generation, transmission, and distribution of electricity to disaster areas. Obtain damage summaries from electrical utilities; provide accurate and timely information regarding electricity outages (customers impacted, critical facilities impacted, estimated duration of outages, realistic restoration schedule) that can be used by direction and control facilities in determining resource allocation. Receive requests for assistance from utilities and other State agencies, formulate an appropriate response, and implement the response, obtaining decision-maker approval where required. Assist electric utilities, as requested, with damage assessment activities. Compile a list of impacted critical facilities along with restoration priorities. Facilitate the restoration process, minimizing the impact on the affected area(s), and proactively interface with utilities and the SOC to look for solutions to problems. If requested, coordinate with electric utilities to facilitate repairs to damaged systems. Assist public information personnel, as appropriate, in updating the media on the status (outage and restoration information) of utilities in the disaster impact area. Provide assistance and coordination for the development and implementation of intrastate and interstate mutual aid. Provide status updates on the condition of the electric power grid on the PUC website.

Railroad Commission of Texas (RRC)

Phase	Task
Preparedness	<ul style="list-style-type: none"> Serves as the lead agency for spills or discharges from all activities associated with the exploration, development, or production, including storage or pipeline transportation (excluding highway transport and refined product spills), of oil, gas, and

Phase	Task
	<ul style="list-style-type: none"> geothermal resources. Maintain an Emergency Process for the Oil and Gas Division, Pipeline Safety Department, Gas Services Department and Alternative Fuels Safety (e.g., liquefied petroleum gas) Department, that defines the chain of command and emergency procedures, and includes interaction with district and regional offices throughout the state. Maintain certain industry contact information. Maintain geospatial maps with operator, facility and location information on oil and gas wells, pipelines, gas processing plants, LPG facilities, above and underground storage, refineries and electric power generators. Provide training and problem solving exercises to SOC representatives. Communicate internally and externally regarding natural gas and pipeline infrastructure capabilities, allocations, curtailments, service disruptions and recovery operations. Communicate with appropriate industry personnel, trade organizations, State agencies and Federal counterparts to facilitate problem solving for gas and petroleum production and pipeline infrastructure, and supply, allocation and consumption issues.
Response	<ul style="list-style-type: none"> Communicate with the Texas Energy Reliability Council, private industry, state agencies, RRC Divisions, RRC Districts and RRC Regional offices regarding natural gas and petroleum production and pipeline transportation infrastructure disruption of production. Keep TDEM and RRC Executive Staff informed of supply disruption developments with respect to damaged infrastructure. Assess and communicate damages to petroleum and pipeline infrastructure and capabilities.
Recovery	<ul style="list-style-type: none"> Communicate internally and externally petroleum production and pipeline production capabilities. Facilitate the coordination of production and pipeline transportation of oil and gas.

State Energy Conservation Office (SECO)

Phase	Task
Preparedness	<ul style="list-style-type: none"> Provide energy consumers with information concerning demand management and energy conservation. Provide technical assistance with regard to energy conservation measures. Aid in developing public information materials.
Recovery	<ul style="list-style-type: none"> Disseminate information through the State Agency Energy Advisory Group. Disseminate information through GovDelivery messaging and

Phase	Task
	through the SECO website.

Texas Division of Emergency Management (TDEM)

Phase	Task
Preparedness	<ul style="list-style-type: none"> ▪ Maintain continuity plans.
Response	<ul style="list-style-type: none"> ▪ Information gathering and dissemination. ▪ Coordinate to respond to DDC concerns and requests for assistance. ▪ Increase SOC readiness to the appropriate level. ▪ Facilitate state-level conference calls for situational awareness. ▪ Create incident and maintain web-based information management system and provide support to DDCs. ▪ Capture response costs for state agency response operations. ▪ Develop protocols and processes for reporting to the SOC during an incident in coordination with DSHS. ▪ Coordinate with VOADs to provide mass care support. ▪ Coordinate changes in shelter protocols. ▪ Recovery from economic impacts due to reductions in travel. ▪ Support logistics.
Recovery	<ul style="list-style-type: none"> ▪ Coordinates damage surveys with local and federal agencies ▪ Prepares disaster declaration requests for the Governor's signature ▪ Deploys staff to the affected area to coordinate the overall recovery process

Authority

Strategic planning guidance and authorities governing the enactment and implementation of this annex are summarized below.

The following table presents specific sources, their relevance to this document, and hyperlinks to their online location.

