



INTERIM REPORT

TO THE 88TH TEXAS LEGISLATURE

HOUSE COMMITTEE ON
STATE AFFAIRS
NOVEMBER 2022

**HOUSE COMMITTEE ON STATE AFFAIRS
TEXAS HOUSE OF REPRESENTATIVES
INTERIM REPORT 2022**

**A REPORT TO THE
HOUSE OF REPRESENTATIVES
88TH TEXAS LEGISLATURE**

**WILL METCALF
CHAIRMAN**

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DANIEL GIESE**



Committee On
State Affairs

November 14, 2022

Will Metcalf
Chairman

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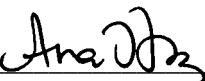
The Honorable Dade Phelan
Speaker, Texas House of Representatives
Members of the Texas House of Representatives
Texas State Capitol, Rm. 2W.13
Austin, Texas 78701

Dear Mr. Speaker and Fellow Members:

The Committee on State Affairs of the Eighty-seventh Legislature hereby submits its interim report including recommendations for consideration by the Eighty-eighth Legislature.

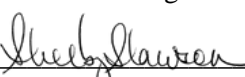
Respectfully submitted,



Will Metcalf

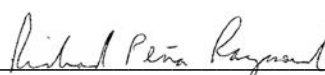

Ana Hernandez

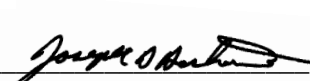

Sam Harless

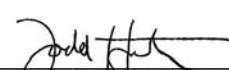

Phil King


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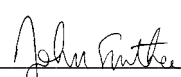

Donna Howard


Richard Peña Raymond


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Todd Hunter


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Ana Hernandez
Vice-Chair

Members: Joe Deshotel, Sam Harless, Donna Howard, Todd Hunter, Phil King, Richard Peña Raymond, Matt Shaheen, Shelby Slawson, John T. Smithee

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INTRODUCTION

On February 4th, 2021, the Honorable Dade Phelan, Speaker of the Texas House of Representatives, appointed thirteen members to serve on the House Committee on State Affairs. The following members were appointed to the committee. Chairman Chris Paddie, Vice-Chair Ana Hernandez, Representative Joe Deshotel, Representative Sam Harless, Representative Donna Howard, Representative Todd Hunter, Representative Phil King, Representative Richard Peña Raymond, Representative Eddie Lucio III, Representative Will Metcalf, Representative Matt Shaheen, Representative Shelby Slawson, and Representative John T. Smithee.

Pursuant to House Rule 3, Section 31, the House Committee on State Affairs has 13 members with jurisdiction over all matters pertaining to:

- (1) questions and matters of state policy;
- (2) the administration of state government;
- (3) the organization, operation, powers, regulation, and management of state departments, agencies, and institutions;
- (4) the operation and regulation of public lands and state buildings;
- (5) the duties and conduct of officers and employees of the state government;
- (6) the duties and conduct of candidates for public office and of persons with an interest in influencing public policy;
- (7) the operation of state government and its agencies and departments; all of above except where jurisdiction is specifically granted to some other standing committee;
- (8) access of the state agencies to scientific and technological information;
- (9) the regulation and deregulation of electric utilities and the electric industry;
- (10) the regulation and deregulation of telecommunications utilities and the telecommunications industry;
- (11) electric utility regulation as it relates to energy production and consumption;

(12) pipelines, pipeline companies, and all others operating as common carriers in the state;

(13) the regulation and deregulation of other industries jurisdiction of which is not specifically assigned to another committee under these rules;

(14) advances in science and technology, including telecommunications, electronic technology, or automated data processing, by state agencies, including institutions of higher education;

(15) the promotion within the state of an advance described by Subdivision (14) of this section;

(16) cybersecurity;

(17) the following organizations and state agencies: the Council of State Governments, the National Conference of State Legislatures, the Office of the Governor, the Texas Ethics Commission, the Texas Facilities Commission, the Department of Information Resources, the Inaugural Endowment Fund Committee, the Sunset Advisory Commission, the Public Utility Commission of Texas, and the Office of Public Utility Counsel.

Following the regular 87th legislative session and the resignations of Representative Chris Paddie and Representative Eddie Lucio III, Speaker Phelan appointed Representative Will Metcalf as Chair of the House Committee on State Affairs. The following members currently serve on the House Committee on State Affairs: Chairman Will Metcalf, Vice-Chair Ana Hernandez, Representative Joe Deshotel, Representative Sam Harless, Representative Donna Howard, Representative Todd Hunter, Representative Phil King, Representative Richard Peña Raymond, Representative Matt Shaheen, Representative Shelby Slawson, and Representative John T. Smithee.

On March 10, 2022, Speaker Phelan released interim charges and tasked committees to study and make recommendations on numerous issues facing the State. The interim charges for the House Committee on State Affairs can be found on the following page.

INTERIM STUDY CHARGES

1. Monitor the agencies and programs under the Committee's jurisdiction and oversee the implementation of relevant legislation passed by the 87th Legislature. Conduct active oversight of all associated rulemaking and other governmental actions taken to ensure the intended legislative outcome of all legislation, including the following:

- HB 5, relating to the expansion of broadband services to rural areas;
- HB 1505, relating to attachments for broadband service on utility poles owned by an electric cooperative and establishing and funding a pole replacement program for deployment of certain broadband facilities;
- SB 2, relating to the governance of the Public Utility Commission of Texas, the Office of Public Utility Counsel, and the Electric Reliability Council of Texas; and
- SB 3, relating to preparing for, preventing, and responding to weather emergencies and power outages. (Joint charge with Committee on Energy Resources)

2. Examine the efforts of power generation facilities to weatherize their facilities.

3. Review the status of projects intended to reduce transmission congestion within the electrical grid.

4. Study the status and adequacy of cybersecurity preparedness among state agencies and contractors. Make recommendations that enhance cybersecurity measures considering evolving threats to Texas' information technology infrastructure.

5. Review the impact of state government procurement of goods and services from businesses and other commercial entities owned or controlled by the Russian government or Russian nationals, and determine the need for restrictions on state government procurement. Consider the impact of any proposed procurement restrictions on state government efficiency and effectiveness and the state's access to scientific and technological advances.

Summary of Committee Activities

The committee held four public hearings during the interim to address interim charges and other matters within the jurisdiction of the committee.

On April 26th, 2022, the committee held its first public interim hearing to address interim charges 4 and 5. It also monitored the implementation of House Bill 5 and House Bill 1505. Both invited and public witnesses had the opportunity to address the committee on the interim charges and bill implementation.

The second public interim hearing was held on June 22nd, 2022. The committee received an update on the ongoing market design of the ERCOT region of Texas and heard testimony from invited and public witnesses.

The following day, June 23rd, 2022, the committee held its third public interim hearing on interim charges 2 and 3. It also monitored the implementation of Senate Bill 2. Invited and public witnesses had the opportunity to address the committee on the interim charges and bill implementation.

To conclude its interim activities, the committee held its final public interim hearing on September 13th, 2022. The committee met jointly with the House Committee on Energy Resources to monitor the bill implementation of Senate Bill 3. The committees jointly heard testimony from invited and public witnesses on the bill implementation.

Video recordings of the interim hearings can be found here:

April 26, 2022

https://tlchouse.granicus.com/MediaPlayer.php?view_id=46&clip_id=23206

June 22, 2022

https://tlchouse.granicus.com/MediaPlayer.php?view_id=46&clip_id=23305

June 23, 2022

https://tlchouse.granicus.com/MediaPlayer.php?view_id=46&clip_id=23307

September 13, 2022

https://tlchouse.granicus.com/MediaPlayer.php?view_id=46&clip_id=23529

The House Committee on State Affairs adopted the following interim report.

CHARGE I: Monitoring Charge

Monitor the agencies and programs under the Committee's jurisdiction and oversee the implementation of relevant legislation passed by the 87th Legislature. Conduct active oversight of all associated rulemaking and other governmental actions taken to ensure the intended legislative outcome of all legislation, including the following:

- HB 5, relating to the expansion of broadband services to rural areas;
- HB 1505, relating to attachments for broadband service on utility poles owned by an electric cooperative and establishing and funding a pole replacement program for deployment of certain broadband facilities;
- SB 2, relating to the governance of the Public Utility Commission of Texas, the Office of Public Utility Counsel, and the Electric Reliability Council of Texas; and
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House Bill 5 & House Bill 1505

BACKGROUND

Quality internet service has rapidly become a vital part of everyday life. According to the Federal Communications Commission's (FCC) National Broadband Plan, "broadband is the great infrastructure challenge of the early 21st century. Like electricity a century ago, broadband is a foundation for economic growth, job creation, global competitiveness and a better way of life."¹ The Texas Utilities Code defines broadband service as internet service with the capability of providing a download speed of 25 megabits per second or faster and an upload speed of three megabits per second or faster. Simply put, broadband is high-speed internet service without significant delays. Policy-makers across the nation and globe have explored strategies to increase access to broadband opportunities. In early 2009, Congress directed the FCC to develop the National Broadband Plan to ensure that every American has "access to broadband capability." Congress also required that this plan include a detailed strategy for achieving affordability and maximizing use of broadband to advance "consumer welfare, civic participation, public safety and homeland security, community development, health-care delivery, energy independence and efficiency, education, employee training, private sector investment, entrepreneurial activity, job creation and economic growth, and other national purposes."²

The FCC's National Broadband Plan identified the following ways that governments can influence the broadband ecosystem: design policies to ensure robust competition and, as a result, maximize consumer welfare, innovation and investment; ensure efficient allocation and management of assets, government controls or influences, such as spectrum, poles, and rights-of-way to encourage network upgrades and competitive entry; reform current universal service mechanisms to support deployment of broadband and voice in high-cost areas; ensure that low-income Americans can afford broadband and support efforts to boost adoption and utilization; and reform laws, policies, standards and incentives to maximize the benefits of broadband in sectors government influences significantly, such as public education, health care and government operations.

The State of Texas is no stranger to this initiative. Texas is a massive state with both wide geographic diversity and a dispersed and diverse populous, and this presents a unique challenge for broadband deployment and investment. Experts say that 2.8 million Texas households do not have access to high-speed broadband and 5.8 million households do not have quality internet. Notably, lack of broadband access disproportionality affects low-income families, rural communities, and communities of color.³

Broadband can be accessed through a variety of services:

- **Fiber-optic technology**, through a series of steps, transmits data through hair-sized glass fibers at speeds exceeding other broadband technologies. While fast, fiber has limitations in its availability due to the high cost of creating its network infrastructure.
- **Cable modem service** enables cable operators to provide broadband using the same coaxial cables that deliver pictures and sound to a user's television.

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- **Digital subscriber line (DSL)** is a wireline transmission technology that transmits data over traditional copper telephone lines already installed to homes and businesses.
 - **Wireless broadband** can be mobile or fixed. It connects a home or business to the internet using a radio link between the customer's location and the service provider's facility. Topography and manmade structures can prevent availability to some wireless networks.
 - **Satellite broadband** is another form of wireless broadband and is useful for serving remote or sparsely populated areas. Satellite broadband service can be delivered either via geostationary satellites covering a fixed area or low earth orbit satellites which are always in motion relative to the ground and are not fixed over a location.
 - **Broadband over powerline (BPL)** is an emerging technology that uses existing low- and medium-voltage electric power distribution networks to deliver broadband to homes via existing electrical connections and outlets. BPL is available in very limited areas.⁴

Reliable internet service increasingly is becoming a necessity for education, healthcare access, workforce development, and many other daily issues. This became even more evident throughout the difficulties of the Covid-19 pandemic. Many Texans have thrived in the digital landscape in their personal and professional lives. Unfortunately, many other Texans have been left out of this digital transformation. Experts refer to this as the digital divide. On one side of the divide are individuals who have access to broadband services and know how to use the internet; on the other side are those who do not have such access or knowledge. Lack of internet access and knowledge has an overwhelmingly adverse effect on a Texan's quality of life and ultimately negatively affects the State of Texas as a whole. The digital divide leads to further economic, social, and political disparities for low-income and underserved populations.⁵

Broadband access is also becoming a necessity for important sectors of the Texas economy:

- **Telemedicine** - The use of online disease management services, electronic health records, home monitoring, and other services can reach Texans who don't have easy face-to-face access to healthcare. These services have been invaluable during the pandemic.
- **Agriculture** - Texas farmers depend as much on technology as any stockbroker or banker. Autonomous machinery, data-driven irrigation sensors, and web-enabled sales platforms are just a few of the 21st century tools behind the scenes of modern "precision" agriculture, which applies high-tech processes to improve the efficiency and effectiveness of planting, nutrient and pest management, and harvesting.
- **Education** - Today's students need to be technologically equipped for success in tomorrow's workforce. Broadband can help them maintain an advantage in finding and applying for jobs and gaining new career skills. Broadband technology also is key to the use of online or "distance" learning, used by elementary- to university-aged students before, during, and after the pandemic.

