

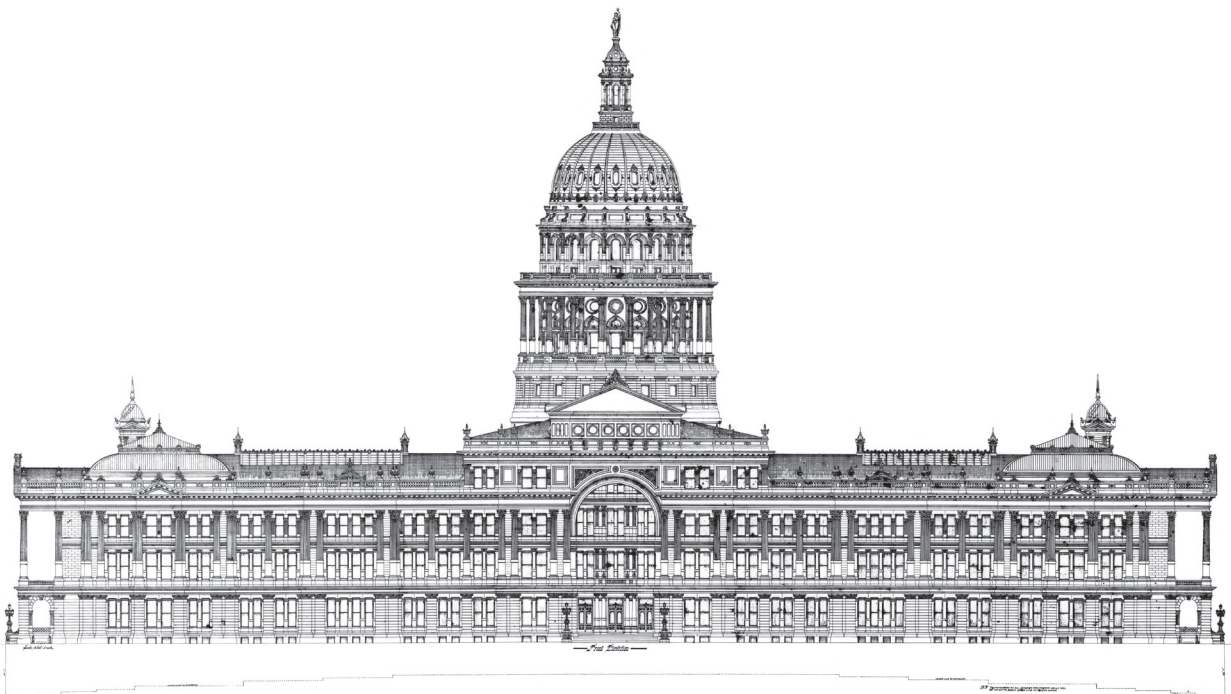


INTERIM REPORT

TO THE

82ND TEXAS LEGISLATURE

House Committee on
ENERGY RESOURCES
January 2011



**HOUSE COMMITTEE ON ENERGY RESOURCES
TEXAS HOUSE OF REPRESENTATIVES
INTERIM REPORT 2010**

**A REPORT TO THE
HOUSE OF REPRESENTATIVES
82ND TEXAS LEGISLATURE**

**JIM KEFFER
CHAIRMAN**



House Committee On
Energy Resources

January 10, 2011

Jim Keffer
Chairman

P.O. Box 2910
Austin, Texas 78768-2910

The Honorable Joe Straus
Speaker, Texas House of Representatives
Members of the Texas House of Representatives
Texas State Capitol, Rm. 2W.13
Austin, Texas 78701

Dear Mr. Speaker and Fellow Members:

The Committee on Energy Resources of the Eighty-first Legislature hereby submits its interim report, including recommendations, for consideration by the Eighty-second Legislature.

Respectfully submitted,

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Rep. Jim Keffer, Chairman

A handwritten signature in black ink, appearing to be "Myra Crownover", written over a horizontal line.

Rep. Myra Crownover, Vice Chair

A handwritten signature in black ink, appearing to be "Tom Craddick", written over a horizontal line.

Rep. Tom Craddick

A handwritten signature in black ink, appearing to be "Yvonne G. Toureilles", written over a horizontal line.

Rep. Gonzalez-Toureilles

Rep. Rios-Ybarra

A handwritten signature in black ink, appearing to be "Joe Crabb", written over a horizontal line.

Rep. Joe Crabb

A handwritten signature in black ink, appearing to be "David Farabee", written over a horizontal line.

Rep. David Farabee

A handwritten signature in black ink, appearing to be "Rick Hardcastle", written over a horizontal line.

Rep. Rick Hardcastle

A handwritten signature in black ink, appearing to be "Mark Strama", written over a horizontal line.

Rep. Mark Strama

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INTRODUCTION

At the beginning of the 81st Legislature, the Honorable Joe Straus, Speaker of the Texas House of Representatives, appointed nine members to the House Committee on Energy Resources. The Committee membership included the following Representatives: Jim Keffer, Chairman; Myra Crownover, Vice- Chair; Joe Crabb; Tom Craddick; David Farabee; Yvonne Gonzalez-Tourelles; Rick Hardcastle; Tara Rios-Ybarra; and Mark Strama. The committee has completed its hearings and research and has filed its report.

The committee would like to thank the citizens and invited witnesses who provided testimony at our hearings for their involvement in the process. We also thank the leadership and staff of the Railroad Commission of Texas, the Texas Commission on Environmental Quality, and the State Energy Conservation Office for their time and efforts on behalf of the committee.

HOUSE COMMITTEE ON ENERGY RESOURCES

INTERIM STUDY CHARGES

- CHARGE 1** Survey current local ordinances governing surface use of property in oil and gas development. Recommend changes, if any, to the authority of the Railroad Commission to regulate the operation of oil and gas industries in urban areas of the state, particularly the Barnett Shale.
- CHARGE 2** Monitor the implementation of recent legislation dealing with carbon capture and storage and make recommendations as to whether further action is required to resolve outstanding issues. Examine proposed legislation from other states and review federal initiatives.
- CHARGE 3** Examine the state's portfolio of electric generation resources, including traditional sources, emerging renewable technologies, and energy efficiency. Determine whether the existing state regulatory programs and incentives are adequate to meet the energy needs of the future. Consider factors relating to reliability, requirements for additional transmission, or auxiliary services. *Joint Interim Charge with House Committee on State Affairs*
- CHARGE 4** Consider the establishment of uniform statutes and codes relating to liquid petroleum gas permitting and operations as a means to resolve conflicts of interpretation between state and local jurisdictions.
- CHARGE 5** Monitor the agencies and programs under the committee's jurisdiction.

CHARGE 1

Survey current local ordinances governing surface use of property in oil and gas development. Recommend changes, if any, to the authority of the Railroad Commission to regulate the operation of oil and gas industries in urban areas of the state, particularly the Barnett Shale.

ISSUE SUMMARY

Oil and natural gas exploration and production activities have historically been in rural areas. With the advent of new technologies, such as advanced hydraulic fracturing, and discoveries of large reserves under urban population centers, new challenges, benefits, and complications have emerged for oil and gas companies and local communities. The Fort Worth/Dallas area is affected by a boom in energy production because it is located on what some experts say is the largest onshore natural gas field in the United States, the Barnett Shale.¹

Barnett Shale is a hydrocarbon-producing geological formation of great economic significance to Texas. It consists of sedimentary rocks and the productive part of the formation is estimated to stretch from the city of Dallas west and south, covering 5,000 square miles.

Core Counties	Non-Core Counties	
Denton	Archer	Hood
Johnson	Bosque	Jack
Tarrant	Clay	Montague
Wise	Comanche	Palo Pinto
	Cooke	Parker
	Coryell	Shackelford
	Dallas	Somervell
	Eastland	Stephens
	Ellis	
	Erath	
	Hamilton	
	Hill	

While mineral owners and government entities have benefitted financially from increased drilling in urban areas, many issues of public concern have arisen that have resulted in state and local regulators having to reevaluate the oversight of this important industry. Throughout the 81st Legislative Session and the interim, the House Committee on Energy Resources (committee) heard testimony from private citizens, elected officials, and industry representatives on a variety of topics associated with drilling activities. Some of those topics have included issues such as distance requirements between a dwelling and a gas well, noise, traffic, odor, water usage, placement of pipelines, permitting processes, and since the surface estate and the mineral estate are severable in Texas, the conflicts that arise between interested parties of a split estate.

The Railroad Commission of Texas (RRC) has primary regulatory jurisdiction over the oil and natural gas industry, pipeline transporters, natural gas and hazardous liquid pipeline industry, natural gas utilities, the LP-gas industry, and coal and uranium surface mining operations. However, in many cases the RRC has been asked to resolve issues it has no statutory authority to

¹ Railroad Commission of Texas, <http://www.rrc.state.tx.us/barnettshale/index.php> .

regulate. For example, the RRC does not have jurisdiction regarding property title, damage claims, or royalty payments. The RRC does not have statutory authority to regulate the pumping of groundwater for use during the drilling and completion of an oil and gas well. The RRC does not have jurisdiction to regulate noise or traffic related to oil and gas operations or pipeline right-of-ways. Also, the RRC rules focused on environmental health and safety do not distinguish between rural and urban areas. The RRC does not regulate how close to a residential property a gas well can be drilled. However, for a well within the city limits, the city may enact ordinances regarding the proximity to dwellings or other structures. In addition, the Municipal Code, Section 253.005(c), provides: "A well may not be drilled in the thickly settled part of the municipality or within 200 feet of a private residence." Also, the RRC does not have jurisdiction to prohibit a surface owner from constructing facilities on the owner's property that may interfere with drilling activity.²

Due to public outcry and in order to address gaps in regulation, many incorporated cities have adopted local ordinances that impose more restrictions on oil and gas operations in their communities. Almost all the cities in the Barnett Shale area have adopted ordinances regulating the exploration and production of oil and gas. (See "examples of local ordinances in the Barnett Shale" on the next page.)

While incorporated cities have used ordinance authority to provide additional regulation, counties do not have authority over drilling in unincorporated areas, and previous legislative efforts to grant such authority have failed. During the 81st Legislative Session, for example, S.B. 2402 was filed to grant this authority to "certain counties" with a population of 1.4 million or more in which two or more municipalities with a population of 300,000 or more are located (Tarrant County). However, the bill was met with opposition from industry and failed to receive an affirmative vote in the Senate Committee on Natural Resources.

Mineral rights owners and industry operators have complained that the hodgepodge of local ordinances are so onerous that they slow or halt development of the mineral estate and are an infringement on the rights of the mineral owner. They have also questioned whether cities have exceeded their statutory authority through such measures as imposing, in effect, a moratorium on drilling permits.

² John Tintera, "Barnett Shale Issues and Concerns: the Regulatory Perspective," Railroad Commission of Texas (October 2009): 1-3.