Source	Relevance	Link
Texas Government Code Chapter 418	Provides authority and mechanisms to clarify and strengthen key roles, as well as authorize and provide for cooperation and coordination of an emergency management system embodying all aspects of pre-disaster preparedness and post-disaster response.	http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.418.htm
Texas Government Code Section 418.050	Provides guidelines for reentry of areas previously evacuated because of a disaster or threat of disaster.	http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.418.htm#418.050
Texas Government Code Section 418.11	Describes the Texas Statewide Mutual Aid System.	http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.418.htm#418.018
16 Texas Administrative Code Section 25.52	Addresses interruption of electric service and reasonable provisions to avoid and restore electricity.	http://www.puc.texas.gov/agency/rulesnlaws/subrules/electric/25.52/25.52.pdf
16 Texas Administrative Code Section 25.53	Outlines which entities must file an emergency operations plan with PUC and dictates frequency.	http://www.puc.texas.gov/agency/rulesnlaws/subrules/electric/25.53/25.53.pdf
Texas Utilities Code Section 38.073	Provides upon a declaration of a natural disaster or other emergency by the governor, that the PUC may require an electric utility, municipally owned utility, electric cooperative, qualifying facility, power generation company, exempt wholesale generator, or power marketer to sell electricity to an electric utility, municipally owned utility, or electric cooperative that is unable to supply power to meet customer demand due to the natural disaster or other emergency.	https://www.puc.texas.gov/agency/rulesnlaws/statutes/Pura15.pdf

Record of Changes

This section describes changes made to this document: when they were made, what they were and who authorized them.

TDEM authorizes and issues changes to this document until such time as it is superseded. This document and all attachments are living documents. Council member representatives are responsible for participating in plan reviews and are required to provide information concerning capability changes that impact their emergency management responsibilities. TDEM coordinates the plan updating process and maintains the plan after receiving feedback and updates from partner agencies.

Primary and support agencies must ensure all records necessary for emergency management operations are obtainable and that duplicate records are held at alternate locations.

Use this table to record the following information:

- Change number, in sequence, beginning with 1
- Date change was made to the document
- Description of change and rationale if applicable
- Initials of person who made the change

Number	Date	Description	Initials
1	12/11/2017	Language change under the Concept of Operations heading	JB
2	12/11/2017	Capitalize DDC under the Audience heading	JB

Contributors

This section provides a list of organizations and individuals who contributed to the development of this document.

This Energy annex could not have been developed without the participation and collaboration of representatives from multiple organizations.

CPA

Dub Taylor

DSHS

Glenn Corbin

ERCOT

Rob Orr

Shelly Botkin

NASEO

Shemika Spencer

PUC

Cody Mulla

Katie Rich

Regina Erales

Therese Harris

RRC

Aimee Beveridge

Larry Elliot

Stephen Kelly

SECO

Denise Brooks

Eddy Trevino

Roger Mulder

TCEQ

David Davis

Michelle Havelka

TERC

Ron Kitchen

TDEM

Anna Tangredi

Bill Wahlgren

Chris Moore

Christa Lopez

Chuck Phinney

Dan Price

Daniel Alvarado

Darrick Hesson

David Solis

Denita Powell

Eric Shuey

Gisela Ryan-Bunger

Jay Hall

Jeff Newbold

Jonathon King

Kenneth Bodisch

Larry Shine

Lee Schnell

Marty Penney

Maxie Bishop

Mike Miller

Quenya Evans

Ray Resendez

Rex Ogle

Rhonda Lawson

Ruth Wedergren

Sarah Haak

Sarah Kreisner

Tom Polonis

Tony Pena

Vera Hughes

Will Patton

Wade Parks

TxDOT

Gilbert Jordan

USACE

David Bishop

Appendix A: Energy and Utilities Action Guide

This section describes the response levels to incidents that occur in the state.

Response Level IV – Normal Conditions

- Promulgate rules requiring utilities to report major service outages to responsible agencies.
- Identify, train and equip agency personnel for emergency operations.
- Develop/maintain agency resource lists and emergency contact info.
- Maintain this Annex.
- Participate in emergency drills and exercises.

Response Level III – Increased Readiness Conditions

- Monitor the situation.
- Review emergency plans and procedures.
- Identify specific personnel to staff resource group positions in emergency facilities.
- Alert personnel for emergency duty.
- Ensure staff recall rosters are up to date.
- Check emergency contact information for utilities, critical facilities and key staff.
- Ensure utilities and energy providers are aware of any emergency situation if it is not readily apparent.