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- **Business and Tourism** - Digital technologies anchored by high-speed internet can help businesses generate sales, expand their reach in the global marketplace, and make purchases from larger vendor networks. A joint [U.S. Chamber of Commerce and Amazon survey](#) estimated that increased access to digital tools over three years could generate nearly \$6.7 billion in increased annual sales for rural Texas businesses while creating more than 23,000 additional Texas jobs.
 - **Public Safety** - With advancements in technology, first responders have come to rely on commercial wireless services to share video and other important data in order to keep people safe and save lives. These services rely on dependable, broadband to accomplish mission-critical communications that make the success of their efforts possible.
 - **Economic Development** - Broadband connectivity offers more than just improvement in online work. It offers broad economic benefits to communities, including connections to the information economy, the internet of things, the engine of electronic commerce, the world of big data and the visual experience era. As communities seek to attract talent and economic drivers, communities without access to reliable broadband are finding it almost impossible to compete.⁶

Fortunately, the State of Texas is addressing matters concerning broadband expansion. During the 86th legislative session, House Bill 1960, which created the Governor's Broadband Development Council, was passed into law. The duties of the council include research on the progress of broadband development in unserved areas, identifying barriers to residential and commercial broadband deployment in unserved areas, studying technology-neutral solutions to overcome the beforementioned barriers and analyzing how statewide access to broadband would benefit economic development, the delivery of educational opportunities in higher education and public education, state and local law enforcement, and state emergency preparedness and the delivery of health care services, including telemedicine and telehealth.⁷

Legislation was also passed to provide more broadband opportunities. House Bill 2422 requires the Texas Department of Transportation to provide online notice of certain highway construction projects so broadband providers can explore joint trenching opportunities. Senate Bill 14 allows electric co-ops to use existing easements for broadband and fiber.

Most recently, legislation was passed during the 87th regular legislative session to build upon prior broadband expansion efforts. Governor Abbott prioritized broadband expansion by naming it an emergency item during the 87th legislative session. The Legislature passed House Bill 5 which establishes the Broadband Development Office. House Bill 1505 establishes the Texas Broadband Pole Replacement Program and creates a fund solely to be used to support the program.

SUMMARY OF COMMITTEE ACTION

Public Hearing:

The Texas House Committee on State Affairs held a public hearing on April 26, 2022, at 9:00 AM in State Capitol extension room E2.010 to discuss both House Bill 5 and House Bill 1505.

The committee heard invited and public testimony on HB 5 from the following witnesses:

- Acuna, Luis (Texas 2036)
- Baum, Walt (Texas Cable Association)
- Carr, Snapper (Texas Municipal League and Tx Coalition of Cities for Utility Issues)
- Castillo, Korry (Tx Comptroller of Public Accounts)
- Harris, Jennifer (Connected Nation Texas)
- Harvey, Julia (Texas Electric Cooperatives)
- Hiner, Harrison (Communications Workers of America)
- Hunsucker, Mike (Windstream)
- Mason, John (AT&T)
- Scudder, Kenny (AARP)
- Seale, Mark (Self; Texas Telephone Association)
- Stephens, Jerry (Self; VTX Communications)

House Bill 5 established the Broadband Development Office (BDO) within the Texas Comptroller of Public Accounts office. The BDO employs five fulltime employees and anticipates hiring grant management support staff in the future. House Bill 5 required the BDO to create a State Broadband Plan which was released on June 15, 2022. This plan serves as a guide to close the digital divide in Texas. Before the publishing of the State Broadband Plan, Texas was one of only six states without a broadband plan. The plan establishes long-term goals for greater access, adoption, use, and affordability of broadband services.

To develop the State Broadband Plan, the Texas Comptroller used a stakeholder feedback process. The BDO collected feedback from listening tours, roundtable discussions, direct outreach and surveys. Each economic region was visited with attendance by Comptroller Hegar, the BDO and BDO consultant staff. Over 5,600 miles were traveled during the broadband listening tours and included twelve stops in March and April of 2022. Participants included students, senior citizens, educators, public officials, internet service providers, healthcare providers, industry leaders, nonprofit representatives, agricultural producers, community

advocates, and taxpayers. Almost 1,000 Texans attended the listening tours and more than 200 testimonials were given, providing greater insight into access and affordability issues of broadband. The Texas Comptroller hosted five targeted roundtable discussion sessions in each economic region on education, public health, business and industry, the public sector and community organizations. A total of 684 people registered to attend the sessions with nearly 65 hours total of discussion. The BDO also published a statewide survey seeking feedback from Texans on broadband issues within their respective communities. These surveys were available in English and Spanish on an online format, via a toll-free phone number and on paper forms at libraries throughout the state. A total of 16,241 survey responses were received.

Some of the initial observations from stakeholders were that individuals feel that access to high-speed and reliable internet is so important that it should be treated as a utility. Many stakeholders feel that providing broadband to unserved or underserved communities should be a priority. Further, uncertainty in the cost of broadband can be a barrier to investment, and stakeholders, such as businesses, are looking for transparency, clarity and guidance on the expansion of broadband in Texas. Unfortunately, many stakeholders were not aware or taking advantage of subsidies to defer the cost of broadband expansion. Stakeholders also expressed that while hotspots open up more access, they do not solve the overall problem of lack of broadband access at home since many families are forced to leave their household to find an internet connection.

The BDO is also tasked with creating the Broadband Development Map. The Broadband Development Map must indicate designated areas in the state as eligible or ineligible for financial assistance. Eligible areas are defined as an area where less than 80% of addresses have access to broadband services and the federal government has not already awarded funding to that area. The statutory deadline to post the map online is January 1, 2023, while the FCC is expected to publish its maps late 2022. The Request For Offer (RFO) for a mapping vendor closed on March 31, 2022. In August 2022, the BDO announced that the data company LightBox had been selected to develop the state's broadband availability map. LightBox created a data request and submission guide and delivered it to over 200 internet service providers operating in the state (ISPs). As of October 21, 2022, 139 have submitted their data for the state map.

House Bill 5 also created a 10-member Broadband Development Office board of advisors with Texas Comptroller Glenn Hegar as the presiding officer. Other members of the board include Governor appointee Adriana Cruz; Lt. Governor appointees Robert F. McGee, Dr. Scott Muri, and Sergio Contreras; House Speaker appointees Representative Trent Ashby, Mario Robinson, and Alonzo Cantu; and BDO Director Greg Conte as a nonvoting member. The Broadband Development Office board of advisors are statutorily scheduled to meet monthly until one year after the effective date. Following that date, they must meet every two months.

Since the publication of the State Broadband Plan in June 2022, the Texas Comptroller has continued broadband outreach activities. They have developed a monthly newsletter for interested stakeholders and a tool kit for local communities to access additional technical assistance for reviewing plans and applying for grants. In May, the BDO began hosting a monthly roundtable for industry stakeholders, including ISPs, telecom infrastructure and hardware firms, and business solutions groups to discuss the priorities and the progress of the office. BDO further expanded its outreach efforts in October by connecting with local governments through a monthly roundtable to discuss upcoming funding opportunities related to

broadband.

During testimony on House Bill 5, Representative Hunter stressed the importance of broadband stakeholder engagement in the coastal region of the state and the tier 1 counties along the coast as hurricane damage presents a unique challenge to reliable broadband service.

Representative Howard also addressed that broadband expansion must take adoption and affordability issues into account. While many urban areas may not be eligible for broadband expansion funding, there are large areas of non-connectivity because of affordability and accessibility issues. The affordability of broadband is not addressed by last mile connectivity funding, but there may be other avenues for federal funding that could be coming in the future.

The committee also expressed the importance of disseminating information in different languages and the importance of engaging county officials for assistance in broadcasting pertinent information.

Multiple stakeholders testified on the importance of providing the BDO with more employees and resources. They also stressed the need for an adoption of a simplified grant application process.

The committee addressed the important nature of long-haul broadband development, which are networks that span long distances and connect cities and counties throughout the state. In remote areas of the state without infrastructure, it is difficult to determine what specific technology can be utilized for long-haul deployment. It is a challenge to handle the long distance of travel of data to the end-point, and this challenge must be addressed.

Stakeholders stressed the importance of the BDO utilizing funding from the American Rescue Plan Act (ARPA) and the Infrastructure Investment and Jobs Act (IIJA) for broadband grants. The State of Texas is authorized to receive over \$500 million dollars in eligible broadband funding from the federal ARPA legislation and is expected to receive between \$2 and \$3 billion dollars in broadband funding from the IIJA. Unfortunately, according to Connected Nation Texas, this funding is expected to be logjammed or unable to be spent due to misalignment between the provisions of House Bill 5 and recent federal legislation.

According to Connected Nation Texas, the above-mentioned policy logjams include:

1. The BDO created by House Bill 5 is likely to be prevented from establishing grants because the definition of broadband includes satellite and mobile broadband modalities, which already cover most of the state. However, these technologies often do not meet residents' needs because of various factors including latency, weather conditions, foliage, and physical wireless signal interference by wall and roofing materials. The broadband definition stated in House Bill 5 inhibits funding for solving issues by concealing the problem.

House Bill 5 defines broadband solely by a speed criterion (25 Mbps download speed, 3 Mbps upload speed). This limitation on service speeds allows some technologies that are not adequate to serve residents to be qualified as broadband. These technologies include geostationary orbit satellites, low-earth orbit (LEO) satellites, and mobile broadband (broadband access through

mobile devices). These technologies already cover most of the state, and, if broadband is interpreted to include satellite and mobile broadband, all of Texas is technically already served, and no households are eligible for grants from the BDO. The limitation will keep the BDO from having the ability to deploy federal dollars to reach unserved and underserved Texans.

2. BDO grants will have a limited reach as most unserved residents are rendered ineligible under House Bill 5 because they are expected to eventually receive service from the FCC's Rural Digital Opportunity Fund (RDOF) program. Deployments from RDOF are likely to be years away, and many residents face the uncertainty that the program benefits will be implemented at all.

On the surface, avoiding an overlap in coverage to prioritize those who have no coverage at all and save money makes sense. However, before the IIJA, the FCC was the principal funding agency for national broadband expansion. The FCC made commitments to parts of the state to bring these Texans broadband through their Connect America Phase II (CAF II). At the time, they used a 10:1 download/upload ratio which, with the rapid evolution of technology, is no longer sufficient. Another issue with the RDOF is its deployment phase. With the ever-present economywide inflation, faster-than-average inflation in broadband deployment inputs like fiber-optic cables and labor shortages have halted deployment of the program. With commitments still present, the BDO is unable to make additional commitments to expand broadband in those areas.

3. The BDO, under granted authority from House Bill 5, can allocate some \$500 million dollars-plus to the ARPA Coronavirus Capitol Projects Fund (CCPF) in broadband grants to eligible areas. However, BDO program parameters defined by House Bill 5 likely would keep the BDO from distributing the mentioned \$2-\$3 billion dollars in federal funding that will come to Texas through the IIJA Broadband Equity, Access, and Development (BEAD) Program.

To qualify for ARPA CCPF funding, broadband projects need to promise 100/100 download/upload speeds or 100/20 download/upload speeds with eventual promotion to 100/100 speeds. The CCPF funding gives more discretion to broadband development programs. In contrast, the BEAD program establishes more oversight on these projects. The BDP, established by House Bill 5, will not qualify to allocate these BEAD funds for a few reasons. These reasons including the prioritization of private over public providers in a way that BEAD prohibits and the requirement that states have a compliant five-year plan to achieve universal 100/20 speeds. Texas currently does not have a compliant plan in place. BEAD also requires states to prioritize unserved areas lacking 25/3 speeds, and then to target underserved areas lacking 100/20. House Bill 5 prohibits the BDO from making grants in areas where 25/3 is available, so it could not meet the latter requirement.

4. Language in House Bill 5 leaves a major broadband policy change in the hands of a federal agency. Raising target speeds from 25/3 to 100/20 is subject to changes to an FCC definition of the term "broadband." This reliance on the FCC made sense when House Bill 5 was passed because the FCC had the expertise and was then principal federal funding source. However, since House Bill 5 was passed, Congress has made the NTIA the main federal agency to which Texas' broadband definition defers.

The BEAD Program falls under NTIA jurisdiction and House Bill 5 leaves Texas misaligned

with NTIA programmatic parameters. Texas' current definition of broadband relies on the FCC definition potentially leaving billions of dollars in broadband funding in limbo.

The committee stressed the importance of remaining technology-neutral to ensure that there is no preclusion of certain technology. With the rapid changes in technology, the state needs regulations in place which allow for flexibility in adapting to different situations.

Concerns were raised before the committee regarding the lack of service offerings in and on the fringe of urban areas, and there are areas that need better internet connection within urban areas. Within established areas, affordability needs to be addressed. Cities and other local governments can be a partner in the state's goal to advance broadband expansion as cities and counties have extensive planning networks which can be utilized.

The BDO has been researching strategies to give technical assistance and reviewing services for local entities. The BDO has also been working with TxDOT on right-of-way development.