Examples of local ordinances in the Barnett Shale

Arlington -

http://www.arlingtontx.gov/planning/pdf/Gas_Wells/Final_Gas_Drilling_Amendments_Ordinance.pdf

Bedford –

http://library7.municode.com/default-test/home.htm?infobase=11924&doc_action=whatsnew

Benbrook –

http://www.cityofbenbrook.com/filestorage/68/3151/Final_Gas_Ordinance.pdf

Colleyville –

<http://www.colleyville.com/gaswelldrilling.html>

Denton –

<http://www.cityofdenton.com/Modules/ShowDocument.aspx?documentid=5015>

Dish –

<http://www.townofdish.com/index.php?id=EKC4LS3O4>

Flower Mound –

http://library.municode.com/HTML/13329/level3/SA_C34_AVII.html

Fort Worth –

http://www.fortworthgov.org/uploadedFiles/Gas_Wells/090120_gas_drilling_final.pdf

Grand Prairie –

<http://library.municode.com/index.aspx?clientId=10142&stateId=43&stateName=Texas>

Keller –

<http://www.cityofkeller.com/index.aspx?page=887>

Mansfield –

[http://www.amlegal.com/nxt/gateway.dll/Texas/mansfield/titlexibusinessregulations/chapter114gaswelldrillingandproduction?f=templates\\$fn=document-frameset.htm\\$3.0](http://www.amlegal.com/nxt/gateway.dll/Texas/mansfield/titlexibusinessregulations/chapter114gaswelldrillingandproduction?f=templates$fn=document-frameset.htm$3.0)

North Richland Hills –

<http://www.nrhtx.com/GasDrilling/index.aspx>

Southlake –

http://www.cityofsouthlake.com/southlakegovernment/city_departments/planning_and_development_services/FAQ_gas_drilling.htm

Weatherford –

http://library7.municode.com/default-test/home.htm?infobase=13519&doc_action=whatsnew

Committee Hearing

The House Committee on Energy Resources held a public hearing in Fort Worth on November 18, 2010, to discuss Interim Charge #1.

The committee heard testimony from a diverse group of interested parties, including local elected officials, community leaders, private citizens, industry representatives, neighborhood associations, and agency officials.

A common theme during the testimony of local elected officials was the need for state regulators to be “proactive not reactive.” They also did not want local authority to be diminished. Some suggested that counties be given even greater regulatory control, particularly to enforce standards in unincorporated areas.

Many witnesses noted that the staffing for the RRC and the Texas Commission on Environmental Quality (TCEQ) may not be adequate to properly regulate the oil and gas industry. For example, the RRC monitors more than 375,000 oil and natural gas wells, 280,000 of which are actively producing. In fiscal year 2009, the RRC spent nearly \$15.8 million on its inspection and monitoring functions, employing 87 oil and gas field inspectors who work out of nine district offices across the state. This means there is an average of one field inspector for every 4,310 wells.³

One mayor stated that in his opinion, there is a significant disconnect between the RRC and the TCEQ. He discussed the need for a memorandum of understanding between regulatory agencies and local communities that clearly defines the mandates and responsibilities. He asked for the committee to consider directing the RRC to extend regulatory controls over pipeline routes to local jurisdictions. He also suggested that the RRC should encourage the joint use of pad sites for drilling equipment and storage.

Another mayor discussed the need to strike a greater balance between surface owner rights and mineral owner rights. She called for the institution of air, soil, water, noise, and pipeline standards. She expressed that there should be full public disclosure for drilling products, such as chemicals used in the hydraulic fracturing process. She has heard many concerns about the devaluation of property value from increased drilling and stated that there needs to be a greater degree of separation between the regulators and the industry. She was also critical of the low fines assessed to industry when it does not follow the rules.

The committee heard testimony from a mayor who testified that cities are the best, most accountable entity to enforce and implement priorities. He cautioned against taking rights away from local authorities and, in fact, wanted the committee to give cities more authority to regulate. He believes that communities and industry can strike a balance and cited the creation of voluntary “Best Practices for Pipeline and Municipality Relations” as proof that parties in conflict can come together to reach a common ground.

3 Sunset Advisory Commission Staff Report on the Railroad Commission of Texas, November 2010.

Senator Wendy Davis, who attended the hearing as a guest of the committee, discussed the development of an “optimal standard” or “model ordinance.” She suggested giving the RRC power to enforce a "model ordinance" in unincorporated areas. The proposal would not affect city ordinances, but some cities might choose to adopt the model ordinance to create cohesive regulation in a regional area.

The committee also heard testimony from private citizens. Some witnesses wanted to ban all drilling activity. Others conveyed the belief that industry can coexist but expressed concern about health and safety. Most preferred to keep and enhance local control.

One item that drew criticism was the RRC process known as a "Rule 37 exception." In the Barnett Shale, a gas well's bore has to be at least 330 feet from lease lines or any unleased property. If the RRC grants an exception under Commission Rule 37 (Texas Administrative Code), the bore can be moved closer to unleased land. That creates the risk that the mineral owner of the adjacent property would not be compensated for the gas extracted from the unleased property. The drilling company is not required to make a lease offer to the affected landowners when it makes a Rule 37 request. Unless landowners protest, the RRC can grant the exception without a hearing.⁴

Pipeline safety and routing issues, such as the odorization of gathering lines, duplication of pipeline routes, and eminent domain authority, were also addressed. The committee was presented with a study, “The State of Natural Gas Pipelines in Forth Worth,” that was commissioned by the Fort Worth League of Neighborhood Associations with funding from the U.S. Department of Transportation’s Office of Pipeline Safety. The report contained a number of recommendations specific to the United States Congress, the Texas Legislature, the Railroad Commission of Texas, the City of Fort Worth, the pipeline industry, and the citizens of Fort Worth. One recommendation highlighted for the committee was the idea of allowing the use of road rights of way under Texas Department of Transportation (TxDOT) control for pipeline routing.

Prior to the 81st Legislative Session, gas utilities were already allowed to lay their pipelines under various public rights of way. However, gas corporations had only the right to lay and maintain lines over and across a public road, a railroad, a canal or stream, or a municipal street or alley. During the 81st Legislative Session, H.B. 2572 was enacted to provide that a gas corporation has the right to lay and maintain pipelines over, under, and across, certain roads, railroads, bodies of water, streets or alleys. However, the term “gas corporation” is not defined in Texas statutes and there has been some dispute as to whether a “gas corporation” must also be a “gas utility” in order to allow both utility and non-utility gas gathering lines to be placed in TxDOT rights of way. The distinction is important because some gathering lines are “gas utilities” and some are not. TxDOT, for example, has in the past taken the position that gathering lines are not “gas utilities” for purposes of using the public roads even in those cases where the gathering line was defined as a “gas utility” by the Utilities Code and regulated as such by the RRC. In order to clarify the purpose of H.B. 2572 and encourage the building of

⁴ “Rules on natural gas drilling haven't caught up with today's reality, experts say,” *Fort Worth Star Telegram*, April 22, 2010.

pipelines in public rights of way instead of on private property, the Utilities Code should be amended to make it clear that both utility and non-utility pipelines may be placed in TxDOT rights of way, and that the term "gas corporation", for purposes of H.B. 2572 only (Utilities Code, Section 181.005), includes both utility and non-utility gatherers.

The committee heard from witnesses who were supportive of natural gas exploration and production and who expressed the viewpoint that the rise in local ordinances that differ among jurisdictions has created a complicated regulatory landscape that is hurting energy production and economic growth.

One witness advocated an approach of addressing the concerns of local citizens at the state level to ensure consistency and predictability. Another witness suggested that the RRC should have broad exclusive original jurisdiction to establish standards in connection with drilling, completion, and production of natural gas, and pipelines, including all sites, facilities, and equipment used in such operations. He stated that the RRC, not the cities, should have exclusive jurisdiction on setbacks, design limitations, environmental controls (excluding TCEQ controls), screening options, hours of drilling/completion/operation, lighting, noise regulations, maintenance requirements, and other operational considerations for which municipalities have created ordinances.

One witness testified that in his belief cities have overstepped their legal authority and have infringed upon the rights of mineral owners and producers. He noted that appealing an ordinance by filing an action in state or federal court is expensive and time consuming and suggested a better system would be a central state agency empowered to fully regulate the industry. He asked the committee to consider the following: designating the RRC as the sole regulatory agency for establishing rules for drilling site locations; enabling municipalities with the authority to require on-site aesthetic improvements, pursuant to regulations in accordance with RRC standards, to assure that drill sites complement surrounding development; designating the RRC as an appellate body to hear appeals of permit issuance or challenges to municipal regulation; and developing standards for uniform and consistent regulations on gas drilling in cooperation with the RRC, municipal representatives, and gas production representatives.

At the request of the committee, the executive directors of both the Railroad Commission of Texas and the Texas Commission on Environmental Quality, along with several additional agency employees, were present during the duration of the hearing to listen to the testimony offered by witnesses.

A group of public officials and members of the Texas Pipeline Association worked by collaborating to improve communications between the pipeline industry and local municipal governments located in the Barnett Shale. This group met on a number of occasions to discuss the issues that surround pipeline routing through municipal jurisdictions. Officials from the following municipalities participated in the workgroup: Argyle, Arlington, Cleburne, Copper Canyon, Denton, Dish, Flower Mound, Fort Worth, Lewisville, Mansfield, Northlake, and Southlake. State Representatives Tan Parker and Lon Burnam attended personally; while U.S. Congressman Michael Burgess and State Senators Davis, Nelson, and Harris sent staff members. Employees of the Texas Pipeline Association and officials from the following companies participated: Atmos, Chesapeake Energy, Crosstex, Devon, Enbridge Inc., Energy Transfer, Epc, Quicksilver, and Williams E & P.

The result of this collaborative effort was a document titled *Best Practices for Pipeline and Municipality Relations*. The pipeline industry also adopted a document called *General Guidelines for Right of Way Acquisition, Construction and Operations*.

Best Practices for Pipeline and Municipality Relations

Pre-Routing:

1. Municipality will designate the department or person with who pipeline operators should meet prior to obtaining easements and planning of final pipeline route.
 - a. Municipality will provide a packet of information which includes all ordinances and other planning documents which are applicable to pipelines. Pipeline operators will read all ordinances in advance.
 - b. Pipeline operators will present municipality with preliminary route(s) from origin to terminus within the municipality's corporate boundaries together with fixed routing issues (e.g. known well locations that must be connected, existing right of way considered, required and anticipated issues along the preliminary route known by the pipeline operators to affect the routing).
 - c. Municipalities will provide comments on preliminary route within a reasonable amount of time. Reasonable time is defined as *not longer than two (2) weeks for gathering lines and not longer than four (4) weeks for transmission lines*. Pipeline operators will respond to municipalities' comments.

2. The following language is from Section 181.005(c) of the Texas Utilities Code, and pipeline operators will comply with its requirements in determining routes within a municipality:

In determining the route of a pipeline within a municipality, a gas corporation shall consider using existing easements and public rights of way, including streets, roads, highways, and utility rights of way. In deciding whether to use a public easement or right of way, the gas corporation shall consider whether:

- (1) the use is economically practicable;*
- (2) adequate space exists; and*
- (3) the use will violate, or cause the violation of any pipeline safety regulations.*

- a. Route will be as consistent as practical with existing municipal planning documents for existing and future municipal land uses while respecting private property rights.
- b. Both parties will strive for the most direct, cost effective, and time efficient route for the pipeline company.