Response Levels II & I – Escalated Response Conditions & Emergency Conditions

- Staff Energy resource group positions in designated emergency facilities.
- Assist in obtaining initial utility damage assessments, including areas and number of customers affected and estimated out-of-service times.
- Obtain regular status reports from utilities serving the affected area.
- Provide periodic status reports to the SOC and DDC's.
- Identify priority service restoration needs requested by local governments or State agencies to utilities.
- Respond to requests for emergency energy/utility assistance, coordinating as necessary with other resource groups.
- Coordinate with utility providers, TDEM and agency public affairs staffs to provide information to the public on the emergency and, where appropriate, measures to deal with utility outages and to conserve energy.
- If requested, identify qualified personnel to assist in damage assessment for public non-profit utilities.
- If requested, coordinate with state agencies and local governments to facilitate utility emergency response including identifying lodging, food, fueling, and equipment staging facilities.

Appendix B: Energy and Utilities Terms and Descriptions

The following terms and descriptions are used throughout this document.

B	Description
Black Start	The process of safely and quickly restoring the ERCOT power grid system with off-line generation sources after a system wide blackout.
C	Description
Coal	Coal makes up approximately 22 percent of the generation capacity in the ERCOT region. Electric power is generated as high pressure steam produced by burning coal moves the blades of a turbine that drives a generator. Most of the coal used to generate electricity in Texas is transported into the state via railways from western portions of the United States.
D	Description
Delivery	Delivery of fuels or transformed fuels to point of consumption. It potentially encompasses the extraction, transmission, generation, distribution and storage of fuels.
Downstream	Refining materials, distributing, marketing, trading and use of products.
E	Description
Energy	The production and provision of electrical power, natural gas, petroleum products and fuels.
Energy Systems Delivery	Energy generation and delivery have become increasingly interconnected and interdependent systems within the energy sector. Disruptions between any portions of the energy system can have cascading effects without a resilient energy delivery system.
Energy Systems Sector	Energy system sectors for oil and gas are upstream, midstream, and downstream.

Exploration Exploring areas with detailed geological and geophysical surveys for raw materials.

G Description

Generation Generation of electricity is the process of producing electric power from other sources of primary energy or fuel.

H Description

Hydroelectric Electricity is produced as turbine generators are driven by moving water. Hydroelectric generation makes up less than one percent of the total generation capacity in Texas. This power is contingent on rainfall, and other consumption factors.

I Description

Interstate Pipeline A pipeline that crosses the Texas state line.

Intrastate Pipeline A pipeline that begins and terminates within the borders of Texas.

M Description

Midstream Involves the transportation (by pipe, rail, barge, oil tanker or truck) and storage of materials for downstream processing.

N Description

Nuclear There are two active nuclear generation sites in Texas. Nuclear power makes up approximately 6 percent of the generation capacity in the ERCOT region.

P Description

Petroleum Storage Area or container for storing raw materials for refining.

Pipelines	Pipelines are declared common carriers with over 212,000 miles of pipeline. Interstate pipelines consist of natural gas and hazardous liquids pipelines. The Railroad Commission (RRC) has regulator authority over all pipelines in Texas.
Processing	Components turned into marketable products.
Production	Producing materials for use in the midstream sector.

R	Description
Refining	Separating various components and convert them into useable products or feedstock.
Rotating Outages	Sometimes called a “rolling blackout,” a Rotating Outage is an extremely rare, controlled power outage that is enacted as a last resort when there is a statewide emergency.

S	Description
Solar	Radiant energy from the sun is converted to electricity. Solar power is an intermittent energy source. The output of solar energy is contingent on weather conditions, and varies by season. Solar makes up less than one percent of the total generation capacity in the ERCOT region.

T	Description
Transmission Lines	For electric facilities in Texas, transmission lines serve as the system backbone, tying together power plants and substations where high voltage power is reduced to a lower voltage for distribution to consumers.
Transmission System	Electric power plants are located in geographic locations that allow ready access to a fuel source but may be some distance from population centers. Power is transported at high voltage from the power plant to areas of customer demand by an interconnected system of transmission lines and substations that lower high voltage power to voltages acceptable for delivery to customers via distribution systems. Transmission systems are interconnected so that utilities can share responsibility to manage the demand for electric power across the state. Because electricity cannot be efficiently stored on a large scale, supply must match demand, to prevent localized or system wide rotating power outages or blackouts.

Transportation Transporting and delivering materials to refineries.

U

Description

Upstream Known as the activities relating to the exploration and production of materials for energy use. Upstream disruptions can affect the midstream sector by not providing materials for energy use.

W

Description

Wind Texas is the largest producer of wind energy in the United States. Wind makes up approximately 18 percent of the generation capacity in the ERCOT region. Electricity is produced when kinetic energy of wind is converted into mechanical energy by wind turbines that drive generators. Wind Energy is an intermittent power source.