Finally, Representative Hunter addressed that there are no emergency response plans for broadband. The Texas Comptroller's office stated that they can work with the Texas Division of Emergency Management (TDEM) on emergency response plans.

FINDINGS

House Bill 5 is a crucial step in ensuring further broadband expansion in the state of Texas. The Broadband Development Office should continuously update the Legislature on any legislative action that is required for ongoing broadband expansion. The Broadband Development Office should also continue their work on publishing the broadband availability map, establishing the broadband grant program and ensuring that all stakeholders are coordinating in their communications.

House Bill 1505

On House Bill 1505, the committee heard invited and public testimony from the following witnesses:

- Acuna, Luis (Texas 2036)
- Baum, Walt (Texas Cable Association)
- Castillo, Korry (TX Comptroller of Public Accounts)
- Harvey, Julia (Texas Electric Cooperatives)
- Stephens, Jerry (Self; VTX Communications)

The three key milestones associated with the broadband pole replacement program are to develop rules for the program, to apply for funding from the US Department of the Treasury, and to issue the first notice of fund availability for the pole replacement fund. Rules were developed and published by the Texas Comptroller in March 2022. The deadline for Texas to submit its overall program plan for the ARPA Capital Projects Funds (CCPF) to the Treasury Department was September 24, 2022.

The Treasury Department has indicated that standalone pole replacement programs are not an eligible use of CCPF funds and has communicated that on the CCPF website. The Treasury Department indicated that pole replacement is an acceptable cost of CCPF if it is part of a broader program for last mile connectivity.

Senate Bill 8, of the third called 87th special session, set aside \$75 million dollars from the American Rescue Plan Act (ARPA) for the Texas Broadband Pole Replacement Program. Ms. Castillo expressed that the state could apply to the Treasury for the \$75 million dollars and possibly be denied. At the time of the hearing, Ms. Castillo stated that since the deadline to apply for funding was September 2022, the state would apply for the full funds available under the last mile connectivity program. While the \$75 million dollars may not be authorized to be spent under HB 1505, the funds will at least be received from the federal government before the deadline.

Since the hearing in April, the BDO believes that the manner in which the rules were developed for the Texas Broadband Pole Replacement Program goes beyond a simple standalone pole replacement program. The rules were developed to account for last mile connectivity in the state, a top priority for CCPF funding. On September 20, 2022, the Texas Comptroller submitted the program plan to the U.S. Treasury Department requesting \$75 million dollars through the CCPF. Should the Treasury Department deny the BDO's plan to spend the dedicated \$75 million dollars for House Bill 1505, the legislature would need to appropriate those funds to the last mile connectivity program.

FINDINGS

The overall framework and rules for the pole replacement program exist but without the ability to pull funds down from the US Treasury, there is currently no funding for the program.

Senate Bill 2

BACKGROUND

In February 2021, the Texas electrical grid system suffered massive failures as Winter Storm Uri caused frigid temperatures for several days across the state. Every county in Texas was put under a disaster declaration during the storm. Unfortunately, Texans saw that our electrical grid that serves over 90% of Texans was unable to withstand the freezing conditions for a prolonged period of time, leaving millions of people in the dark for several days. Following the storm, Governor Abbott made electrical grid reform an emergency item for the legislature to consider during the 87th Legislative Session. The House Committee on State Affairs held multiple hearings with witness testimony and questions asked of a collection of stakeholders and industry leaders regarding the reasons for these massive failures. As a result of these hearings, the electricity market of Texas has undergone major reform through landmark state legislation. Senate Bill 2, passed during the 87th Legislative Session, is a major piece of legislation which reforms the governance of the Public Utility Commission, the Office of the Public Utility Counsel and the Electric Reliability Council of Texas.

The Electric Reliability Council of Texas

The Electric Reliability Council of Texas (ERCOT) manages the flow of electric power to 26 million Texas customers. This represents about 90 percent of the state's electric load. As the independent system operator for the region, ERCOT schedules power on an electric grid that connects more than 52,700 miles of transmission lines and over 1,030 generation units. It also performs financial settlement for the competitive wholesale bulk-power market and administers retail switching for nearly 8 million premises in competitive choice areas.⁸

ERCOT is a membership-based 501(c)(4) nonprofit corporation, governed by a board of directors and subject to oversight by the Public Utility Commission of Texas and the Texas Legislature. Its members include consumers, cooperatives, generators, power marketers, retail electric providers, investor-owned electric utilities, transmission and distribution providers and municipally owned electric utilities.⁹

Before the passage of Senate Bill 2, the board of directors of the Electric Reliability Council of Texas featured a 16-member group that included six market participants from each of the six electric utility market groups, three consumer representatives, five independent members unaffiliated with any business that ERCOT oversees, the ERCOT CEO and the Public Utility Commission of Texas Chair as a non-voting member. The Technical Advisory Committee (TAC) made policy recommendations to the board of directors. TAC was assisted by five standing subcommittees as well as numerous workgroups and task forces.

The Public Utility Commission of Texas

The Public Utility Commission of Texas (PUC) regulates the state's electric, telecommunication, and water and sewer utilities, implements respective legislation, and offers customer assistance in resolving consumer complaints. In 1975, the Texas Legislature enacted the Public Utility

Regulatory Act (PURA) and created the Public Utility Commission of Texas (PUC) to provide statewide regulation of the rates and services of electric and telecommunications utilities. Although the PUC originally regulated water utilities, jurisdiction was transferred to the Texas Water Commission in 1986. Significant legislation enacted by the Texas Legislature in 1995, along with the Federal Telecommunications Act of 1996 (FTA), dramatically changed the PUC's role by allowing for competition in telecommunications wholesale and retail services, and by creating a competitive electric wholesale market. In 1999, the Texas Legislature provided for the restructuring of the electric utility industry allowing certain customers electric choice.

The PUC's mission and focus have shifted from the regulation of rates and services to oversight of competitive markets and compliance enforcement of statutes and rules for the electric and telecommunication industries. Effective oversight of competitive wholesale and retail markets for electric and telecommunication is necessary to ensure that customers receive the benefits of market competition. For water and sewer utility service, however, the focus remains on the regulation of rates and services.

The PUC continues to perform its traditional regulatory function for electric transmission and distribution utilities across the state. Additionally, while integrated electric utilities outside of the ERCOT power grid remain fully regulated by the PUC, the PUC is increasingly involved in multi-state efforts to implement wholesale electric competitive market structures and transmission planning in the Southwest Power Pool (SPP) and Midcontinent Independent System Operator (MISO) areas.

In 2013, the Texas Legislature transferred the economic regulation of water and sewer utilities from the Texas Commission on Environmental Quality (TCEQ) to the PUC. This transfer involved the programs dealing with the regulation of water and sewer rates and services, Certificates of Convenience and Necessity (CCNs) and sale, transfer, mergers.¹⁰

Prior to Winter Storm Uri, the Public Utility Commission of Texas was governed by three appointees selected by the Governor of Texas.

The Office of Public Utility Counsel

The Office of Public Utility Counsel (OPUC) was created by the Texas Legislature in 1983 to represent the interests of residential and small commercial consumers as a class in utility proceedings in Texas. Pursuant to its current statutory mission, OPUC represents residential and small commercial consumers as a class in the electric, water, wastewater, and telecommunications utility industries in Texas. OPUC primarily represents these consumers before the Public Utility Commission of Texas (PUC), State Office of Administrative Hearings (SOAH), state courts and the Electric Reliability Council of Texas (ERCOT).

In contested case proceedings at the PUC and SOAH and appeals of PUC decisions in state courts, OPUC provides legal representation and technical expertise to represent, protect, and promote consumer interests, which includes ensuring that consumers pay just and reasonable utility rates. In rulemaking and policy projects at the PUC, OPUC provides policy, regulatory, legal and technical expertise to represent, protect, and promote consumer interests, which

includes ensuring adequate customer protection safeguards. At ERCOT, OPUC provides market policy advocacy and technical expertise to represent, protect, and promote consumer interests in the ERCOT governance and stakeholder processes.¹¹

Senate Bill 2 transitioned the Electric Reliability Council of Texas board of directors from a sixteen-member board to an eleven-member board. Under the previous board, the sixteen members were comprised of the ERCOT CEO as a ex-officio voting member, the Public Utility Counsel as an ex-officio voting member, the PUC Chairman as an ex-officio non voting member, six market participants from different sectors of the electricity market, one member representing industrial consumers, one member representing commercial consumers, and five individuals unaffiliated with any electric market segment.

This legislation also created the ERCOT Board Selection Committee. The committee is comprised of one member selected by the Governor, one member selected by the Lieutenant Governor and one member selected by the Speaker of the House. All members selected to this committee must be residents in the state of Texas. The Board Selection Committee must retain an outside consulting firm to assist on selection of members. The current ERCOT Board Selection Committee members are Arch “Beaver” Aplin, G. Brint Ryan, and Bill Jones. These members were respectively appointed by the Governor, Lieutenant Governor, and House Speaker.

As a result of Senate Bill 2, the new eleven member board is comprised of the Chair of the PUC as an ex-officio non-voting member, the Public Utility Counsel as an ex-officio voting member, the CEO of ERCOT as an ex-officio non-voting member, and eight members selected by the ERCOT Board Selection Committee. These eight members selected by the committee must have executive level expertise in finance, business, engineering, trading, risk management, law or electric market design. All board members must be residents. SB 2 also requires the Chair of the PUC and the Public Utility Counsel to be Texas residents.

The current ERCOT Board of Directors as of publication of this report are the following individuals:

- Paul Foster, Chair
- Bill Flores, Vice-Chair
- Carlos Aguilar, Director
- Chris Ekoh, Interim Public Counsel
- Julie England, Director
- Robert "Bob" Flexon, Director
- Peggy Heeg, Director
- Peter Lake, Chairman of the PUC
- Zin Smati, Director
- John Swainson, Director
- Pablo Vegas, President and CEO of ERCOT

On August 16, 2022, The ERCOT Board of Directors announced the hiring of Pablo Vegas as the new President and CEO of ERCOT. Brad Jones, interim CEO, continued to serve until

October 1, 2022. Mr. Vegas officially became ERCOT President and CEO on October 1, 2022.

SUMMARY OF COMMITTEE ACTION

Public Hearing:

The Texas House committee on State Affairs held a public hearing on June 23, 2022 at 10:00 AM in State Capitol extension room E2.010 to discuss the implementation of Senate Bill 2. The committee heard invited and public testimony on SB 2 from the following witnesses:

- Ekoh, Chris (OPUC)
- Jones, Brad (ERCOT)
- Lake, Peter (Public Utility Commission)
- Linenschmidt, Larry (Self)

Peter Lake, Chairman of the Public Utility Commission of Texas expressed that Senate Bill 2 has transformed the ERCOT governing board from stakeholder-led company representatives board into a truly independent board. The newly established ERCOT Board Selection Committee completed their role to select ERCOT board members by the end of 2021. The new ERCOT Board of Directors is comprised of a diverse set of members with expertise in multiple sectors such as engineering, law, technology, oil, gas and power. According to Chairman Lake, ERCOT has benefited greatly from the expertise of these new members.

Brad Jones, then interim CEO of ERCOT, testified that the new ERCOT Board established a new committee focused on reliability and markets, demonstrating their commitment to reliability issues.

Chris Ekoh, interim Public Counsel at the Office of the Public Utility Counsel, testified on the newly-formed ERCOT Board of Directors noting that, while the ERCOT CEO remained a member of the board under SB 2, he or she is no longer a voting member. The Public Counsel position of OPUC remained a voting member. According to Mr. Ekoh, the board prior to SB 2 created a conflict of interest by the hybrid board appointing the same corporate members into the board. SB 2 created a structure where the new directors are unaffiliated and disinterested parties. In regards to the composition of board members, Mr. Ekoh suggested that a compensation package is needed in order to attract new talents to the board that will ensure reliability at an affordable price that consumers deserve.

Representative Howard brought up issues in regards to compensation and retention that these entities face. Chairman Lake stated that the PUC is under-resourced and is in need of talented people. Mr. Jones stated that it is a challenge to compete in the City of Austin on compensation and retention. Mr. Ekoh expressed issues in regards to retaining employees who have expertise in the electricity market. While OPUC cannot compete with private law firms, they should be able to compete with larger state agencies.

Representative King inquired on whether it may be better off to move PUC water rate setting and permitting to another agency. Water rate setting and permitting is a personnel-intensive matter for PUC staff, and there is concern that it may distract attention from electricity matters. According to Chairman Lake, this may be an issue that the Sunset Commission could address. Representative Raymond stressed the importance of issues regarding employee pay. He stated that it is an issue that should be looked into for attracting and retaining employees.

Representative Hunter expressed the importance of these agencies communicating with the legislature and the public and that transparency regarding costs should be addressed going forward. He stated that good communication and transparency can lead to workable solutions.

Chairman Metcalf inquired whether remote work policies can be a factor in combatting employment issues. Both Chairman Lake and Mr. Jones stated that they utilize remote work when they can, but there are specific duties which must be done on-site.