3. Pipeline operators will actively participate in planning of preferred pipeline routes with contiguous municipalities on a project by project basis.

Right of way Acquisition:

- 1. Pipeline operators will require right of way agents to be registered with the Texas Real Estate Commission (TREC).
- 2. Pipeline operators commit to negotiate in good faith with property owners before resorting to eminent domain.
- 3. A current copy of the GENERAL GUIDELINES FOR RIGHT OF WAY ACQUISITION, CONSTRUCTION AND OPERATIONS is attached to this document.

Construction Phase:

- 1. Municipalities commit, when practical, to grant temporary working easements within public rights of way during construction.
- 2. Pipeline operators will promptly respond to complaints and will provide to the city contact information for a 24-hour representative who can be reached at all stages of construction.
- 3. Pipeline operators will commit to avoid removing trees unless necessary for safety and/or regulatory compliance.
- 4. Pipeline operators will provide copies of plans and final pipeline route within the municipality in a format acceptable to the Municipality.
- 5. Municipalities and their contractors will commit to use the State's One-Call system when undertaking any excavations in order to avoid damaging pipelines.

Desirable:

- 1. Pipeline operators will work with municipalities to employ principles to reduce noise impact on neighboring residents and businesses.
- 2. When the pipeline operator has the right to do so and it is reasonable to do so, and when it would not unreasonably interfere with pipeline operations, the pipeline operator may grant municipalities above ground uses in easements.

TEXAS PIPELINE ASSOCIATION

GENERAL GUIDELINES FOR RIGHT OF WAY ACQUISITION, CONSTRUCTION AND OPERATIONS

While building and operating the necessary infrastructure to transport natural gas and liquid hydrocarbon products which provide for the critical energy needs of Texas and beyond, member companies of the Texas Pipeline Association, and their representatives, commit to maintain safe operations, respect landowners and communities, and be responsible stewards of the environment. Texas Pipeline Association member companies and their representatives also commit to conduct their business in accordance with the following guidelines:

Communication

- Establish and maintain communication with landowners and communities.
- Provide landowners with appropriate company contact information during right of way acquisition, construction, and operations.

Right of Way Acquisition

- Communicate to landowners and to public officials, as appropriate, the scope and purpose of proposed projects, and the processes involved in construction, operation and maintenance of facilities.
- Strive to reach right of way acquisition agreements with landowners by negotiating in good faith with honesty and fairness.
- Respect landowners' property.
- Assure company employed and contract right of way agents hold a current certificate of registration from the Texas Real Estate Commission.

Construction

- Be respectful of construction impact on community activities and attempt to minimize construction effects on community activities.
- Practice good housekeeping on landowners' property, including protection of livestock and wildlife
- Timely restore construction site in compliance with contractual obligations.

Operations

- Conduct operations in accordance with state and federal regulations.
- Strive to communicate with landowners prior to any significant maintenance operations on their property.
- Train personnel in safe operation practices and conduct emergency planning when appropriate.
- Apply appropriate engineering standards for our facilities and operations.

Finally, the member companies will provide these guidelines to all employees and representatives involved in Right of Way Acquisition, Construction and Operations to promote commitment and compliance with these guidelines.

RECOMMENDATIONS TO THE 82ND TEXAS LEGISLATURE:

1. Consider requiring the Railroad Commission of Texas or its successor to work with municipal leaders and industry experts to develop a model ordinance that would address regulatory gaps in unincorporated areas and that could be made available for local governments to adopt on a regional basis to allow for consistent, uniform standards in an area.
2. The Utilities Code should be amended to make it clear that both utility and non-utility pipelines may be placed in Texas Department of Transportation rights of way, and that the term "gas corporation", for purposes of H.B. 2572 (81st Session) only (Utilities Code, Section 181.005), includes both utility and non-utility gatherers.

CHARGE2

Monitor the implementation of recent legislation dealing with carbon capture and storage and make recommendations as to whether further action is required to resolve outstanding issues. Examine proposed legislation from other states and review federal initiatives.

ISSUE SUMMARY

The 81st Legislature enacted S.B. 1387 by Senator Seliger and Representative Crownover, relating to implementation projects for the capture, injection, sequestration, or geologic storage (also known as geologic sequestration) of carbon dioxide (CO₂).

The enrolled bill summary for S.B. 1387 states:

S.B. 1387 amends the Water Code and Natural Resources Code to establish a regulatory framework for the implementation of projects involving the capture, injection, sequestration, or geologic storage of carbon dioxide. The bill establishes that the Railroad Commission of Texas (RRC) has jurisdiction over the administration of geologic storage of anthropogenic carbon dioxide in, and the injection of carbon dioxide into, a reservoir that is initially or may be productive of oil, gas, or geothermal resources or a saline formation directly above or below that reservoir, subject to legislative review based on recommendations made in a preliminary report prepared jointly by the commission and the Texas Commission on Environmental Quality (TCEQ), in consultation with the Bureau of Economic Geology of The University of Texas at Austin. The bill requires a similar report from the General Land Office, specifies the type of information to be included in the reports, and requires the report to be filed with the legislature not later than December 1, 2010. The bill establishes the railroad commission's jurisdiction over a well used for the geologic storage of anthropogenic carbon dioxide regardless of whether the well was initially completed for that purpose or a different purpose and subsequently converted to the purpose described above, but provides that the commission does not have jurisdiction over the injection of fluid through the use of certain injection wells defined by federal law for the primary purpose of enhanced recovery operations.

S.B. 1387 requires the RRC to adopt rules and procedures to carry out its regulatory powers, specifies that such rules and procedures must be consistent with federal requirements, and authorizes the RRC to collect fees and penalties to enforce the rules. The fees collected are to be deposited to the credit of the newly created anthropogenic carbon dioxide storage trust fund. The bill sets forth the authorized uses of the fund. The bill prohibits a person from drilling or operating an anthropogenic carbon dioxide injection well for geologic storage or constructing or operating a regulated geologic storage facility without a permit issued by the RRC, and sets forth provisions for the permitting process and the imposition of fees. The bill requires the applicant for a permit to provide to the railroad commission a letter from the executive director of TCEQ stating that drilling and operating the injection well will not injure any freshwater strata in that area and that the formation or stratum to be used for the geologic storage facility is not freshwater sand, and it requires other environmental protections to be met before the RRC issues a permit. The bill requires the applicant to provide to the RRC satisfactory evidence of financial responsibility each year and sets forth provisions relating to a performance bond or other form of financial security an applicant may be required to maintain.

S.B. 1387 sets out provisions relating to the RRC's authority to adopt rules that authorize multiple or alternative uses of injection wells, including the conversion of a well from its authorized purpose to a new or additional purpose, and provisions relating to the ownership of the anthropogenic carbon dioxide.

Committee Hearing

The House Committee on Energy Resources held a public hearing in Austin on April 30, 2010, to discuss Interim Charge #2 and monitored the implementation of S.B. 1387 throughout the interim.

On October 21, 2010, amendments to the Memorandum of Understanding between the Texas Commission on Environmental Quality (TCEQ) and the Railroad Commission of Texas (RRC) to reflect updates and changes required by Section 2 of S.B. 1387 became effective.⁵

On Tuesday, November 30, 2010, the Railroad Commission of Texas adopted new rules relating to the underground storage of man-made carbon dioxide for facilities that plan to store CO₂ not associated with enhanced oil recovery operations. The rules include requirements for applications, fees, geologic site characterization, permit issuance, construction, operation, testing, monitoring, and closure to ensure the protection of water, mineral resources, and public health and safety.

The adopted rules for S.B. 1387 provide for the implementation of projects involving the capture, injection, sequestration, or geologic storage of carbon dioxide. The purpose of the rules is to ensure that best practices are used by any company engaged in the business of injecting CO₂ into underground formations for the purpose of long-term storage.

The new rules can be viewed at the following link, under Chapter 5, Carbon Dioxide:

<http://www.rrc.state.tx.us/rules/proposed.php>

The RRC rules are consistent with the new United States Environmental Protection Agency rules, which were finalized on November 22, 2010, and can be viewed at the following link:

http://water.epa.gov/type/groundwater/uic/wells_sequestration.cfm

RRC rulemaking for carbon storage for facilities that plan to use CO₂ for enhanced oil recovery began in December 2010.

In addition, Sections 9 and 10 of S.B. 1387 direct the RRC, the TCEQ, the General Land Office (GLO), and the Bureau of Economic Geology of the University of Texas at Austin (BEG) to coordinate, prepare, and file with the legislature not later than December 1, 2010, two preliminary reports related to geologic storage of CO₂. The first report focuses on a preliminary framework for managing activities related to geologic storage of CO₂ on state-owned land. The second report focuses on geologic storage of CO₂ on privately owned lands and commercial operations. Because of the overlap in information between these two reports, they have been combined into a single document titled “Injection and Geologic Storage Regulation of

Anthropogenic Carbon Dioxide,” and it can be viewed at the following link:

⁵ http://www.tceq.state.tx.us/assets/public/legal/rules/rule_lib/adoptions/09055007_ado.pdf

<http://www.rrc.state.tx.us/forms/reports/notices/SB1387-FinalReport.pdf>

S.B. 1387 requires that the RRC, TCEQ, GLO, and BEG provide recommendations with respect to several jurisdictional and regulatory areas. This report includes nine recommendations.

Briefly, these recommendations are as follow:

- Section 5.1, regarding additional legislation, modification to the RRC-TCEQ Memorandum of Understanding (MOU), or new rules for regulating geologic storage (GS) facilities and associated anthropogenic CO₂ injection wells: At this time, the agencies see no need to revise the MOU as recently amended, or rules related to GS of anthropogenic CO₂ under the jurisdiction of the RRC, The agencies do, however, recommend additional legislation regarding GS projects over which the TCEQ currently has jurisdiction.
- Section 5.2, regarding which agency(ies) should have jurisdiction over permitting related to anthropogenic CO₂ injection wells and GS facilities that are used for the injection and storage of anthropogenic CO₂ in saline formations not productive of oil, gas, or geothermal resources or any other permitting of GS facilities not subject to Subchapter C-1, Chapter 27, Water Code: This report recommends two options – both options recommend additional supporting legislation:
 - Option 1 would give to the RRC jurisdiction for all CO₂ injection and GS, with the TCEQ retaining responsibility for the advisory letters in compliance with Section 27.046, Water Code.
 - Option 2 would retain shared RRC and TCEQ jurisdiction as provided under Sections 27.041 and 27.011, Water Code.