FINDINGS

The ERCOT board has been restructured as required under Senate Bill 2. The legislation has been fully implemented by the Office of Public Utility Counsel, Public Utility Commission of Texas and the Electric Reliability Council of Texas.

These entities serve important roles for the citizens of Texas, and strategies for attracting and retaining employees must be explored. These entities must continue to remain open and transparent to all branches of government and most importantly, the citizens of Texas. OPUC, the PUC and ERCOT must have transparent messaging on the costs consumers are experiencing in the electricity market. They must also continue to have open and transparent communication with the legislature.

Update on the Continued Market Design of the ERCOT Region

BACKGROUND

The Texas electricity market is a deregulated market. Generation companies produce power and contract with retail electric providers to sell electricity on lines owned by transmission and distribution providers. These entities operate separately with no common ownership between the generation and distribution of electricity. Texas is an energy-only market, meaning that generators are only compensated for the power which they produce. Alternatively, many electric markets throughout the United States and world operate as capacity markets. Capacity markets compensate generation companies by their ability and capacity to produce electricity.

The competitive region of Texas is served by the Electric Reliability Council of Texas (ERCOT) ISO. Electric co-operatives and municipally-owned utilities operate within the ERCOT ISO, but customers in those areas cannot choose their service provider. Moreover, while a large portion of Texas is within competitive areas, there are areas in Texas outside of the ERCOT ISO. These areas include southeast Texas that are in the Midcontinent ISO, northeast and northwest Texas in the Southwest Power Pool and the El Paso area in the Western Electricity Coordinating Council. Texas has had a deregulated electricity market since the passage of Senate Bill 7 in 1999.

Since deregulation, massive changes in energy markets and electric technology have occurred. Winter storm Uri exposed some issues in the market design of the ERCOT region. After hours of testimony and debate from industry experts and concerned Texans, the Texas Legislature passed Senate Bill 3 into law. Among its many provisions, Section 14 of SB 3 requires the PUC to require the independent organization certified under Section 39.151 for the ERCOT power region to modify the design, procurement, and cost allocation of ancillary services for the region in a manner consistent with cost-causation principles and on a nondiscriminatory basis. To that end, the PUC has been working to enhance the current market design through phase I reforms and re-design the electric market of the ERCOT region to promote dispatchable generation, ensuring reliability for Texans through future phase II reforms.

SUMMARY OF COMMITTEE ACTION

Public Hearing:

The Texas House Committee on State Affairs held a public hearing on June 22, 2022 at 9:00 AM in the State Capitol Extension room E2.010 to discuss the continued progress of the proposed changes to the ERCOT market design.

The Committee heard invited and public testimony from the following witnesses:

- Bivens, Carrie (Potomac Economics, Ltd.)

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- Brocato, Thomas (Steering Committee of Cities Served by Oncor and The Texas Coalition Affordable Power)
 - Coleman, Katie (Texas Association of Manufacturers)
 - DiCosimo, Vincent (Texas Pipeline Association)
 - Ekoh, Chris (Office of Public Utility Counsel)
 - Harvey, Julia (Texas Electric Cooperatives)
 - Jones, Brad (ERCOT)
 - Lake, Peter (Public Utility Commission)
 - Morstad, Tim (AARP)
 - Reed, Cyrus (Sierra Club)
 - Richmond, Michele (Texas Competitive Power Advocates)
 - Rusing, Shannon (Texas Oil And Gas Association)
 - Webking, Catherine (Texas Energy Association for Marketers)

Public Utility Commission

Peter Lake, Chairman of the Public Utility Commission (PUC), testified on the current status of the proposals for ERCOT market redesign. The PUC held ten public work sessions during the summer and fall of 2021 and heard testimony from experts, deliberated among the commissioners, and received public comment. The final product for market redesign, which was broken down into two phases, was voted on unanimously in December 2021. The PUC discussed market redesign by discussing each of its two phases:

Phase I of the PUC's market redesign plan focuses on operational reliability by enhancing the design of the ERCOT region. This includes the development of a firm fuel product and ensuring that generators have redundant gas supply in the winter. Additionally, it optimized demand response and energy conservation pricing and reformed the industrial demand response program (ERS) which was previously reserved for emergency conditions and therefore not often used. This has been restructured to now be made available before the grid reaches emergency conditions, allowing industrial demand response that has been already paid for to be turned down before asking households to reduce energy consumption. Additionally, Phase I introduced a new voltage support product. The PUC modified the operating reserve demand curve (ORDC), by lowering the price cap from \$9,000/MWh to \$5,000/MWh to reward reliable generation that has

the ability to dispatch when the reserve margin decreases. This ORDC modification will bring generation online much earlier than in the past to ensure that Texas remains out of an emergency and avoids conservation appeals. Finally, the PUC established new ancillary services.

Phase II of the PUC's market redesign plan focuses on market reliability. This includes the adoption of an LSE (Load-side Reliability Mechanism) and a backstop reserve service. The backstop reserve service includes a few thousand megawatts of power that do not participate in the market and are available if all other measures fail. The LSE load-side reliability mechanism is a requirement for companies that provide power to consumers to ensure they procure reliable power for their customers. The PUC is currently working with an outside consultant to analyze these options and formulate a detailed proposal for both the load-side reliability mechanism and the backstop reserve service, expected by fall 2022.

In addition to the two phases of the market redesign plan, the PUC also emphasized the change in ERCOT's operational posture, which builds in a bigger margin of safety by buying more reserves and adjusting the amount of power in reserves to real-time market conditions. This also includes operating the ERCOT grid with an abundance of caution. These conservative operations move away from the previously utilized crisis-based model to a reliability-based model.

Representative King raised questions regarding the consultant chosen by the PUC to complete a study on the market re-design. The chosen consultant is Energy Environmental Economics (E3) which is an energy consulting firm. Chairman Lake assured the committee that the consultant is working to build out a product that the PUC desires and the PUC is the ultimate decision maker on any future changes. According to Chairman Lake, E3 is currently not working on any product for any market participant in ERCOT. Representative King also inquired whether an LSE obligation could favor large REPs that own generation assets over smaller independent REPs. Chairman Lake stated that it is a concern that can be mitigated by a "must offer" requirement, meaning that a generator cannot hold back megawatts only for its affiliated retailer. Transparency requirements can also mitigate the concern by allowing participants to see the price and quantity in real-time. Chairman Lake stated that there is no desire to damage the competitive market.

Representative Hunter stressed the importance of the PUC's responsibility to the public of Texas. He suggested that the consultant look into public transparency on energy costs and the importance of the current PUC continuing to communicate with the legislature on issues. Chairman Lake guaranteed that the PUC will provide ongoing transparency on phase II market design and will always drive market design in benefit to consumers and rate-payers.

Representative Howard asked for clarification on whether the state was moving away from an energy-only market to a capacity market. Chairman Lake stated that we are moving back to a reliable energy-only market. In the past, nearly all generation was dispatchable. The introduction of renewable intermittent generation challenged that construct and introduced volatility into the market. According to Chairman Lake, the requirement to be reliable and have on demand power is shifting toward a reliable energy market and not a capacity market. Representative Howard noted that thermal generation is sometimes not be available as well just as intermittent generation. Representative Howard questioned if market re-design in introducing increased costs

to consumers. Chairman Lake stated that increasing margins of safety and operating the grid with caution are cost increases, but he received direction in Senate Bill 3 to meet reliability needs. Future costs incurred must result in enough benefit to consumers to justify the costs. At the time of the hearing, costs of conservative operations had added between \$1.15-\$1.18 to household bills per month, according to Chairman Lake. Chairman Lake emphasized that the state would have faced a black-out or near black-out conditions if this was not done.

ERCOT

Brad Jones, Interim CEO of ERCOT, discussed changes in the market design, emphasizing the focus around improving reliability and communications and restoring public trust and confidence in ERCOT.

ERCOT has been operating more conservatively and has brought more power reserves online. It has improved reliability of transmission to the lower Rio Grande Valley area and in areas along the Gulf Coast to ensure resilience in areas most subject to weather conditions that disrupt power. ERCOT has worked to pull the industry together to make sure that one consistent message is being communicated to consumers during an emergency. Further, it has increased transparency to communicate costs to the public and has initiated an improved and more concentrated geolocated map of the grid to identify critical natural gas. Finally, ERCOT has added eight new board members that are all Texas residents in accordance with Senate Bill 2.

Representative Shaheen asked who will be responsible for handling the market exchange to meet obligations of the LSE obligation under phase II design. ERCOT's expectation is that they will evaluate whether a generator provides reliable service and at what level to the state of Texas. They will then determine how much reliable megawatts the generator can sell on the public market. All transactions will happen outside of ERCOT in a bilateral manner.

Chairman Hunter expressed concern if two large generation companies have subsidiaries that control approximately 80% of the retail market in ERCOT. Mr. Jones stated that he did not know, but that it seemed reasonable. After Representative Hunter asked who that would be, Mr. Jones stated it was the Vistra Corporation and NRG. Chairman Hunter also asked what the previous ERCOT CEO was compensated and what the previous board members of ERCOT were compensated. Finally, Chairman Hunter asked about the concept of a gas desk. Mr. Jones stated that it is something that ERCOT would like to have. According to Mr. Jones, during Winter Storm Uri, ERCOT discovered that they did not have all the necessary information available on their system. They did not know when a gas fuel generator may lose gas supply, when maintenance was occurring on a gas transmission pipeline or when a compressor may be out of service. Mr. Jones proposed a gas desk, which would be a desk within the control room operated 24 hours a day to gather information from the gas industry to ensure they have all the information needed for situational awareness. Mr. Jones stated that ERCOT would be setting up meetings with gas companies and take direction out of the collaborative session through the TERC process. Mr. Jones stated that ERCOT releases whatever information companies need and is working cooperatively with gas companies.

Potomac Economics

Potomac Economics was selected by the PUC to serve as the independent market monitor for the ERCOT region. Carrie Bivens testified regarding Potomac Economics' two main responsibilities for market monitoring. The first responsibility is detecting and preventing market manipulation strategies and abuse of market power, and the second responsibility is evaluating the operation of the wholesale market and proposing changes to the market rules and recommending other measures to enhance market efficiency.

Potomac Economics discussed the conservative operational posture that ERCOT has taken since July of 2021 and the shift in the operating reserve demand curve (ORDC). The results of these changes show that pricing outcomes were disconnected from actual operating conditions at times. This is problematic because an energy-only market design relies on efficient pricing that reflects the reliability needs of the system. Potomac Economics continues to believe that an energy-only market can be successful at managing a change to the grid but it is increasingly incompatible with ERCOT's conservative operational approach. To address these concerns, Potomac Economics recommends the following: (1) implementing real time co-optimization; (2) introducing an uncertainty ancillary service product to increase the flexibility of the system (rather than trying to adapt the current products and taking out-of-market actions); and (3) adopting of a form of capacity procurement that augments the economic signals to ensure the adequacy of ERCOT resources over the long term.

Potomac Economics believes that ERCOT should avoid a piecemeal approach that provides targeted payments to narrowly defined categories of resources when implementing any form of capacity procurement. A well-performing market will facilitate new investment and the retention of existing resources that are needed to increase the reliability when margins are relatively low or falling and to facilitate the retirement of existing resources and not motivate new investment when capacity margins are relatively high.

Chairman Metcalf asked whether any market redesign proposals before the PUC exist in any other markets. Ms. Bivens stated that there are many versions of this LSE obligation proposal. It is somewhat similar to the Australian market, but many proposals are unique to the ERCOT region.

Representative King asked Ms. Bivens her thoughts on how to get more dispatchable energy built. Ms. Bivens stated that since we have an energy-only market, the market can be tweaked to use signals to incentivize investment to meet reliability needs. The current interventions in the market are interfering with those signals, and distorting the energy-only outcomes. According to Ms. Bivens, the only other option is a centralized capacity market where ERCOT accredits capacity based on reliability and purchases capacity on behalf of load serving entities on a forward looking basis. Representative King asked what the impediments are for generators investing into the market by building a gas plant. Ms. Bivens stated, that one of the biggest obstacles is the uncertainty of the market design.

Vice-Chair Hernandez asked whether the independent market monitor takes RUC estimations into account to Chairman Lake's cost per house hold previously stated. According to Ms. Bivens,

RUC costs have more of an indirect cost to consumers by interfering with the overall market.

Texas Energy Association for Marketers

The Texas Energy Association for Marketers (TEAM) is a group of competitive retail electric providers in the ERCOT market. Cathy Webking testified on behalf of TEAM. Retail electric providers believe that the barriers to entry in the market must remain low so customers can have options and that fierce market competition allows for an increase in services and a decrease in cost. TEAM believes that production and sale are best provided by competitive solutions within ERCOT and that customers should not bear the risk of long-term capital investments. It argues the importance of not stifling the ability of retail electric providers to provide service to customers.

Currently, providers in the market can innovate and provide services to customers because they can match customer contracts with wholesale market contracts and receive credit in the marketplace, and this system provides the least cost to the consumer. TEAM argues that, if providers are required to buy credit for future loadbearing capacity, there is no one-for-one matching for customer needs. This prevents innovation and restrains the market. Further, TEAM emphasizes that there are other products that can provide reliability that are not at the customer's expense. There already are economic imperatives that require retail electric providers to purchase 95% of power through bilateral arrangements that are forward contracts. Therefore, buying power ahead of time is already a part of the market system. TEAM insists that reliability issues do not occur because providers did not buy enough power, but rather because power was physically unable to show up.

Chairman Metcalf questioned what effect the LSE obligation would have on independent retailers. According to Ms. Webking, the original E3 LSE obligation would have a depressive effect on the competitiveness of the market. It had never been implemented in a market with retail competition. It exists in areas with entities with captive customers which is much easier to see what their load will look like on a forward-looking basis. According to Ms. Webking, forward-looking capacity is the most difficult for a load serving entity.

Texas Electric Cooperatives

Julia Harvey testified on behalf of the Texas Electric Cooperatives (TEC), a statewide association that represents the 75 co-ops operating in Texas. They primarily seek to protect rural interests.

Electric co-ops are member-owned, not-for-profit electric utilities that were created in the 1930s. The member-owned model is characterized by local control, self regulation, and direct accountability to members. Co-ops are authorized to serve retail, distribution, transmission and generation, and, although they have a different regulatory framework than for-profit entities, they are a part of the larger ERCOT market. TEC urges that we must look at the impact of market changes on the several million rural consumers affected and make sure investments in energy resources are reliable and sustainable and delivering what consumers expect and pay for.

Regarding Phase I proposals, TEC believes that the firm fuel supply product is a step in the right direction for improving the resiliency of generators with onsite fuel or dual fuel capabilities. Other changes, like ERCOT's conservative operational posture, may work in the short term but present issues for long-term stability. This creates uncertainty in the market as the permanency of such a change is unknown, and it imposes a cost that may not be justified in all cases and is disconnected from market outcomes. This is at odds with the current market design. This operational posture can increase the use of RUCs (reliability unit commitments), creating wear and tear on the generation fleet so that these units may not be there when actually needed. Temporary rules such as these do not make a good environment for large capital investment, and more certainty in the market is needed.

As for Phase II proposals, co-ops would be directly impacted by load-side obligations. Because of this direct impact, TEC emphasizes the importance of an independent analysis of proposed reforms. The cost to rural consumers must be balanced with the reliability benefit. At the time of the hearing, the PUC contract with the consultant did not contemplate rural interests. Representative Slawson asked whether the PUC consultant's study will add co-operatives into the scope of the study. Ms. Harvey stated that the consultant is only directed to evaluate the impact of customers in retail choice areas, but TEC is working with the PUC to ensure customers out of areas of retail choice environments are added.

Office of the Public Utility Counsel

Chris Ekoh testified on behalf of the Office of the Public Utility Counsel (OPUC), which represents residential and small commercial consumers in utility cases before the Public Utility Commission. OPUC is concerned with consumer interests and voices these concerns before the Public Utility Commission. Mr. Ekoh stressed that consumer interests must be kept in the forefront. Notably, Mr. Ekoh stated that consumers are ultimately paying for RUC'ing units and ancillary services.

Texas Association of Manufacturers

Katie Coleman testified on behalf of the Texas Association of Manufacturers (TAM), which represents large industrial and manufacturing facilities in Texas. TAM emphasized that there are many dedicated revenue streams in the market currently that specifically pay for dispatchable energy, and there are costly methods in place to funnel revenue directly to dispatchable generators. These have been expanded since Winter Storm Uri. The operating reserve demand curve created in 2014 only kicks in at lower levels of reserve, which is nearly always when renewable resources have dropped off the grid. The bulk of those revenues go directly to dispatchable generation, which are designed to incentivize further dispatchable energy. Ancillary services can only be provided to dispatchable generation, and manufacturers are already buying thousands of megawatts of ancillary services every day. They are also in the process of adding additional ancillary services and implementing a firm fuel service that is only paid to dispatchable generation that has fuel security. These market features are supported by TAM as appropriate ways to incentivize dispatchable generation.

TAM does not support the load serving entity obligation that resembles a forward capacity

market. It does not want customers to have to make fixed payments to companies simply for owning a dispatchable generator for some period in the future. In this option, if companies do not provide dispatchable energy, they pay a fee that does not go back to customers and does not incentivize the same level of performance and reliability. This is a shift back toward a regulated model that TAM does not support. TAM believes that this is expensive for customers and bad for economic development. Instead, TAM argues for a pay-for-performance model that pays for having ancillary services and reserves and argues against moving to a capacity type market.

Chairman Metcalf asked if TAM would be in favor of any phase II proposals. Ms. Coleman stated that there are ways to appropriately incentive dispatchable generation that already exist without phase II. Specific to phase II, Ms. Coleman stated there are potential options as long as they do not become a forward capacity type market.

Representative King asked TAM's preference for how the state can incentivize new dispatchable generation. Ms. Coleman stated there is no need to pay for something three years in advance, but to send a market signal, and that there will be a revenue stream for investment.

Texas Coalition for Affordable Power

Thomas Brocato testified on behalf of the Steering Committee of Cities Served by ONCOR and the Texas Coalition for Affordable Power (TCAP). TCAP believes that the fundamental purpose of ERCOT is to deliver reliable power at the lowest cost, and, that where competitive market solutions are possible, they are more likely to achieve that goal. The financial risk should be shifted from customers to capital market participants. TCAP believes that market regulatory certainty and transparency provide robust market participation, which is essential for investment. TCAP asserts that Winter Storm Uri was caused by poor operational performance rather than a lack of installed generation or handcuffs on dispatchable generation. To that end, Phase I was important and targeted. The adoption of winterization rules, better identification of critical natural gas loads, lowering of high system-wide offer caps, changes to the emergency response service policy, and securitization are all positive steps from phase I.

TCAP believes that current phase II proposals do not address the failing of the system during Winter Storm Uri and would not have prevented blackouts. Further, this is a roundabout way to manage the market. TCAP believes this is not a holistic approach to addressing reliability or cost impacts by funneling money to generators without providing sufficient assurances that enough generation will be constructed or operational. Rather, TCAP seeks a holistic approach that assures that customers are getting the full reliability value for extra costs as a result of ERCOT's conservative posture.

Texas Pipeline Association

Vincent DiCosimo testified on behalf of the Texas Pipeline Association (TPA). Since Winter Storm Uri, TPA has moved to electric generating capacity for compressors. New compressors that were not previously identified as CIDs have not been designated as such. This has been enhanced with solar and backup generation at compressor sites. Member companies have continued in their ongoing weatherization efforts, looking to harden the areas that

underperformed during Winter Storm Uri. They have added additional wind screens and internal backup generators and heaters. Pipeline companies are continuing to connect to more production of natural gas and crude oil, making sure that it all meets weatherization standards.

TPA encourages additional gas storage for generators in the state in order to guarantee that they have adequate supplies. Further, TPA maintains that while information and data regarding who owns what resources in pipes is confidential, pricing and capacity information is freely available every day. There are multiple platforms for real-time pricing, such as the Intercontinental Exchange (ICE). TPA urges that this information is already available on the public market today.

Representative Howard inquired if there would be any receptivity to an independent market monitor for gas like there is for electricity. Mr. DiCosimo stated that shippers on pipelines have all the transparency information and it is the responsibility of the wholesaler or retailer to give the buyer all transparency information in a thorough bilateral manner. He added that TPA would need to know exactly what information is desired before any position is taken. Finally, he added it is important to purchase firm gas and firm transportation.

Chairman Metcalf asked whether TPA had any comment in regards to comments made by TCPA on the lack of ability to enter into contracts. Mr. DiCosimo stated they would need to look into plant siting locations and that the availability of natural gas is important to siting a generation plant.

Texas Oil and Gas Association

Shannon Rusing testified on behalf of the Texas Oil and Gas Association (TXOGA). TXOGA emphasized the importance of both reliability and affordability of the electric grid in order to maintain operations and stated that communication-focused improvements, enhanced ancillary services, firm fuel supply service, and new generation are all keys to success. The natural gas industry is growing substantially, and it builds new products to ensure large volumes are available for purchase based on firm commitments. Even though there is a robust consumer market state-wide, more than half of the natural gas produced is sold outside of Texas.

Customers around the country and world pre-plan and pre-purchase gas long before the product is needed and do not rely on a just-in-time system. During weather events, production will decline, and storage of natural gas combined with potential reduced daily volume robust delivery system means there is more available than Texas needs. The key to these issues is pre-storm contracting for firm supply storage and transportation. TXOGA believes that enhanced reliability should include that those relying on natural gas for electricity generation should be incentivized to procure the firm storage capacity or provide alternatives to doing so to ensure that volumes needed are available during an emergency. Proper provisions for firm supply should be made for those that rely on natural gas for generation. If not, acknowledgement that there are risks associated with purchasing product on the spot, as the market has greater volatility and may not be readily available is required.

TXOGA also believes that securing firm transportation and identifying redundancy needs in order to make sure product can be moved from one place to another are important. TXOGA emphasize that the informal TERC process allows a clearing house for real-time information

during an emergency that market participants may avail themselves of, but that no amount of data-posting in the middle of a crisis will make more gas available. Buyers, sellers, and transporters of gas speak directly to one another and need to remain in constant communication. In addition to a third party, much care must be taken to ensure that more challenges in communication are not created. TXOGA stressed that Texas operators add additional weatherization techniques each year, but that only 12-15% of outages during Winter Storm Uri were related to fuel.

Ms. Rusing expressed that while ERCOT was discussing an IMM for natural gas during the early part of 2022, the recent focus has been on a gas desk which is problematic. She added that electricity and electricity generation is a very specific industry and that 80% of gas producers sell to someone other than a generator. Both industries cannot be managed in the same way. She added there is another concern of a gas desk because it is difficult to ascertain what benefit will allow someone to accomplish in a moment when trying to secure product without a contract or some other issue in the system. Finally, TxOGA is unsure on the purpose and result of the gas desk suggestion.

Texas Competitive Power Advocates

Michele Richmond testified on behalf of Texas Competitive Power Advocates (TCPA), which represents eleven generation companies in the ERCOT market. Generation companies are investing capital consistent with the risks and rewards of market signals. The relevant question for TCPA is not whether to invest in ERCOT, but whether to invest in a gas plant, other dispatchable resources, or other types of resources. Currently, billions of dollars are being invested in batteries and renewables, and, while this investment can be shifted into dispatchable resources, it would require a change in the market structure.

TCPA emphasizes that a commodity market requires transparency. Currently, ERCOT has incredible amounts of transparency regarding current and projected production, consumption, pricing, congestion, outages, among many other aspects available in real time or near-real time. It is a thriving market with consumers contracting with producers constantly. TCPA argues that regularly using reliability unit commitments (RUC) on marginal gas units needed for reliability has been particularly negative, as these units are paying more to produce power than they are able to recover in the wholesale market or even through the "RUC Make Whole" process.

Despite the increasing electricity prices, this has not translated into increased revenue for generators, but rather increased revenue for gas companies. TCPA believes that gas is driving the majority of cost increases, including ancillary services, and that year-over-year comparison numbers are misleading. Interstate pipelines have robust transparency in that market providing symmetry of information. However, this transparency is not required in intrastate pipelines, placing shippers in Texas at a disadvantage to those on the interstate pipelines that do have the information. TCPA believes this creates an unfair disadvantage for electricity generators.

Transportation rates do not operate on the intercontinental exchange board, and TCPA identifies three requirements for major intrastate pipelines that could be implemented with legislation: (1) implement electronic bulletin boards that include the available capacity as well as a list of firm

shippers; (2) requirement to permit capacity release so there can be a real-time market for firm pipeline capacity; and (3) affiliate protections to ensure that the first two requirements are not evaded.

TCPA states that generators do not disagree with the perspective on more firm contracts, but emphasize that not all market players offer firm contracts. TCPA further added that costs cannot be managed effectively because companies cannot currently remarket unused firm capacity. Finally, TCPA argues that because pipelines are utilities regulated by the Railroad Commission, there should be requirements to provide transparency for open access and a level playing field, otherwise, this is bad for public interest and hinders the market by creating a barrier to investment and generation. TCPA stated that companies are building on interstate pipelines rather than intrastate because of the lack of transparency.

Chairman Metcalf questioned if TCPA members operate on a firm contract. Ms. Richmond stated that it depends on the member and on the plant. She added that there are some members who cannot get firm contracts at their facilities even if it is desired. Some facilities have one pipeline coming into the facility and one option for provider. Ms. Richmond argued that is a geographic monopoly and not a fair market. Also, there are TCPA members with different options for suppliers, though she stated that this typically occurs on the interstate pipeline and not as much on the intrastate pipeline.