In addition, the agencies have identified a potential jurisdictional problem with respect to disposal of acid gas by injection. Currently, under the Class II UIC rules, the RRC administers a program to regulate injection of acid gas, including CO₂ generated at natural gas processing plants. This activity is undertaken as an alternative to flaring. Such injection is currently permitted as a disposal activity rather than a geologic storage activity. Because the CO₂ derived from gas processing appears to be included in the definition of anthropogenic CO₂ added by S.B. 1387, and because the CO₂ is typically injected into formations not productive of oil, gas, or geothermal resources, or above or below such formations, the language in S.B. 1387 could imply that jurisdiction over such injection changed from RRC to TCEQ. This implication presents a potential conflict (which the agencies believe was not intended) regarding acid gas disposal wells permitted by the RRC. Therefore, if jurisdiction over CO₂ GS remains shared by the RRC and the TCEQ (e.g., Option 2), the legislature may wish to clarify that injection of anthropogenic CO₂, as a component of acid gas generated in association with gas processing, into a non-productive formation falls under the jurisdiction of the RRC for the purpose of disposal as well as geologic storage. Placing jurisdiction for all CO₂ GS under the RRC, would eliminate the issue of jurisdiction with respect to acid gas disposal.

-
- Section 5.3, regarding ensuring that public land management and leasing laws are adequate to accommodate GS: The GLO has adequate authority to lease public lands for geologic storage of CO₂ and a robust system for leasing properties for mineral development, including enhanced recovery operations. The agencies made no recommendations regarding this issue.
 - Section 5.4, regarding appropriate rights-of-way for anthropogenic CO₂ pipelines on state-owned land: The GLO already has the authority necessary to issue pipeline easements. No additional authority is needed.
 - Section 5.5, regarding methods to mitigate any negative effects of federal greenhouse gas reporting requirements on owner and producers of naturally occurring CO₂: The EPA has proposed to expand the mandatory reporting rules for greenhouse gases to include reporting of injection and geologic sequestration of CO₂. However, these rules provide for reporting both natural and anthropogenic CO₂. Possible competitive advantages or disadvantages of using one form versus the other could be mitigated by legislation. Developing educational outreach efforts and materials by state and federal agencies, trade associations, and by environmental groups also may be beneficial.
 - Section 5.6, regarding recommendations to address the attributes of the subsurface area of operations for GS facilities: The agencies believe that no recommendations beyond the proposed RRC rules are necessary.
 - Section 5.7, regarding recommendations to address the methods of financial assurance and the allocation of long-term liability for the post-operational phases of GS projects: It is not clear whether the Anthropogenic Carbon Dioxide Storage Trust Fund created by S.B. 1387 could be used to perform long-term activities, for example, to address unanticipated migration of CO₂ after a GS site has been closed. In addition, TCEQ does not appear to have statutory access to this or any other trust fund for any activities deemed within the jurisdiction of TCEQ.
 - Section 5.8, regarding criteria for identifying candidate sites in seven geologic settings (operating oil and gas fields; depleted oil and gas fields; saline formations; unmineable coal seams; coal beds used for methane recovery; geothermal systems; and igneous formations): The greatest potential for deep subsurface geologic storage of CO₂ in Texas occurs in saline formations, and in operating or depleted oil and gas fields. In general, storage in the remaining geologic settings is not currently feasible in Texas due to economic or geologic factors.
 - Section 5.9, regarding a permitting process for anthropogenic CO₂ injection well and GS facilities that are used for the injection and storage of anthropogenic CO₂ in saline formations not productive of oil, gas, or geothermal resources: The TCEQ will have authority under the Water Code to adopt equivalent rules for permitting and regulating CO₂ injection in Class VI wells after EPA adopts the new rules if the jurisdiction remains as it is currently set out in the Water Code under Option 2. The RRC also would have the necessary authority under the Water Code under Option 1.

The committee wishes to thank the staff members of General Land Office, the Railroad Commission of Texas, the Texas Commission on Environmental Quality, and the Bureau of Economic Geology at the University of Texas at Austin for their hard work in preparing the report required by S.B. 1387.

Examples of Other State Statutes relating to Carbon Capture and Sequestration

State	Statute	Comment¹
Colorado	Section 40-2-123, Colorado Revised Statutes	New energy technologies, among other provisions.
Georgia	Sections 12-6-220 - 12-6-232, Official Code of Georgia	Georgia Carbon Sequestration Registry Act.
Illinois	20 Illinois Compiled Statutes § 5005 (Public Act 096-0754)	Creates the Carbon Capture and Sequestration Legislation Commission Act; requires the commission to file a report with the general assembly on carbon capture and sequestration legislation. Scheduled to be repealed on January 1, 2011.
Kansas	Sections 55-1637 – 55-1640, Kansas Statutes	Establishes the carbon dioxide injection well and underground storage fund in the state treasury.
	Section 79-32, 256, Kansas States	Relating to income tax on carbon dioxide capture, sequestration or utilization machinery or equipment (accelerated depreciation and a deduction).

State	Statute	Comment¹
	Section 79-233, Kansas Statutes	Relating to a property tax exemption for carbon dioxide capture, sequestration or utilization property.
Louisiana	Sections 30:1101 – 30:1111, Louisiana Revised Statutes	Establishes the Louisiana Geologic Sequestration and the Carbon Dioxide Geologic Storage Trust Fund, among other provisions.
	Section 30:22, Louisiana Revised Statutes	Underground storage of natural gas, liquid hydrocarbons, and carbon dioxide.
	Section 30:23, Louisiana Revised Statutes	Underground storage of liquid or gaseous hydrocarbons or both or carbon dioxide.
Mississippi	Section 27-65-19, Mississippi Code	Relating to a sales tax on public utilities.
Montana	Section 15-6-158, Montana Code	Relating to the description and taxable percentage of a certain class of property that includes pipelines and equipment relating to carbon sequestration, among other provisions.
	Section 69-8-421, Montana Code	Approval of electricity supply resources.
	Section 82-11-123, Montana Code	Requirements for oil and gas and carbon dioxide injection.

State	Statute	Comment ¹
	Sections 82-11-180 – 82-11-184, Montana Code	Relating to preservation of property rights under certain provisions and the issuance of a permit for a carbon dioxide injection well pursuant to those provisions; a geologic storage reservoir administrative fee and the establishment of a geologic storage reservoir program account in the special revenue fund; liability for carbon dioxide during injection; certificate of completion, department of environmental quality participation, and transfer of liability; and conversion of enhanced recovery wells.
Nebraska	Sections 2-5301 – 2-5306, Nebraska Revised Statutes	Relating to the creation of the Carbon Sequestration Advisory Committee and the Carbon Sequestration Assessment Cash Fund and the powers and duties of the Director of Natural Resources, among other provisions
New Mexico	Section 7-2-18.25, New Mexico Statutes	Advanced energy income tax credit.
	Section 7-2A-25, New Mexico Statutes	Advanced energy corporate income tax credit.
	Section 7-9G-2, New Mexico Statutes	Advanced energy combined reporting tax credit; gross receipts tax; compensating tax; and withholding tax.

State	Statute	Comment ¹
	Section 62-6-28, New Mexico Statutes	Clean energy investments and the department of environmental certification, among other provisions.
North Dakota	Sections 38-22-01 – 38-22-23, North Dakota Century Code	Relating to carbon dioxide underground storage.
Oklahoma	Sections 27A-3-5-101 – 27A-3-5-106, Oklahoma Statutes	Relating to the Oklahoma Carbon Capture and Geologic Storage Sequestration Act.
Pennsylvania	66 Pennsylvania Statutes and Consolidated Statutes § 2815	Carbon dioxide sequestration network.
	71 Pennsylvania Statutes and Consolidated Statutes §§ 1361.1 – 1361.8	The Pennsylvania Climate Change Act.
Texas	Section 382.501 – 382.510, Health and Safety Code	Offshore geologic storage of carbon dioxide.
	Sections 119.001 – 119.007, Natural Resources Code	Ownership of carbon dioxide captured by a clean coal project.

State	Statute	Comment ¹
	Sections 120.001 – 120.004, Natural Resources Code (Chapter 120, as added by Chapter 224, Sec. 7, Acts of the 81st Legislature, Regular Session, 2009)	Ownership and stewardship of anthropogenic carbon dioxide.
	Sections 120.001 – 120.004, Natural Resources Code (Chapter 120, as added by Chapter 1109, Sec. 3, Acts of the 81st Legislature, Regular Session, 2009)	Verification, monitoring, and certification of a clean energy project.
	Section 151.334, Tax Code	Components of tangible personal property used in connection with sequestration.
	Section 202.0545, Tax Code	Tax exemption for enhanced recovery projects using anthropogenic carbon dioxide.
	Section 27.022, Water Code	Jurisdiction over carbon dioxide injection.
	Sections 27.041 – 27.050, Water Code	Geologic storage and associated injection of anthropogenic carbon dioxide.
Utah	Section 54-17-701, Utah Code	Rules for carbon capture and geological storage.

State	Statute	Comment¹
West Virginia	Section 22-11A-1 – 22-11A-9, West Virginia Code	Carbon dioxide sequestration.
Wyoming	Section 34-1-152 – 34-1-153, Wyoming Statutes	Ownership of pore space underlying surfaces; ownership of material injected into geologic sequestration sites; liability for holding interests related to a sequestration site or giving consent to allow geologic sequestration activities.
	Section 35-11-313, Wyoming Statutes	Carbon sequestration; permitting requirements.

¹ The information we provide about a statute's subject matter under the comment column derives from sources provided by the applicable state and may include information from a caption, short title, or other description of a statute's content. We do not independently summarize any statute in this table, and the information we provide, regardless of its source, should not be construed as an interpretation of the statute.

CHARGE 3

Examine the state's portfolio of electric generation resources, including traditional sources, emerging renewable technologies, and energy efficiency. Determine whether the existing state regulatory programs and incentives are adequate to meet the energy needs of the future. Consider factors relating to reliability, requirements for additional transmission, or auxiliary services. *Joint Interim Charge with House Committee on State Affairs.*

ISSUE SUMMARY

In 1975, the Texas Legislature enacted the Public Utility Regulatory Act (PURA) and created the Public Utility Commission of Texas (PUC) to regulate the rates and services of telephone utilities statewide, electric utilities in unincorporated areas, radio-telephone statewide, and water and sewer utilities in unincorporated areas.⁶ Due to the deregulation movement in banking, telecommunications and electricity, the Texas Legislature passed S.B. 7 in 1999, which restructured the electric utility industry and provided for retail customer choice. Effective January 1, 2002, electric customers within the Electric Reliability Council of Texas (ERCOT) had a choice of retail electric providers.⁷

ERCOT is governed by a board of directors made up of independent members, consumers and representatives from each of ERCOT's electric market segments. ERCOT manages the flow of electric power to 22 million Texas customers - representing 85 percent of the state's electric load and 75 percent of the Texas land area. As the independent system operator for the region, ERCOT schedules power on an electric grid that connects 40,000 miles of transmission lines and more than 550 generation units. ERCOT also manages financial settlement for the competitive wholesale bulk-power market and administers customer switching for 6.5 million Texans in competitive choice areas.⁸

ERCOT's Technical Advisory Committee has several subcommittees and makes recommendations to the board. The board appoints officers to manage the day-to-day operations of ERCOT. The PUC has jurisdiction over ERCOT. The diagram below illustrates the Texas electric market and depicts the jurisdiction of ERCOT.⁹

6 The Public Utility Commission of Texas. *Self Evaluation Report*, September 2009, <http://www.sunset.state.tx.us/82ndreports/puc/ser.pdf>. The PUC was not given authority to regulate municipally owned utilities or political subdivisions such as municipal utility districts or public utility districts. However, the PUC was given appellate jurisdiction of municipal decisions involving investor-owned electric utilities.