FINDINGS

Since the 87th Legislative Session there have been major changes to the electricity market. The first phase approach by the PUC brought short-term reliability improvements to the grid that were necessary following the failures experienced during early 2021. As noted by the PUC, these changes included reducing the cap on high prices that can be charged when supply is tightest, lowering the cap from \$9,000 per megawatt/hour (MWh) to \$5,000 per MWh, modifying the ORDC curve to provide earlier price signals to bring additional generation online sooner, increasing the market incentives for large consumers to decrease electricity usage in response to prices and grid conditions, expanding the emergency response service for large customers to register with ERCOT to decrease their electricity demand when the grid needs additional power and the PUC approving new or revamped ancillary services that include paying generators for having onsite fuel storage, for the ability to respond quickly to changes in the frequency of the grid, and for the capacity to react to abrupt swings in electricity supply and demand. Additionally, the PUC has widened the margin of operating reserves. The Reliability Unit Commitment (RUC) used by ERCOT and the PUC has been directed to require power generators to come online and provide energy.

Critics of conservative operations feel that measures are distorting the market which is adding costs to consumers. These out-of-market actions are being paid for by customers. While reliability needs have been met, these reforms have had expensive consequences to the public of Texas. The widened margin of operating reserves has made the grid more resilient than ever before. Consumers are also seeing higher prices than ever before. ERCOT reports year-to-date cost of conservative operations estimates for 2022 through August a dollar per MWh impact of \$1.26/MWh. This estimated \$1.26/MWh considered the procurement on additional ancillary

services (specifically non-spin) and any make-whole payments or claw-back charges associated with Reliability Unit Commitments (RUCs). Critics state that the price could be closer to \$15/month. During this public hearing, the independent market monitor stated that the changes to the management of the grid could add \$1.5 billion dollars to customers' bills through 2022.

Electricity prices are affected by many different factors, including fuel costs and transmission issues. While not every cost can be attributed to the conservative operations of the grid, the reforms have had a monetary impact on Texans. It is important to note that the reforms have also proven to be effective in the short term. The state of Texas faced no grid-related issues from the winter of 2021 through 2022. These successes can also be attributed to power generation facilities' efforts to weatherize their units in accordance with Senate Bill 3 and weatherization rules put forth by the PUC. Additionally, the state of Texas faced many days of record-breaking heat and record-breaking demand for electricity during the summer of 2022. ERCOT set an all time record at 80,038 MW on July 20, 2022. While ERCOT did issue multiple conservation appeals requesting Texas citizens and businesses to voluntarily reduce their electric demand, there were no load shed events due to lack of power generation on the grid. The PUC accomplished phase I design goals by enhancing the current market through the growth of ancillary services and modification of market signals to improve operational reliability.

Phase II market re-design has been an ongoing action since this public hearing on June 22, 2022. The contractor selected by the PUC has been working under parameters set by PUC leadership to ensure an adequate supply of dispatchable generation to meet the needs of the ERCOT region. Public statements made by PUC Chairman Lake during the final interim hearing on September 13, 2022 indicate that the contractor will provide the PUC with the market study and recommendations on phase II changes later in fall 2022. The study will go before the commission for public comment following a vote before the commission of a final product with presentation to the legislature around the beginning of the 88th Legislative session. With continued market uncertainty, the PUC must establish a phase II design proposal in accordance with Senate Bill 3 set forth by the legislature.

Senate Bill 3

BACKGROUND

While redesigning the market of ERCOT has been an ongoing project at the PUC, Senate Bill 3 contained many other important provisions which were passed in response to the power failures during Winter Storm Uri. This omnibus legislation does the following:

Senate Bill 3 created a power outage alert system administered by DPS which will keep Texans informed about power outages. It also required the Texas Division of Emergency Management (TDEM) to develop actions for state agencies and the public to take in regards to winter storm preparation.

The Texas Energy Reliability Council was established through SB 3. This council is tasked with ensuring that the energy and electric industries meet high priority human needs, address critical infrastructure concerns and enhance coordination between those in the electric and energy industries in Texas. The council is composed of the Chair of the Railroad Commission of Texas (RRC), the presiding officer of the PUC; the chief executive officer of OPUC; the presiding officer of the TCEQ; the chair of the Texas Transportation Commission, a representative of ERCOT appointed by the Governor; the Chief of TDEM, five individuals representing the gas supply chain appointed by the RRC, five individuals representing the electric industry appointed by the PUC, three individuals representing the energy sector otherwise not represented on the council appointed by the PUC and five individuals to represent industrial concerns appointed by the Governor. The Chief of TDEM serves as the presiding office of TERC in accordance with SB 3.

SB 3 requires TERC to meet at least twice a year at a time and place determined by the Chief of TDEM. TDEM is required to provide administrative support to the council.

This legislation requires the RRC and PUC to collaborate to adopt rules establishing a process to designate natural gas facilities and other facilities associated with providing natural gas as critical customers or suppliers during an energy emergency. It also requires the RRC to develop rules requiring gas supply chain facilities to implement measures weatherizing their facilities and requires the RRC to inspect those facilities for violations. SB 3 creates fines for the violations of weatherization standards. Gas and electric entities can be fined up to \$1 million dollars per violation per day.

SB 3 also requires a retail electric provider to provide their retail customer with information regarding the electric utility's procedures for implementing involuntary load shedding. This information is provided to the retail electric provider from the electric utility providing electric delivery. The information enclosed is regarding who can be considered a critical care residential customer, critical load industrial customer or critical load. It also contains the procedure for a customer to apply to be considered that type of critical customer or load as well as information about reducing electricity use when involuntary load shedding occurs. MOU's and electric co-ops must also give the same information to their customers.

Power generators must also weatherize in accordance with SB 3 under rules defined by the PUC. ERCOT will inspect generation units and report violations to the PUC. The PUC is required to fine any entity that violates weatherization rules and does not remedy the violation within a reasonable period of time.

The PUC was required to review existing ancillary services and determine if they are meeting the needs of the market and to consider if any other services are needed. They also must require ERCOT to modify the design, procurement, and cost allocation of ancillary services for the region in a manner consistent with cost-causation principles and on a nondiscriminatory basis.

SB 3 also requires TDU's, MOU's and electric co-ops in ERCOT to weatherize their assets. ERCOT inspections will be done based on risk level and violations will be reported to the PUC. The PUC is required to impose a fine on any violations not remedied in a reasonable time.

The PUC is required to develop a system to allocate load shedding among electric co-ops, MOU's and TDU's. The PUC is required to develop the load shedding plan and administer a voluntary load shedding program. Load shedding exercises must be completed by the PUC and ERCOT. They must conduct a simulated exercise at least once during the summer and winter.

The Texas Electricity Supply Chain Security and Mapping Committee is established to map the electricity supply chain in Texas, identify critical infrastructure sources in the supply chain, establish best practices to prepare facilities during extreme weather events and designate priority service needs to prepare, respond and recover during extreme events. The committee is composed of the executive director of the PUC, executive director of the RRC, the president and CEO of ERCOT and the chief of TDEM. The executive director of the PUC serves as chair of the committee while the executive director of the RRC serves as the vice-chair. The committee meets quarterly and updates the map at least once each year.

The PUC is required to ensure the ERCOT power region establishes requirements to meet system wide reliability needs by determining the quantity and characteristics of ancillary services necessary to ensure appropriate reliability during extreme heat, extreme cold and during times of low non-dispatchable power production. ERCOT is also required to procure ancillary or reliability services on a competitive basis to ensure appropriate reliability during extreme heat and extreme cold weather conditions and during times of low non-dispatchable power production in the power region. The PUC must ensure that the resources providing ancillary and reliability services are dispatchable and rate based on matters such as on-site fuel storage, dual fuel capability, fuel supply arrangements in the winter and drought resilience in the summer.

The PUC is required to establish an emergency pricing program for the wholesale market. The program must take effect if the high systemwide offer cap has been in effect for 12 hours in a 24 hour period. The emergency pricing program cap cannot exceed the maximum cap. Any rule set by the PUC must allow generators to be reimbursed for reasonable operating costs that exceeded the emergency cap.

SB 3 requires the owner or operator of distributed generation to register with ERCOT for interconnection. This does not apply to distributed generation serving a residential property.

The PUC is required to analyze the emergency operations plans of electric utilities, power generation companies, MOU's, electric co-ops and retail electric providers that operate in ERCOT. They must also produce an emergency preparedness report based on weather preparedness. The RRC must also analyze the emergency operations plans of natural gas facilities and produce an emergency preparedness report.

SB 3 also prohibits water utility providers from shutting off service during an extreme weather event or imposing late fees for nonpayment of bills until after the emergency is over. They also must work with customers who request a payment schedule for unpaid bills that are due during an extreme weather emergency.

The State Energy Plan Advisory Committee was created by SB 3. It is composed of 12 members with four members selected by the Governor, four members selected by the Lieutenant Governor and four members selected by the Speaker of the House. The advisory committee is required to prepare a state energy plan to the legislature to evaluate barriers in the electricity and natural gas markets that prevent sound economic decisions and provide recommendations to remove those barriers, evaluate methods and provide recommendations to improve the reliability, stability, and affordability of electric service in this state, and evaluate the electricity market structure and pricing mechanisms used in this state, including the ancillary services market and emergency response services. According to the legislation, the state energy plan was to be submitted no later than September 1, 2022.

Finally, SB 3 requires the PUC and ERCOT to annually review statutes, rules, protocols and bylaws and provide a report on any conflicts of interest for PUC commissioners and the ERCOT board of directors.

SUMMARY OF COMMITTEE ACTION

Public Hearing:

The House Committee on State Affairs and the House Committee on Energy Resources met jointly on September 13, 2022 at 10:00 AM in the State Capitol Extension Room E1.030 to discuss the implementation of Senate Bill 3. The Committees heard invited and public testimony. The following individuals testified:

- Botkin, Shelly (Texas Public Power Association)
- Coleman, Katie (Texas Association of Manufacturers.)
- Craddick, Christi (RRC)
- DiCosimo, Vincent (Texas Pipeline Association)
- Foreman, Dean (API)
- Greer, James (Oncor Electric Delivery)

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- Harvey, Julia (Texas Electric Cooperatives, Inc.)
 - Jones, Brad (ERCOT)
 - Kidd, Nim (Tx division of emergency management)
 - Lake, Peter (Public Utility Commission of Texas)
 - Linenschmidt, Larry (Self)
 - Miller, Tonya (Texas Solar Power Association)
 - Modglin, Jason (Texas Alliance of Energy Producers)
 - Oney, Thomas (Lower Colorado River Authority (LCRA))
 - Palacios, Virginia (Self; Commission Shift)
 - Reed, Cyrus (Lone Star chapter sierra club)
 - Richmond, Michele (Texas Competitive Power Advocates (TCPA))
 - Ryan, Jason (CenterPoint Energy)
 - Sierer, Paul (Texas Competitive Power Advocates (TCPA))
 - Smith, Caitlin (Jupiter Power, Texas Energy Storage Coalition)
 - Staples, Todd (TXOGA)
 - Yu, Joel (Enchanted Rock)

Public Utility Commission

Peter Lake testified on behalf of the Public Utility Commission (PUC). The PUC believes that the reliability changes of SB 3 are working. ERCOT was able to meet the demands of a record-breaking summer without having to enter emergency conditions, demonstrating that the grid is reliable and that reforms are working.

The PUC is continually moving away from a crisis-based business model to a reliability-based business model, providing more reliability tools and making them more accessible. Further, weatherization efforts continue to be implemented. Phase I was completed and in place prior to winter of 2021. There has been excellent coordination with the Railroad Commission for designation of critical natural gas supply and the completion of the map of the natural gas supply chain to know where its most important components are. Finally, the proposal for phase II of the

market redesign will be ready by the beginning of the legislative session so that the total of SB 3 will be implemented fully.

Representative King asked for an update on the current market study being conducted by Energy Environmental Economics (E3) in order to provide recommendations for phase II. Chairman Lake said that the PUC has received the first component of the work product which has been synthesized by him and other commissioners and sent back to E3 with more narrow parameters to create the final product to present to the public fall 2022. Chairman Lake emphasized that no plan will be implemented within ERCOT until the legislature had a chance to review the plans and provide feedback. Chairman Lake laid out the timeline for the new plan including a time period for public comment and a delivered product to the legislature before any action is taken. The implementation of the plan is dependent on the legislature's concurrence.

Representative King stressed the importance of the legislature's role in affirming the plan so that there is certainty going forward for the industries involved. Chairman Lake responded that no implementation will take place unless the legislature provides affirmation.

Representative Hunter stressed the importance of communication to the public regarding cost increases. He also asked the PUC why there is no explanation on new charges on rate increases, specifically for the delivery services related to transmission and distribution. Chairman Lake stated that customer costs are the most important when balancing reliability with cost to customers. In the meantime, the PUC has been trying to be communicative about the causes of customer rate increases. Specifically these reasons include the record breaking summer 2022 heat that increased demand, high natural gas prices, and the acquisition of more megawatts in order to ensure reliability. Chairman Lake says the megawatt increase adds about \$1.26 to each consumer bill.