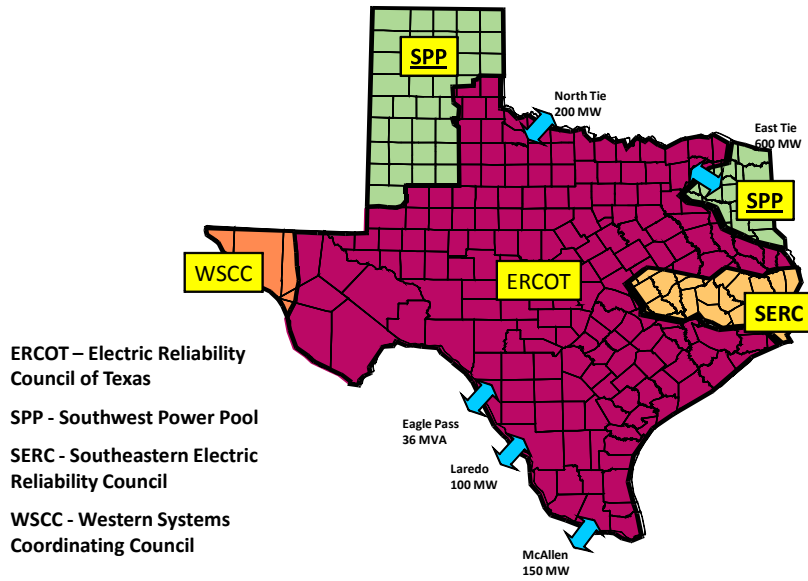
7 *Id.*

8 Electric Reliability Council of Texas. Available at: <http://www.ercot.com/about/>

9 *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Barry Smitherman, Public Utility Commission).

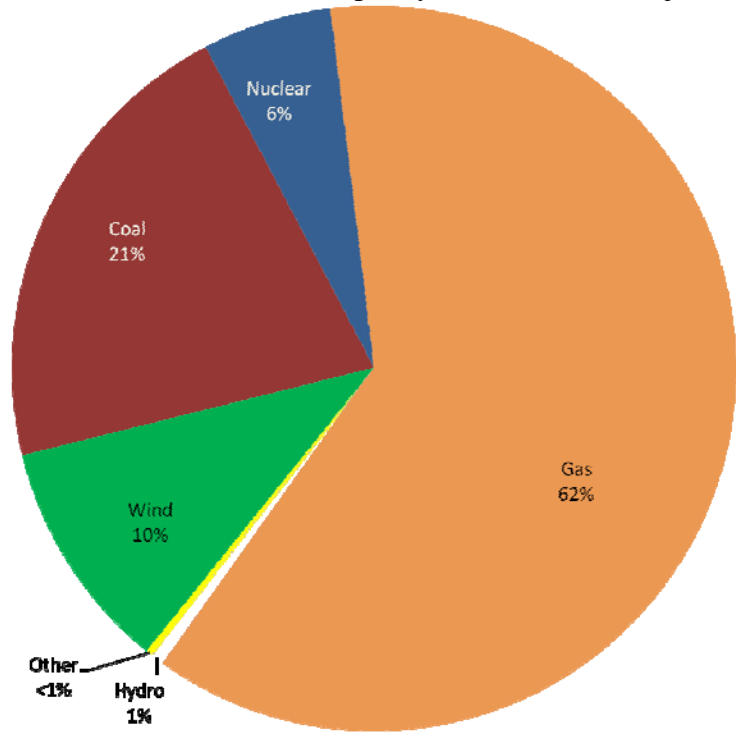
Texas Electric Market

A Puzzle with Four Pieces



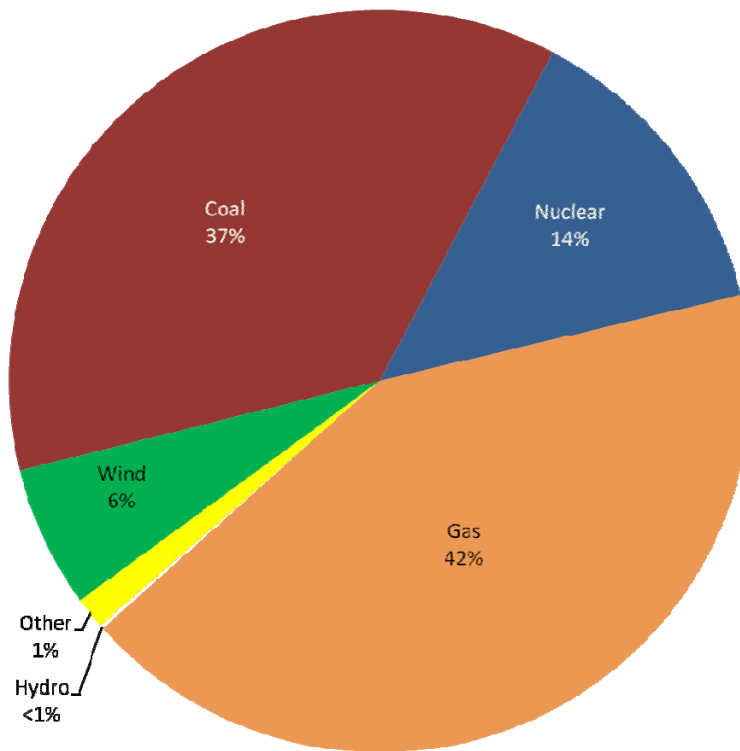
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The diagram below shows the installed capacity within ERCOT’s jurisdiction as of April 2010.¹⁰



¹⁰ Examining the State’s Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Trip Doggett, Electric Reliability Council of Texas).

The following diagram illustrates the 2009 Energy Production by fuel type within ERCOT's jurisdiction as of April 2010.¹¹



In 2008, the Select Committee on Electric Generation Capacity and Environmental Effects (select committee) examined the state's generation capacity and impact over the next 50 years.¹² The select committee studied traditional generation and renewable technologies and their future demand for them.

TRADITIONAL GENERATION

Traditional generation includes natural gas, coal, and nuclear.

NATURAL GAS

Natural gas plants currently are the main source of Texas' electric and actual generation capacity. Across the state, 77 new natural gas plants have come online since 1995 with another

11 *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Trip Doggett, Electric Reliability Council of Texas).

12 Select Committee on Electric Generation Capacity and Environmental Effects, *Interim Report to the 81st Legislature*, Texas House of Representatives, January 2009. Available at:

<http://www.house.state.tx.us/committees/reports/80interim/Electric-Generation-Capacity-And-Environmental-Effects.pdf>.

twenty-four projected to come online between 2009 and 2012.¹³ A decade ago, there was a heightened optimism regarding the future of natural gas. This was based on assumptions projecting high growth rates of natural gas use in electric generation and continued growth in domestic production and an increase in Canadian imports. However, between 2001 and 2008, projected domestic production of natural gas dropped substantially (more than 13 trillion cubic feet). Two factors contributed to this: (1) an increase in the price of natural gas; and (2) the availability of substitute fuels for electric generation, such as coal. In addition, domestic production is expected to decline steadily falling below 20 trillion cubic feet by 2030. Even though, while prices have risen, demand for natural gas capacity has increased. The primary causes of increased price and demand are anticipated federal restrictions on the carbon dioxide emissions of electric generators that are expected to spur the installation of natural gas and combined cycle units.¹⁴

Nationally, among the lower 48 states, there has been an increase in natural gas production, with Texas being the largest producer (one-third of all U.S. production). Horizontal drilling in the Barnett Shale has been a major factor. However, the high volatility of the price of natural gas has led to pricing uncertainty in the Texas electric market: consumers cannot rapidly switch fuel sources and the current infrastructure across the United States is already operating near full capacity.

Furthermore, natural gas is highly subject to weather-related events, such as hurricanes. National economic conditions, and market conditions for other electric generation fuels, also have an effect on the price of natural gas.

COAL

In 2008, the select committee found that prices for coal had doubled in 2006 and 2007 and as the price of natural gas went down, utilities increasingly depended on the less capital intensive generation capacity of gas.¹⁵ Also, recent changes at the federal level and decisions by the United States Supreme Court and the EPA signal a trend that does not favor emissions-intensive generation sources such as coal.¹⁶

The fuel costs for conventional coal plants average around \$40 per megawatt hour of electricity. There are concerns about the environmental impact of electric generation from coal, such as the release of mercury and particulate matter and carbon dioxide emissions. Clean coal technologies

13 *Id.*

14 Select Committee on Electric Generation Capacity and Environmental Effects, *Interim Report to the 81st Legislature*, Texas House of Representatives, January 2009. Available at: <http://www.house.state.tx.us/committees/reports/80interim/Electric-Generation-Capacity-And-Environmental-Effects.pdf>. The Congressional Budget Office ("CBO") estimates the price per megawatt hour of electricity generated by conventional natural gas to be \$40 (in 2006 dollars), although the report notes that the long-term price for natural gas has been notoriously difficult to predict.

15 *Id.*

16 *Id.* The potential impact of federal cap and trade legislation, providing for stricter caps on the amount of carbon generation sources are allowed to produce, will necessitate the need for coal-fired generators to put more capital into retrofitting their older plants and developing new forms of carbon capture and sequestration. If these regulations make the price of coal prohibitively expensive, then generators might be willing to rely more heavily on natural gas as a bridge fuel until new technologies and demand reduction programs go into effect.

that are meant to curb such emissions will likely not become commercially available until 2015 but not viable until near 2020 due to lack of funding for new research.¹⁷ However, due to the nation's high use of coal in electric generation (more than half) it cannot be replaced as a fuel source in the near term.¹⁸

NUCLEAR

Nuclear energy has experienced resurgence due to increased electricity demands and the current legislative climate.¹⁹ Nuclear power plants were built mainly between 1966 and 1977. Nuclear power's ability to use an abundant resource to produce energy with relatively lower emissions makes it an attractive option. However, the public perception and investor costs are difficult factors to overcome for potential new plants seeking permits to build. For consumers there are concerns based on memories of notorious accidents including those at Three-Mile Island in 1979 and Chernobyl in 1986. Furthermore, the estimated costs related to security and monitoring systems in order to protect against potential threats are about five times the cost of a natural gas plant and about twice the cost of a conventional coal plant.²⁰

STATE INCENTIVES FOR TRADITIONAL GENERATION²¹

Texas Natural Gas Severance Tax Incentives

The High-Cost Gas program provides a tax incentive for high-cost gas wells based on the ratio of each well's drilling and completion costs to twice the median cost for all high-cost Texas gas wells submitted in the prior fiscal year.

The Two-Year and Three-Year Inactive Wells program provides a 10-year incentive for gas severance taxes from a well that the Railroad Commission of Texas has certified as not producing gas for two years preceding the date of the application for certification; in other words, the incentive applies to dormant wells brought back into production.

The Flared/Released Gas program provides a lifetime incentive for gas produced from an oil well and brought to market and that previously had been released into the air for 12 months or more.

Texas Franchise Tax Deductions for Natural Gas Production

In the gas industry's case, the cost of goods sold includes depreciation, depletion and amortization necessary for the production of goods. It also includes intangible drilling and "dry hole" costs (the cost of drilling wells that do not produce sellable gas) as well as geological and geophysical costs incurred to identify and locate property with the potential to produce minerals.

Under certain conditions, gas producers are allowed to exclude certain gas revenues from total

¹⁷ *Id.*

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Texas Comptroller of Public Accounts: The Energy Report 2008. Available at:*

<http://www.window.state.tx.us/specialrpt/energy/>

revenue when they calculate their taxable margin. Those conditions are that the average closing price of gas is below \$5 per 1 million Btus. The revenue excluded would be that derived from a gas well producing an average of less than 250,000 cubic feet (250 mcf) a day over a 90-day period.

No State Subsidies for Coal or Nuclear

Texas does not offer subsidies to the coal or nuclear industries.

RENEWABLE GENERATION

In the quest for cleaner energy, the emergence of renewable technology provides an attractive solution. The Texas Legislature has supported renewable energy and has adopted several policies. One such policy that has received support in Texas is the implementation of Renewable Portfolio Standards programs ("RPS"). An RPS is a requirement on retail electric suppliers to supply a minimum percentage or amount of their retail load with eligible and pre-defined sources of renewable energy. Nationally, state regulators and policymakers tend to favor RPS programs because they establish goals without prescribing the types of energy that must be used to meet those goals.²²

WIND

With a zero cost for fuel, wind has often been touted as more cost-effective than conventional generation. Because wind is the most economically viable among renewable power options due to government subsidies, it has become by far the most widely used renewable generation technology. Texas began adding wind-generated electricity to the grid in 1993 and has subsequently established greater capacity and generation capabilities.²³ Regulators must take into consideration more variables when considering how much wind to expect. For example, ERCOT must consider securing alternate sources of generation (ancillary services) when periods of hot, cold, or uncertain weather exist.

Wind provides ideal energy during the fall and spring, especially at night. Additionally, once industry-scale energy storage becomes viable or if demand increases for needs such as plug-in/hybrid vehicles, which would mostly charge at night, then wind can significantly meet demand.

BIOMASS

Biomass generation uses wood, dried switch grass, and other agricultural products to create energy.²⁴ Since these materials have a much lower heat value than other combustibles, it takes a much larger amount of them to create the same amount of electricity. On the other end of the spectrum, landfill gas has roughly double the heat content of coal, which makes it the renewable

22 Select Committee on Electric Generation Capacity and Environmental Effects, *Interim Report to the 81st Legislature*, Texas House of Representatives, January 2009. Available at: <http://www.house.state.tx.us/committees/reports/80interim/Electric-Generation-Capacity-And-Environmental-Effects.pdf>.

23 *Id.*

24 *Id.*

fuel of choice where it is available. Biomass production is generally perceived as a small-scale enterprise because of handling and transportation issues. For this reason, biomass projects have lacked interested investors due to higher investment costs and lower expectations for returns.

Transmission-Level Non-Wind Renewable Capacity (MWs)²⁵

Technology	Existing	New	Announced
Landfill	37	80.3	0
Biomass	12	145	140
Hydro	570	33.1	28
Solar	0	1.2	71

GEOHERMAL

Geothermal power holds a unique place within the renewable industry in that it provides dispatchable baseload power that can be produced at much lower costs than other renewable sources.²⁶ Currently available geothermal has some major drawbacks since it is only economically possible near geologic faults and vents. Emerging technologies have been shown to allow geothermal generation from cooler sites than the 200-300 degrees Fahrenheit required by current methods.

Texas has 8,000 oil wells capable of producing hot water at 190 degrees, and with technologies being developed, that hot water could be utilized to generate electricity. However, the electricity produced would largely go towards powering the well's equipment; since the amount of energy produced would be relatively low, it would not be possible to transmit it. Major barriers on a

²⁵ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources, 2009 Leg., 81st Sess. Interim (Tx. 2010)* (statement of Barry Smitherman, Public Utility Commission).

²⁶ Select Committee on Electric Generation Capacity and Environmental Effects, *Interim Report to the 81st Legislature*, Texas House of Representatives, January 2009. Available at:

<http://www.house.state.tx.us/committees/reports/80interim/Electric-Generation-Capacity-And-Environmental-Effects.pdf>.

commercial or industrial scale will hinge on finding locations for economical energy production with minimal interconnection costs as well as high capital costs for construction. Other barriers include dealing with environmental concerns due to the requirements of handling a corrosive fuel containing some heavy metals.

SOLAR

While costs to generate solar energy continue to decrease, the costs remain substantial. Industrial-scale solar also faces barriers similar to wind and geothermal in that transmission to these sites can be difficult and expensive. However, solar has the advantage that it can be used as an on-site generation resource. Solar resources also play a complementary role to the most widely deployed renewable resource, wind. When wind energy is at its lowest generation level at peak demand times, solar tends to be at its highest.²⁷ This also gives solar the advantage of being able to shave some of the peak load away from expensive natural gas peaking plants.

STATE INCENTIVES FOR RENEWABLE ENERGY²⁸

Texas does not have a tax exemption program at this time that provides funding of renewable energy equipment on an individual basis. However, there are a few allowable tax exemptions and deductions.

Franchise Tax

Deduction: Cost of Solar Energy Device From Taxable Capital - Tax Code, Section 171.107.

Texas allows a corporation or other entity subject to the state franchise tax to deduct the cost of a solar energy device from the franchise tax. Entities are permitted to deduct 10 percent of the amortized cost of the system from their apportioned margin.

For the purposes of this deduction, a solar energy device means "a system or series of mechanisms designed primarily to provide heating or cooling or to produce electrical or mechanical power by collecting and transferring solar-generated energy. The term includes a mechanical or chemical device that has the ability to store solar-generated energy for use in heating or cooling or in the production of power." Under this definition, wind energy is also included as an eligible technology.

Exemption: Corporation With Business Interest in Solar Energy Devices, Tax Code, Section 171.056.

Texas offers a franchise tax exemption for manufacturers, seller, or installers of solar energy systems, which also includes wind energy as an eligible technology.

²⁷ *Id.*

²⁸ Texas Comptroller of Public Accounts: *The Energy Report 2008*. Available at: <http://www.window.state.tx.us/specialrpt/energy/>

Property Tax

Exemption: Solar and Wind-Powered Energy Devices, Tax Code, Section 11.27.

The state also offers a 100 percent property tax exemption on the appraised value of an on-site solar, wind, or biomass power generating device that is primarily for the production and distribution of thermal, mechanical, or electrical energy for on-site use or devices used to store that energy. "Solar" is broadly defined to include a range of biomass technologies.

Example: If a property is valued and taxed at \$150,000 and the property owner adds a \$15,000 system that increases the property value, the exemption applies to the added value. With the exemption the property owner will only be taxed on the property value before the system was added.

Abatement: Chapter 312 or Chapter 313 Property Tax Agreements.

Many renewable and traditional energy projects are eligible to participate in property tax abatement or property value limitation programs.

Under Chapter 312, Tax Code, cities, counties, and other taxing districts (except school districts) may provide Property Tax Abatements, which are agreements between a taxpayer and a taxing unit that exempt all or part of the increase in value of real property and/or tangible personal property from taxation for a period not to exceed 10 years.

Under Chapter 313, Tax Code, school districts may provide Property Value Limitations to businesses by offering a tax credit and an eight-year limitation on the appraised value of a property for the maintenance and operations portion of the school district property tax. In exchange for the value limitation and tax credit, the property owner must enter into an agreement with the school district to create a specific number of jobs and build or install specified types of real and personal property worth a certain amount.

Committee Hearing

The House Committee on Energy Resources and the House Committee on State Affairs held a joint public hearing at the State Capitol on April 29, 2010, to hear invited testimony on interim charge #3. The invited people testified in three panels: regulatory/agency, traditional generation, and renewable generation.²⁹

Regulatory/Agency Panel

The agency panel was comprised of Chairman Victor Carrillo (Railroad Commission of Texas), Chairman Barry Smitherman (Public Utility Commission) and Trip Doggett (Chief Executive Officer, Electric Reliability Council of Texas). Mr. Carrillo testified on traditional energy sources in Texas. Mr. Carrillo began with a brief overview stating that Texas is a "Mature"

29 Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources, 2009 Leg., 81st Sess. Interim (Tx. 2010).

Producing Province with over 100 years of oil and natural gas drilling, and currently has over 150,000 active oil wells and over 100,000 natural gas wells (with this number continuing to grow).³⁰ He stated that Texas currently is the number one producer of oil and natural gas in the country and also contains the largest pipeline infrastructure. Texas is also the leading producer of wind power, most located in West Texas.

Mr. Carrillo testified that Texas would rank third in the world in 2009 in natural gas production, with 7.6 trillion cubic feet. Mr. Carrillo added that the number of oil and gas drilling permits issued from 2002 to 2008 had more than doubled, from 9,716 to 24,073, before dropping to 12,212 in 2009. This was attributed to an increase in natural gas prices during that year. However, current natural gas prices began to decrease in 2009, at about \$4 per ncf, present an increased potential for displacing coal-fired generation.³¹

The committees asked if the supply of natural gas will meet demand in Texas for the foreseeable future. Mr. Carrillo said that it will and he then discussed several measures of industry activity related to natural gas rig activity and price. He stated the commission predicts natural gas production to exceed eight trillion cubic feet (relating back to peak production levels in 1972).³² He stated much of this production can be attributed to the Barnett Shale and new technologies to develop it. Regarding the natural gas shale formations, Mr. Carrillo discussed Barnett, Haynesville, and Eagleford. He stated that Barnett development was highly technology driven, with horizontal and hydraulic fracturing, and multi-well drilling. All formations are estimated to contain high levels of natural gas reserves. Currently, Texas has about 80 trillion cubic feet in natural gas reserves. Mr. Carrillo predicted innovative techniques will lead to increased reserve levels.

Concerning electric generation and consumption from natural gas sources, Mr. Carrillo predicted, based on the previous discussions, that the percentage use should increase over the next few years (based on adequate supply and stable prices). Shale gas is expected to make up 50 percent of Texas' supply portfolio by 2030. National estimates of natural gas supplies are 3,000 trillion cubic feet, or enough to power the country for over 100 years (based on current rates of consumption).