Representative Howard brought up concerns regarding the public comment process of the market design plan. She mentioned that based on the PUC's intention to deliver a market design plan to the legislature at the beginning of session, the public comment period would occur during the holiday season. There is concern that if the process falls within the holidays, that many people would be unable to provide input as they travel throughout the holidays.

Representative Howard asked for clarification on the specifics of the market redesign concepts that the PUC was considering. All of the proposed concepts are an obligation that is being placed on the load serving entities (LSE). At the highest level, it is simply requiring the companies that receive revenue from state households to provide reliable power to those same households. The PUC is currently working through which version of this is the most cost-effective and reliable. They are working with national consultants and pulling the best ideas together to provide the most reliability possible.

Representative Howard further questioned the PUC's preference on the LSE option and mentioned how this could shift responsibility from capacity to retailers. Chairman Lake highlighted that the PUC chose this concept because they do not want a centralized capacity market or a firming tax or curtailment of generation. The LSE reliability requirement would be

driven by individual companies making business decisions and relying on technology that can provide reliability at the lowest cost. It would be a market driven process.

Representative King asked Chairman Lake about the preliminary recommendations from E3. He emphasized the intent to dramatically improve reliability at a very reasonable cost to the consumer. Once the market redesign is open for public comment, concrete recommendations will be included. Public comment will be open for the typical amount (30-40 days) with more time added on to account for the holidays. Representative King emphasized his hope that no vote is taken until the PUC and the legislature can meet to discuss the recommendations.

Electric Reliability Council of Texas

Brad Jones testified on behalf of the Electric Reliability Council of Texas (ERCOT). ERCOT explained that SB 3 allowed for the ability to require generation fleet and transmission facilities to weatherize and that it was able to accomplish this ahead of winter 2021. Additionally, ERCOT believes that the weatherization efforts significantly helped grid reliability. Although winter 2021 into 2022 was cold and contained two weather significant events in February, there were no significant level of outages due to failures of the grid.

Additionally, ERCOT modified its operational approach and began to operate much more conservatively, bringing more reserves online to make sure customers received necessary power. ERCOT believes conservative operations have also worked to restore grid reliability, exemplified by the eight separate occasions in 2022 where, had ERCOT not operated conservatively, there likely would have been emergency conditions. ERCOT is taking actions earlier overall and has seen the positive impact of doing so.

In addition to these changes, ERCOT has also worked closely with TERC (Texas Energy Reliability Council), the natural gas and electric industries, and other agencies for a new collaborative effort that is exceptionally helpful in dangerous weather conditions.

Representative Hunter emphasized the need for ongoing communication with the public and the legislature.

Representative Howard expressed that there are several pathways for more imports and transfer capabilities of power that ERCOT should consider. She continued to highlight constituent concerns about the conservation alerts during the month of July 2022. She noted that it scared many Texans because not enough context was provided to the constituents. Mr. Jones expressed that the little things that people can do to limit their energy usage during conservation alerts makes a big difference on the grid and that 500MW was saved because of people's willingness to conserve their energy for a short time.

Representative Slawson discussed ERCOT's friendliness to renewable resources and how that may cause issues in attracting and retaining the dispatchable generation resources. Mr. Jones stated that Texas is where all solar and wind producers are looking to first to build and that ERCOT is focused on making sure that we have the reliability that we need. This begins with focusing on dispatchable generation which actually helps renewables in the end. Renewables are a strong resources because they are cheap and clean. Mr. Jones emphasized that because of the

efforts of the PUC market redesign, there will be a strong incentive for the development of dispatchable energy facilities in the state.

The Railroad Commission of Texas

Christi Craddick testified on behalf of The Railroad Commission of Texas. In response to Winter Storm Uri, the commission updated its curtailment rule in January of 2022 and created a Critical Infrastructure Division. It hired 100 new employees in this division to implement the rule and inspect operators to ensure compliance. Further, the commission adopted a critical infrastructure designation rule that requires operators to inform the commission of their status in application for TDU. These are filed twice a year and will facilitate better communication. Additionally, the commission has worked to develop an electricity map, collaborating with the PUC and ERCOT to share information and data.

The commission adopted a weatherization rule that focuses on facility preparation and performance per specific mandates. The facilities are required to weatherize for sustained operation without weather related forced stoppage. They must correct any known issue from past weather emergencies, and operators must perform self-assessments, inspections, tests, and training to this end. Facilities are required to complete these by December 1st of each year and submit a sworn attestation explaining their work. The commission will be performing inspections of potential violations and has implemented a penalty table with violation fees costing up to one million dollars.

Representative Howard asked about the enforcement mechanism and how best practices are ensured. The guideline document will be a living document. The RRC will continue to receive feedback from consultants and the industry to make sure that the best practices are in place. If any critical entity chooses not to weatherize, the RRC has a table that explains any applicable penalty. Representative Howard expressed a concern that gas operators will voluntarily shut down to avoid penalties, creating a loophole in any enforcement mechanism implemented by the RRC. Chairman Craddick stated that weatherization requirements and government mandating production are different and that most gas operators would choose to stay on. She stated that companies will want to weatherize in order to continue operating through adverse weather.

Texas Division of Emergency Management

Nim Kidd testified on behalf of the Texas Division of Emergency Management (TDEM). SB 3 created the Texas Energy Reliability Council (TERC) and placed the Chief of TDEM as the chair of TERC. Of its twenty-five members, eighteen are not government employees; rather, they are volunteers that are appointed by the Governor, Railroad Commission, and PUC. The legislation requires that the members meet twice a year, but they have had over a dozen meetings so far in 2022. TERC has created two working groups. The first group focused on addressing immediate needs and met four times for recommendations to prepare for the specific needs of winters 2021 and 2022. The second work group was focused on the charter and bylaws of TERC. There are three TERC committees: the communications, supply chain, and recommendations committees.

TERC facilitated the meeting between agency partners to establish roles and responsibilities for weather events. Additionally, it conducts daily state emergency weather calls and provides

resources on its website. TERC hosts industry-wide coordination calls for fostering communication and coordination in the energy and electric industries. Overall, the purpose of TERC is to make recommendations for policy and legislation to reduce outages and improve reliability, and they are currently preparing a report of these recommendations.

Lower Colorado River Authority

Thomas Oney testified on behalf of the Lower Colorado River Authority (LCRA). Phil Wilson, General Manager of LCRA, serves as the Chair of the State Energy Plan Advisory Committee. This committee was created by SB 3 and features members appointed by the Governor, Lieutenant Governor and the Speaker of the Texas House. They were tasked to evaluate challenges that face the electricity and natural gas markets in Texas. The State Energy Plan Advisory Committee submitted its plan to the legislature on September 1st, 2022. The committee held two hearings open to the public. Twenty-five representatives across the energy and electric industries came together in the first committee to make the initial draft of a plan. This draft was then sent back to committee members who submitted their revisions and modifications. In the second hearing, the committee put together these revisions and modifications for a second draft and achieved a consensus from the members. This became the State Energy Plan.

The State Energy Plan emphasized the need for continued collaboration with the PUC and Railroad Commission to assess data and legislation facilitating access to and eliminating barriers to the electric and gas markets with oversight from the legislature to make standards for these provisions. Further, the plan iterates the need to ensure that adequate dispatchable energy is available, which starts with the PUC defining clear metrics for reliability. Further, the plan recommended that the PUC evaluate transmission pathways. Finally, the committee recommended that the PUC finish phase II of market redesign and commit market design aspects that remain (such as firm fuel supply and ancillary services) and continue studying demand response solutions going forward into the future.

Representative Howard expressed concerns that there was not enough time for the committee to adequately develop a plan that thoughtfully considers all options. Mr. Oney suggested that that was a decision made by the legislature over which the committee had no authority.

Texas Competitive Power Advocates

Paul Sierer testified on behalf of Texas Competitive Power Advocates (TCPA). TCPA emphasized that what happens in the gas market is inextricably linked to both electric supply costs and reliability. There is high transparency in the natural gas commodity market because of the high number of producers and other market participants, but this same transparency does not exist in the intrastate gas storage market. TCPA emphasized that transparency and efficiency are essential for power producers to operate and invest in the market. Sierer additionally pointed out that buyers of intrastate services are at a disadvantage because the Texas pipeline and storage market does not have this level of transparency and is not operating as efficiently or reliably as it could be. TCPA asserts this is bad for Texas consumers.

In places like north Texas, there are geographic monopolies that allow market control, and information transparency is needed to offset this. Currently, there is no requirement for

separation of marketing and transmission. According to TCPA, this lack of competition allows companies to charge whatever price they want. Further, TCPA argues that the intrastate pipeline market prevents the potential for competitive alternatives and third party market participants. Currently, intrastate pipelines can create rules that constrain other third party market participants from providing alternatives.

Further, TCPA believes that gas plants along intrastate pipes are more likely to retire sooner and less likely to get new investment of more efficient gas. This early retirement without replacement will increase the risk of power outages. TCPA adds that companies considering investment are unlikely to invest in markets that are not transparent like the Texas intrastate pipeline system and this creates issues for areas that do not have interstate pipelines.

TCPA emphasized that it does not want to regulate prices. Rather, the legislature should create legislation to establish a publicly accessible website with information on the intrastate pipeline. Otherwise, the lack of transparency restricts access of buyers and sellers to deal directly with one another. Further, TCPA asks that the legislature allow shippers to resell firm capacity and require a separation of marketing and transmission functions. Finally, TCPA asks for strengthened regulatory oversight to ensure there are no take-it-or-leave-it scenarios for consumers as well as a bill of rights for customers.

Representative Howard asked Mr. Sierer to expound on his comments. He said he does not support FERC-style regulation and is only looking for market transparency and fairness. He emphasized that contracts cannot be negotiated to contain firm transport in areas where there is no market competition, and that pipeline companies hold all of the market power in those scenarios. Mr. Sierer warns that the pipelines' windfall profits during Winter Storm Uri hurt Texas consumers, who ultimately paid these costs. He expressed that there needs to be some mechanism to guarantee reasonable fairness to protect customers in this state and prevent geographic monopolies. Further, he explained that the complaint process is broken because it does not address past damages, is a slow and expensive process, has a low probability of success, and only seeks prospective remedies. Additionally, Mr. Sierer expressed that there is a general concern for retribution by pipeline companies if the complaint process is engaged.

Representative Shaheen stressed that he believed that the solution for the disputes with the pipeline companies should be solved among the parties themselves and that the legislature will not be able to provide a perfect solution.

Mr. Sierer explained that storage services provided by pipelines are currently three times the market value for storage, and there is not enough market power to negotiate for lower prices. Pipeline companies are able to use market power to drive up the prices of storage and restrict access to storage, so that if a generator contracts for storage with a third party, the pipeline may prevent a generator's access to that third party storage. He argues is that there is no regulation to prevent this currently, so that even if a market solution exists, it is not reasonable and is subject to too much market power.

Texas Pipeline Association

Vincent DiCosimo testified on behalf of the Texas Pipeline Association (TPA). He explained that there are 90,000 critical infrastructure designations. TPA articulates that, by design, Texas decided to operate with contracts on intrastate pipelines with producers or third parties. In each contract, parties can write in provisions for capacity release, take-backs, or other features. It is a bilateral agreement.

Further, TPA emphasized that when investment is made in intrastate pipelines, it is made by individual companies without any guarantee of return. In contrast, there is a guaranteed return of investment on the interstate pipelines. This means that the risk of investment in the intrastate system falls on the pipeline industry rather than ratepayers. This is intentionally a very different model from the interstate system, as Texas chose to have an independent system and a contract market. Therefore, TPA argues that the legislature must look at ways to enhance the current marketplace other than adding regulations that constrain this independence. Finally, TPA emphasized that any information provided by a gas desk would be better gained by writing in provisions for this information in individual contracts.

Mr. DiCosimo stressed once more that, in the situation where a single pipeline runs to a generating site, one must keep in mind that when a pipeline is built in the state, there is no cost recovery. The generator agreed to the capacity and rate initially. The remedy for a single pipeline issue is in firm transport, firm gas, and purchasing storage. This solution currently exists in the market. Mr. DiCosimo argued that generators do not want to have the requirement to buy firm transport and gas and put it in storage.

American Petroleum Institute

Dean Foreman testified on behalf of the American Petroleum Institute (API). API argues that entities have options in contracting for fuel and that obligations for physical delivery is a cost level choice for each entity. Therefore, industrial consumers bear the risk of mitigating their own supply. Functionally, to not mitigate one's risks is a more expensive decision in the long run, and consumers are inherently incentivized to mitigate their own risks.

API argues that the current market design is very important to the Texas economy and garners a great deal of investment. The intrastate pipeline allows the Permian Basin to be one of the most reliable fuel resources in the country. While the intrastate pipeline does have some problems, API suggests that there are plenty of market-based options to solve these other than up-ending the market altogether (and over-regulating the intrastate pipelines), losing the unique advantages it presents. API believes that to do so would be to lose a major piece of the Texas economy.