The committees asked whether Texas had adequate supply of natural gas, which affects price. Mr. Carrillo stated that the supply was present, regardless of the price. While, he could not predict future natural gas prices, he said the price point would have to make further exploration worth the risk (\$5 to \$6) without being too costly for the consumers. The committees asked about production estimates in Eagleford Shale vis-à-vis Barnett Shale, where the former lacks an urban population. Mr. Carrillo stated he had only speculative estimates, though the potential was huge because of its rural location. The committees inquired into any legal and regulatory developments that could impede development in the Eagleford. Mr. Carrillo stated that having a good predictable regulatory framework was the key to developing the Eagleford.³³

30 *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Victor Carrillo, Railroad Commission).

31 *Id.*

32 *Id.*

33 *Id.*

Texas is the number one generator of wind power at 10,000 MW of installed capacity.³⁴ Wind comprises a small percentage of the power portfolio due to its intermittent nature, grid instability issues due to too much wind at once, and transmission issues.

Chairman Barry Smitherman testified that Texas' population could increase anywhere from 30 to 50 million by 2040.³⁵ He stated the population increase could be addressed in several ways: increasing supply, reducing demand, or some combination of both, using a variety of resources. Mr. Smitherman discussed the market zones of Texas (El Paso, the Panhandle, North East, the South East, and ERCOT), and said that the first four were vertically integrated and fully regulated by PUC; while ERCOT remained deregulated. The ramification is that PUC cannot force generators to build plants (which are often built based on economic projections).

Mr. Smitherman stated Texas's current energy portfolio is 42 percent natural gas, 37 percent coal, 13.5 percent nuclear, 6 percent wind, and the rest is other.³⁶ The U.S. portfolio is 48 percent coal, 20 percent natural gas, 20 percent nuclear, 7 percent hydro, and 1-2 percent wind. Because of the high use of natural gas in Texas, one of the objectives could be to export Texas natural gas to the rest of the country. Mr. Smitherman stated the price of natural gas is roughly tied to electric rates in the ERCOT market, though this connection was being diminished as non-natural gas forms of production were being brought online. The building of the CREZ transmission grid allows for wind energy to be moved around the market thus bringing prices down.

Mr. Smitherman stated that ERCOT reserve margin projections going through 2013 were robust but, after recalculations in May 2010, could be reduced in 2014-2015, due to the mothballing of existing plants.³⁷ This could be offset in 2016 and beyond by the construction of an additional plant at the Coletow Creek #2 coal plant, the construction of the South Texas Nuclear Project (STP) #3 and #4 units, and the addition of wind generation capacity.

The committees asked if the addition of sources to Texas' energy mix would still necessitate pricing electricity based on natural gas alone. Mr. Smitherman stated that as more sources are added to the mix, natural gas would be moved off the margin. The committees asked why natural gas pricing was the only model for setting electricity rates. Mr. Smitherman stated a change in the model (from natural gas units to coal units) would result in the generators altering their bidding strategy, offering units at higher prices knowing that the units will be needed to meet demand. Mr. Smitherman quoted a report by Environment Texas, stating that Texas' per capita emission reductions, from 2004-2007, were second only to New York, attributable to continued addition of natural gas and wind power to Texas' fuel mix.³⁸ Furthermore, reduced emissions can be traced to "up-rated" or retrofitted nuclear plants with more efficient (less carbon) output.

³⁴ *Id.*

³⁵ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Barry Smitherman, Public Utility Commission).

³⁶ *Id.*

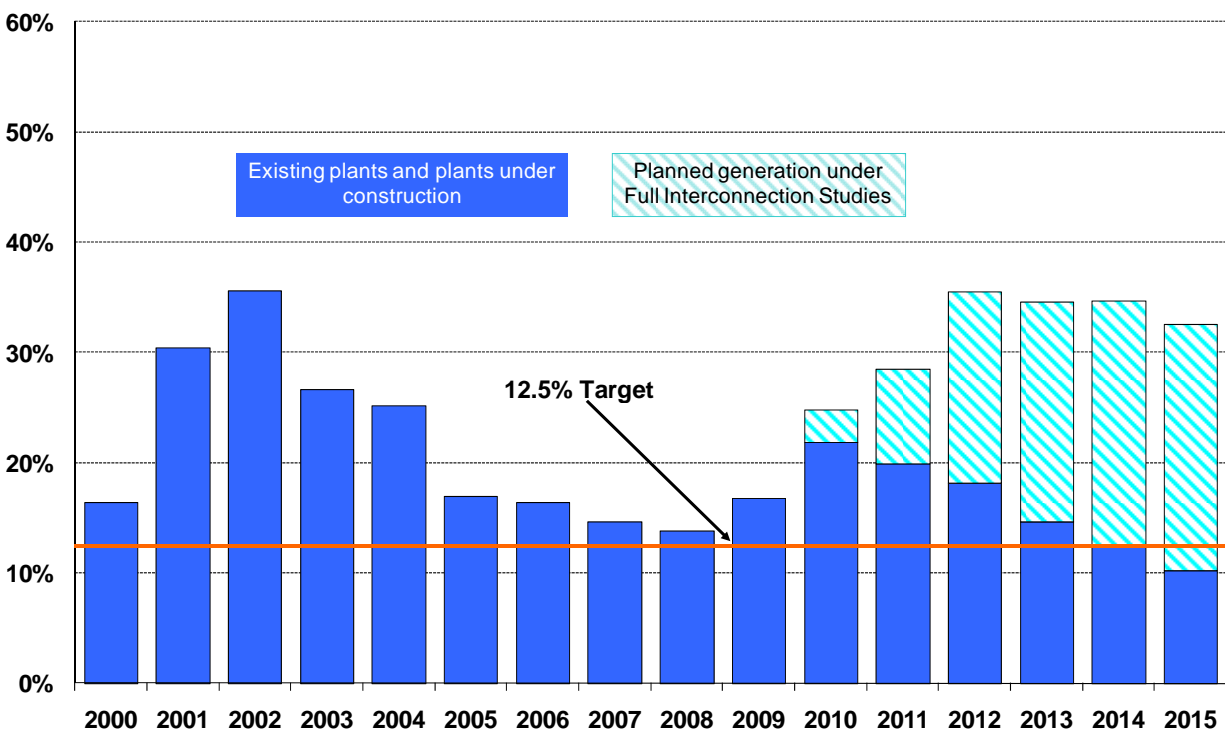
³⁷ *Id.*

³⁸ *Id.*

Currently, about 9,000 MW of wind exists in ERCOT and another 700 MW in the SPP (Panhandle). The future CREZ projects would take the wind generation capacity in ERCOT to 18,500 MW.³⁹ The committees asked what the plan was to combat possible gaps between existing and proposed plants [and also generation capacity through 2016.] Mr. Smitherman stated that as reserve margins decline the industry would respond by building more capacity to meet the demand.

Trip Doggett testified that Texas' reserve margins should remain steady through 2016.⁴⁰ Mr. Doggett analyzed snapshots of a summer and winter day, breaking down the various energy resources used. Regarding the integration of variable resources, Mr. Doggett stated the issue was planning for the next day, predicting the amount of wind available, and ensuring the availability of other resources to compensate if needed. Mr. Doggett explained that another challenge was real-time management of wind (referred to as "ramp"), the concern being rapid changes in wind. Mr. Doggett restated the importance of a mix of generation technologies to properly integrate Texas' wind resources.

Reserve Margins for Years 2000 through 2015⁴¹



39 *Id.*

40 *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Trip Doggett, Electric Reliability Council of Texas).

41 *Id.*

Mr. Doggett stated that reducing Texas's reliance on natural gas would have positive implications for reliability and price stability and that natural gas provides a flexible supply to overall resources. Mr. Doggett emphasized the need for continued development of conventional generation to meet load growth and also stated that there was a significant amount of generation capacity under research. The committees asked if, because of the added sources to the mix, ERCOT was moving towards more stability in pricing. Mr. Doggett stated ERCOT was working to address transmission issues so that there would be more stability in pricing. One such method was working with transmission owners to set controlled outages in windows where high-capacity demand is not expected. Mr. Doggett stated the biggest risk was outages due to maintenance failures of equipment occurring during long hot or cold spells.⁴²

The committees also questioned whether anything was being done to reduce congestion settlement charges for large users. Mr. Doggett responded that ERCOT was implementing its nodal design, which would more accurately account for congestion on a more granular level.

Traditional Generation Panel

The traditional generation panel included Luke Bellsnyder (Texas Association of Manufacturers), Greg Kunkel (Vice President of Environmental Affairs, Tenaska), Chris Kirksey (Texas Director of Projects, Summit Energy), Barbara Clemenhagen (Vice President of Commercial and External Relations, Topaz Power), Kevin Howell (Executive Vice President and Regional President, NRG), and Mike Sloan (Virtus Energy Research Associates). Luke Bellsnyder testified that reliable low electric costs in Texas was one of the key reasons it is an attractive state for businesses. The committees asked, in comparison to other states, if electricity was lower in Texas for manufacturers. Mr. Bellsnyder cited the Energy Information Administration data from 2008 that stated California was \$8.96 per million btu, New York was \$2.90, and Michigan was \$3.26, compared to \$2.47 in Texas.⁴³ Mr. Bellsnyder added that southeastern states that historically have relied on coal sources will likely see their plants shuttered in the near future due to changes at the state and federal level.

Greg Kunkel provided the committees with updates to Tenaska's carbon capture project, "Trailblazer."⁴⁴ The committees asked how CO₂ is stored. Mr. Kunkel explained that CO₂ is injected into underground formations for geologic storage.

Chris Kirksey discussed the Texas Clean Energy Project (TCEP).⁴⁵ Mr. Kirksey discussed the challenge to TCEP and other base load resources of mitigating the influence of transmission congestion on market prices as ERCOT absorbs additional renewable sources, especially the

⁴² *Id.*

⁴³ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Luke Bellsnyder, Texas Association of Manufactures).

⁴⁴ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Greg Kunkel, Tenaska).

⁴⁵ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Chris Kirksey, Summit Energy).

projected 9,500 MW of wind from the future CREZ projects. Mr. Kirksey discussed possible responses to this challenge, including reduction of capacity and the restructuring of power sales agreements. Mr. Kirksey discussed possible options for the future including: limiting future wind development to just below the transmission congestion break point; building more transmission facilities; and offering discounted congest rights to qualifying base load resources.

Barbara Clemenhagen emphasized the need for new quick-start capacity and flexible generation that would reduce carbon emissions.⁴⁶ Ms. Clemenhagen suggested improvements (beyond nodal markets), such as legislative support to allow scarcity pricing in the market. Scarcity pricing means allowing prices to reflect true prices in the market, i.e. prices at peak times, when capacity is in higher demand.⁴⁷ Quantifying such prices would depend on the sources and market risk.

Kevin Howell provided an update of the South Texas Nuclear Project, including job growth, temporary and permanent, as units #3 and #4 come on-line.⁴⁸ Mr. Howell gave updates on NRG's solar and wind initiatives. He discussed the need for greater clarity from the federal government (EPA) regarding climate change/emissions and the potential for electric vehicle programs.

Mike Sloan discussed the need for increased solar development in Texas.⁴⁹ Mr. Sloan stated that current energy markets in Texas are striving to use the lowest cost energy sources first. Mr. Sloan stated the traditional industry sources of baseload output (24/7) would be replaced with "nimble and flexible" sources. Texas has \$1.4 billion in state and local energy subsidies, with 99.6 percent going towards oil and gas.⁵⁰

Renewable Generation Panel

The renewable generation panel was comprised of Paul Sadler (Wind Coalition), Brad Jones (Vice President of Government Relations, Luminant), Steve Vavrik (Solar Alliance), Luke Metzger (Environment Texas), Tom "Smitty" Smith (Public Citizen), David Stevens (CEO, El Paso Electric), Phil Williams (General Manager, Denton Municipal Electric), Jason Bagley (Government Affairs Manager, Intel), and Dub Taylor (Director, State Energy Conservation Office).

⁴⁶ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Barbara Clemenhagen, Topaz Power).

⁴⁷ *Id.*

⁴⁸ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Kevin Howell, NRG).

⁴⁹ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Mike Sloan, Virtus Energy Research Associates).

⁵⁰ *Id.*

Paul Sadler testified that CREZ transmission is not a subsidy for the wind industry.⁵¹ He stated more money was spent in the last decade on non-CREZ build out (other than transmission lines going to West Texas), than on CREZ. Sadler (quoting a May 6, 2008, Comptroller's report) stated all Texas generation (non-renewable and renewable) sources receive subsidies. At the state and local level, subsidies to renewable and non-renewable energy sources totaled \$1.4 billion--almost all of which, 99.6 percent, went to oil and gas production.⁵² For the federal subsidies, Mr. Sadler stated 55 percent go to fossil fuels and 45 percent go to renewable, with three-fourths of the 45 percent going to ethanol. The committees asked whether a proper equation (mix) could be reached to provide the cheapest and most reliable energy products for consumers and whether Texas legislators and industry are meeting the challenge. Mr. Sadler stated that the right kind of markets is being set up for consumers, including the implementation of new technology such as smart meters and ERCOT's nodal market.

Mr. Sadler stated the wind market was trending in the right direction. The need exists for further development in wind generation in the midwestern states of Kansas, Oklahoma, Nebraska, and Missouri. Those states have developed a priority project transmission plan. The \$3.8 billion plan provides those states with the framework to fully develop their wind energy in order to export that energy to the large East Coast markets. Mr. Sadler stated that such a focus could have an impact on competition for business and federal dollars.

Brad Jones testified that developing energy storage technology in Texas is a way for the state to remain an energy leader.⁵³ Storage would allow for increased use of renewables, especially intermittent sources like wind and solar. Mr. Jones stated that although the technology is not commercially available, but it is close, according to Jones. Mr. Jones discussed several energy storage techniques including: pump hydro storage and compressed air energy storage, which Mr. Jones said is most viable for wind power storage. Once storage technologies are available, Jones stated, they can be used as an alternative to keeping generators online 24/7.

Steve Vavrik discussed the decrease in costs of solar panel production. The committees questioned why it mattered where the market was in terms of selling as opposed to producing the panels.⁵⁴ Mr. Vavrik said transportation costs are a significant factor.

Luke Metzger testified that 2009 was a good year for solar energy.⁵⁵ In 2009, 480 MW of solar was installed, \$1.4 billion in venture capital funding was invested (more than any other green source), and 17,000 direct and indirect jobs were added from the solar industry. Mr. Metzger

51 *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Paul Sadler, Wind Coalition).

52 *Id.*

53 *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Brad Jones, Luminant).

54 *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Steve Vavrik, Solar Alliance).

55 *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Luke Metzger, Environment Texas).

stated that Texas was at risk of falling behind in solar development. Currently Texas has less than 8 MW of solar installed, not enough to rank in the Top 10 solar states.

Tom "Smitty" Smith discussed climate change legislation under consideration in Washington (Kerry-Lieberman and Waxman-Markey).⁵⁶ He stated, depending on which bill passes, Texas can expect a 12 percent to 20 percent reduction in precursor gases, and a 17 percent reduction in overall CO₂. Mr. Smith discussed ideas for reducing CO₂, including energy efficiency, renewable energy, and natural gas. He stated that Texas had dropped CO₂ levels by four percent, second only to New York in terms of reductions.⁵⁷ However, he stated, those gains were wiped away with the 77 million tons of CO₂ from newly permitted coal plants. Mr. Smith stated 23 percent of peak demand could be saved through cost-effective measures. He also discussed how a combination of efficiency, renewable, and Combined Heating and Power plants, could help reduce the growth demand in Texas.

David Stevens discussed financing issues El Paso Electric faced in building new generation facilities.⁵⁸

Phil Williams commented on consumer issues, including reliability and stability in rates.⁵⁹ Denton is diversifying its energy portfolio with 54 percent coming from a joint power agency and 40 percent from a purchase power contract from wind power. Mr. Williams stated no rates were increased by the 40 percent renewable plan and only a slight increase occurred for 100 percent renewable. Mr. Williams also discussed ways in which Denton Municipal Electric worked toward energy conservation.⁶⁰

Jason Bagley discussed Intel's Open Energy Initiative. Bagley stressed the importance of allowing home energy management systems to aid in controlling energy use and consumption. Mr. Bagley stated that 76 percent of electricity in the United States is consumed by buildings.⁶¹ That amount would be larger if not for the use of systems used to minimize waste. Mr. Bagley stated the same level of efficiency has not been achieved in residential homes because of the lack of residential versions of energy management systems. Mr. Bagley discussed some of the key features of those systems including: the ability to view in real-time energy usage information and to control, time shift, and eliminate unnecessary and/or wasteful uses. Consumers would be able to set preferences for energy use.

⁵⁶ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Tom "Smitty" Smith, Public Citizen).

⁵⁷ *Id.*

⁵⁸ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of David Stevens, El Paso Electric).

⁵⁹ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Phil Williams, Denton Municipal Electric).

⁶⁰ *Id.* This was done by providing rebates for solar screens, heaters and panels, insulation, lighting and thermostats, among them. It also included a comprehensive energy audit (free of charge).

⁶¹ *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Jason Bagley, Intel).

Dub Taylor testified about the LoanSTAR financing program and energy audits for public entities. On average, projects have a six-year return on investment but equipment installed during efficiency retrofits usually has a 10-year to 15-year lifespan.⁶² This means the savings are felt long after the loan has been repaid. Cumulative energy savings from the program, since 1990, have been \$300 million. Mr. Taylor also discussed current projects in the area of emerging clean technology and business support, training, and education. The committee questioned about statewide awareness of the State Energy Conservation Office's programs. Mr. Taylor responded that there is not a uniform awareness, and he welcomed the support of the committee in making the office's offerings more public.

⁶² *Examining the State's Electric Generation Resources and Future Demands: Joint Hearing Before the House Comm. on State Affairs and House Comm. on Energy Resources*, 2009 Leg., 81st Sess. Interim (Tx. 2010) (statement of Dub Taylor, State Energy Conservation Office).

RECOMMENDATIONS TO THE 82ND TEXAS LEGISLATURE:

The future energy needs of Texas will be affected by population growth and weather. In order to meet these demands in this deregulated market, Texas will need more traditional and renewable technology. However, investors are worried about the current regulatory and financial requirements involved with such a large investment. When discussing goals to meet future demand, the legislature must balance the needs of the state versus the costs incurred by the investors and ultimately paid by the consumers.

CHARGE4

Consider the establishment of uniform statutes and codes relating to liquid petroleum gas permitting and operations as a means to resolve conflicts of interpretation between state and local jurisdictions.

ISSUE SUMMARY

The liquefied petroleum gas (LP-Gas) industry is regulated by the Railroad Commission of Texas (RRC) and by local governments throughout the state. Chapter 113, Natural Resources Code, gives the RRC statewide authority for LP-Gas rulemaking, and the RRC has adopted the National Fire Protection Association (NFPA) standards to provide safety and regulatory guidance to the LP-Gas industry.

The National Fire Protection Association is an international nonprofit organization that was established in 1896. The company's mission is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating consensus codes and standards, research, training, and education. NFPA is responsible for 300 codes and standards that are designed to minimize the risk and effects of fire by establishing criteria for building, processing, design, service, and installation in the United States, as well as many other countries. Its more than 200 technical code- and standard-development committees are comprised of over 6,000 volunteer seats. Volunteers vote on proposals and revisions in a process that is accredited by the American National Standards Institute.⁶³

The House Committee on Energy Resources held a public hearing in Austin on April 30, 2010, to discuss Interim Charge #4.

The committee heard testimony from the Texas Propane Gas Association. Representatives from the Texas Propane Gas Association stated that many local ordinances are inconsistent and deviate from the international, national, and state standards. One witness cited five cities as having "unreasonable, inconsistent and unfair local rules." For example, he cited a local ordinance that allows the use of propane to heat pools but not homes. He also asked the committee to consider abolishing local regulations that demonstrate a preference for one form of energy over another. Some Texas cities have adopted rules that disallow the use of propane for home use where natural gas is available, even though the availability of natural gas may be based on the requirement that the homeowner bears the cost of installing natural gas service lines. The major recommendation from the Texas Propane Gas Association is to have the state standard be the controlling standard to provide consistency throughout the state and to provide for a process to ensure that any local deviations from that standard be based on science and evaluated by the RRC.

Representatives from the Texas Municipal League, an organization that advocates for many Texas cities, did not provide testimony at the hearing. However, they later stated, "Local flexibility is essential in this area, and municipalities need the continued ability to regulate propane gas based on location and topography in order to ensure public health, safety, and welfare."⁶⁴

63 National Fire Protection Association, 2010 Edition NFPA Codes and Standards Directory, <http://www.nfpa.org/assets/files/PDF/CodesStandards/Directory/NFPADirectory2010.pdf> .

64 Texas Municipal League, http://www.tml.org/leg_updates/legis_update051410d_propane.asp .

RECOMMENDATIONS TO THE 82ND TEXAS LEGISLATURE:

A law may be passed to amend Subchapter C, Chapter 113, Natural Resources Code, to add a new section that states the rules and standards promulgated and adopted by the Railroad Commission of Texas under Section 113.051 preempt and supersede any ordinance, order, or rule adopted by a political subdivision relating to any aspect or phase of the liquefied petroleum gas industry. However, the legislature must decide if the need for a consistent regulatory scheme for the liquefied petroleum gas industry outweighs the preference for local flexibility. The decision is left to the will of the legislature.

CHARGE 5

Monitor the agencies and programs under the committee's jurisdiction.

COMMITTEE WORK

The House Committee on Energy Resources held public hearings on April 29, 2010; April 30, 2010; and November 18, 2010, to discuss various topics related to agencies under the committee's jurisdiction.

Throughout the legislative interim, the committee monitored the Railroad Commission of Texas, the Office of Interstate Oil Compact Commissioner for Texas, the Office of Interstate Mining Compact Commissioner for Texas, the Texas Energy Coordination Council, the State Energy Conservation Office, and the Office of Southern States Energy Board Member for Texas.