Representative Howard asked Mr. Foreman to expound, and he explained that there are business risks a company assumes regarding variability when entering the market, and that these should be on energy companies rather than consumers. The ability for pennies on the dollar to secure firm supply, transport, and storage is what is necessary to make it through winter storms, and there are market-based fixes for problems.

Texas Oil and Gas Association

Todd Staples testified on behalf of the Texas Oil & Gas Association (TXOGA). TXOGA stressed that Texas has been able to successfully deliver on real-time basis to consumers around the world because of its specific network, system, and infrastructure designed for this industry to grow. TXOGA believes that SB 3 has corrected the issues that caused the industry failures during Winter Storm Uri and that the natural gas supply chain in Texas is winter-ready. While unavoidable disruptions will always occur, the industry is ready to handle these to make sure a similar disaster never occurs again.

TXOGA emphasized that both the ERCOT and NGSAs analyses have concluded that fuel limitations were only 12-15% of causation for outages at power generation facilities during Winter Storm Uri and if the power is kept on, fuel limitations should not be a problem at all. To that end, storage facilities and the vast intrastate network make sure that the gas needed will be available during a storm. While volatility of commodity prices occurs any time there is a production disruption, there are tools available to a market participant to mitigate its risks and exposure. TXOGA emphasizes that, regardless of changes to the industry, production disruptions will always be a reality to be dealt with. TXOGA emphasized that there are tools in place for customers of all varieties to get the gas they need, and that the industry does not need a gas desk, an independent market monitor, additional transparency, capacity relief, or other aggressive measures that do not necessarily target the key issue. TXOGA believes that when the government intervenes in the natural gas system, there are disastrous results for consumers. The system has been very intentionally unregulated since the 1970s, and there are tools available to solve any issues. Finally, TXOGA underscores the fact that nothing will solve the problems in the middle of a crisis if a consumer has not pre-planned and pre-purchased in order to have adequate gas supplies.

Representative Smithee expressed his general concern that there has been so much focus on trying to deal with the next winter storm that the industry has lost focus on preparing for a long-term plan for the electric grid.

Representative King reminded the committee that the Texas legislature completely restructured the market in 1999, and it created a great deal of concern in the financial markets and the industry at the time. However, market certainty was created through a new market design in legislation, and that will occur this time as well.

Texas Alliance of Energy Producers

Jason Modglin testified on behalf of the Texas Alliance of Energy Producers (TAEP), which primarily represents small, independent producers, particularly family run-businesses. TAEP's primary concern has been preventing new legislation that causes adverse affects and reduces overall gas production. TAEP promotes scaled, appropriate measures to produce reliable energy without less overall gas production.

TAEP continued to support the PUC and the Railroad Commission working together on a supply chain map and utilizing this map immediately in order to prioritize and protect gas delivery to electric generators. TAEP emphasized that electric interruption of the natural gas supply chain

was a critical problem during Winter Storm Uri. ERCOT has revised the critical designation in order to include more natural gas in the state. However, security concerns have made it difficult for operators to observe this process. TAEP continues to urge communication to streamline this process and gain compliance. Finally, TAEP reminded the committee that weatherization of field operations is different from that of a power plant, and that producers should be the arbiter on how and where weatherization measures would best be accomplished to avoid disruptions in the supply chain. TAEP believes that the commission's rule strikes the right balance here, and that the natural gas and electric entities have been able to greatly improve communications.

Texas Competitive Power Advocates

Michele Richmond testified on behalf of the Texas Competitive Power Advocates, which represents electric generators in ERCOT, most of which are dispatchable. TCPA seeks regulatory certainty in order to get new investors in the market. It believes that the conservative operations by ERCOT have ordered plants online rather than letting the free market work. Currently, TCPA is concerned that, if further action is needed by legislature for phase II market design, then a market resolution could not realistically come for several years. On the other hand, the legislature gave strong and appropriate guidelines to the PUC in SB 3. The emphasis on reliability needs to be transmitted to the market itself and let it respond. Currently, investors do not know what kind of market they are responding to and what its rules are. Overall, TCPA wants to achieve reliability through the competitive market rather than out-of-market actions telling producers that they need to produce. This means that the ERCOT reserves should be achieved through competitive market, not conservative operations.

TCPA opposes the practice of using reliability unit commitments (RUC's) to force generators online, because the generators are running when it is not economic for them to do so. Additionally, the units forced online are disproportionately older units and are much more likely to break. Further, without market certainty, companies are unsure of whether it makes more sense to retire the units or reinvest in newer units. Generally, it is better to retire an older unit and not invest more money into it, but competitive generators do not get cost recovery or a guaranteed rate of return for their investments. Additionally, ERCOT has established a "reliability must run" status designation, which prevents these units from being retired even if it is the more cost-effective choice. Older units are exponentially more expensive to keep in the market which creates a higher cost to the consumer. Further, TCPA sees this as a more long-term market problem because the investment community sees these designations as a sign that ERCOT is not concerned about this loss of money. This is a negative incentive to invest in the ERCOT market, and regulatory certainty about what the market looks like is needed to secure this essential investment.

Texas Electric Cooperatives

Julia Harvey testified on behalf of Texas Electric Cooperatives (TEC). TEC believes that the designation of critical natural gas load to give facilities priority in a loadshed event is essential. However, because facilities are required to register with their electric utility, TEC has received an unmanageable number of requests for this designation and does not believe it has the capability to make effective approval decisions currently. Electric utilities are not experts in the

natural gas supply chain, yet the burden is placed on the electric utility to make these decisions. In order to more effectively do this, TEC argues that the definition of a critical facility must be revised from its current definition, which is too broad and effectively makes the designation meaningless. Further, the burden should not entirely be on electric utilities for deciding applications. The Railroad Commission or other entity should play a role in approving these. At a minimum, electric utilities need more information to make these decisions. TEC believes that a supply chain map could be a good way to do this. Currently, only members of the committee have access to that map, and giving electric providers this information could help with designation as well as how to better treat loads internally.

Further, during the Winter Storm Uri event, there were problems with the natural gas system before loadshed began. Critical designation will not necessarily keep the supply chain intact in a weather event. Rather, robust and more consistent weatherization is needed. TEC argues that it would be pointless for electric utilities to go out of the way to provide electric service to facilities that then freeze and are unable to operate. Additionally, the designation is just one piece of a solution, and there is no guarantee any utility can maintain uninterrupted service to all customers in all circumstances. Therefore, if a facility truly need continuous service, the better solution would be for that facility to have onsite backup generation.

Finally, in regards to ERCOT market redesign, TEC believes that the objective needs to be better defined or articulated. More certainty here is needed to have a better understanding of how this affects co-ops in the long run. TEC is eager to resolve uncertainty because it is currently discouraging investment in ERCOT, particularly for dispatchable generation. Additionally, TEC emphasized the importance of the cost allocation directive in phase II. TEC believes that costs should be assigned based on cost causation principles and non-discriminatorily. Underperforming resources, which are causing the costs, should be assigned share of cost so that it does not all go to the end user.

Texas Solar Power Association

Tonya Miller testified on behalf of the Texas Solar Power Association (TSPA). TSPA seeks technological neutrality and a level playing field in the ERCOT market. Solar companies are investing in Texas, and solar power is one of the most predictable and least-cost energies on the market. TSPA does not want costs improperly assigned for new reliability services to solar and wind. It maintains that it is not opposed to paying for reliability costs that are directly linked to solar, but does not believe that more than that should be assigned. Further, costs should be assigned transparently based on cost causation.

TSPA believes that the discussion to require solar to contract for additional generation is unnecessary. Solar bids for generation and is expected to be available like any other power source. To make solar alone do this would be inequitable and does not follow technology neutral principles. Further, any requirement for solar to buy output from competitors would make solar uneconomic and undermine grid reliability.

Finally, TSPA states that companies are already responding to new market signals. Companies are now adding battery storage to solar plants. TSPA believes that storage should be allowed to

participate and contribute to solving grid problems during the day and into the evening, and that actions to make new market signals and further weatherization will solve other problems.

Jupiter Power; Texas Energy Storage Coalition

Caitlin Smith testified on behalf of Jupiter Power and the Texas Energy Storage Coalition, which represents energy storage developers and operators of battery energy storage projects in ERCOT. Primarily, these include standalone storage owners and operators.

Standalone storage systems connect directly to the grid and are not attached to specific a customer or generation resource. It is financed differently and fully dispatchable. Batteries can have instantaneous response to grid emergencies, buying time in frequency dips. This could free up thermal resources for other purposes and pair duration more closely with response time to be more affordable for customers. Batteries have increased tenfold the amount of storage they can provide, greatly enhancing operational flexibility. Ms. Smith emphasized the need to deliver critical power to areas when the transmission or distribution system is at full capacity, avoiding congestion and constraint to get energy to the areas where it is needed.

The Texas Energy Storage Coalition believes that the weatherization and ancillary services approved by the PUC in phase I have gone a long way in providing recognizable benefits to the grid during times of stress. In order to meet the policy goals of SB 3, it wants continued implementation for regulatory certainty in market design. The Texas Energy Storage Coalition stresses that, as a new technology, cost decline for battery storage will take much longer without market certainty for continued investment.

Additionally, the Texas Energy Storage Coalition supports modifying cost allocation in a nondiscriminatory basis based on cost causation. For batteries, technology neutrality means using each technology how it is suited. For services needed for a quick response, using quicker responding resources and using longer duration and response resources elsewhere.

Finally, the Texas Energy Storage Coalition seeks to maintain the competitive nature of storage.

Texas Association of Manufacturers

Katie Coleman testified on behalf of the Texas Association of Manufacturers (TAM), which represents the largest consumers of electricity in the state. Reliability is their primary concern, but they stress the need to evaluate what additional reliability is being gained and at what cost to consumers.

TAM believes that the best reliability at the lowest cost is provided by our current structure, a competitive pay-for-performance model. A provider that does not perform does not get paid and will be subject to penalties. The legislature has considered and rejected a pay-for-existing model several times and has shown commitment to a pay-for-performance model instead.

Manufacturers pay for reliability in addition to energy, acquiring a great deal of backup reserves, such as ancillary services and the operating reserve demand curve. Customers are paying 17% over energy costs for reliability currently.

TAM argues that, so far, the pricing has been exceeded and the market is providing substantial revenues to encourage new gas generator investment under the current pay-for-performance model. Therefore, TAM seeks to achieve better reliability through enhancements to the current market model rather than trying to create a new model altogether, as any substantial change to the market design would take many years for results, significantly impacting market certainty. Rather, TAM believes that the better way to get market certainty is to provide additional incentives in the current market in a cost effective way and signal this plan to market participants.

TAM emphasized that the market initially was deregulated so that the risk of choosing appropriate financial models and investment strategies would be born by companies rather than ratepayers. Gas generators that have struggled in this market have done so due to poor financial engineering rather than due to problems with the market itself, and this should not be taken as signal that market is not working.

Finally, TAM believes that critical load designations could be done more efficiently. Currently, those in the natural gas industry are designated year round, but weather-related events usually do not occur until the winter. This critical load designation prevents these entities from being allowed to provide demand response, creating lost access to a significant number of megawatts. Therefore, TAM believes this should be a seasonal designation that applies only in the winter when there actually may be gas supply issues.

Texas Public Power Association

Shelly Botkin testified on behalf of the Texas Public Power Association (TPPA), a state trade association for public sector electric providers focused on customer impacts. TPPA is very focused on affordability, stability, reliability and commitment to the long-term health of the market.

TPPA members are concerned about the commission making changes to the procurement methodology for ancillary services and wants to restore balance to the phase II market changes. Therefore, they believe that the PUC should consider a robust analysis weighing the costs and benefits, transparency, reliability, and methodology and receive comments from stakeholders and the public. Further, TPPA members oppose load-serving entity (LSE) obligation proposals. Overall, TPPA seeks to balance customer price impacts with the added costs of reliability.

CenterPoint Energy

Jason Ryan testified on behalf of CenterPoint Energy, an electric transmission and distribution entity based in the Houston area. Due to the significant growth of Houston, CenterPoint has to import 60% of its power through transmission lines from other parts of the state in order to serve their customers. As their customer count continues to increase, reliability of the grid becomes more important.

Load management and compensating customers for going offline during an emergency is very important to CenterPoint. This had not been a tool since the market was restructured, but after

the passage of SB 3, the PUC implemented a load management program that launched before winter 2021. CenterPoint continues to work on a year-round program for load management.

CenterPoint emphasizes the importance of the loadshed provision of SB 3. While CenterPoint makes up 25% of the load in summer, it only makes up less than 20% of the load for usage in winter. However, CenterPoint is assigned 25% of the loadshed in winter, disproportionately affecting their loadshed obligation. CenterPoint believes this provision should be based on seasonal usage so that these customers are not disproportionately and inequitably affected.

The state energy plan contained important recommendations for transmission planning regulations. However, CenterPoint argues that planning further in advance and shortening the timeline for approving transmission projects should be highlighted as legislation is in the works. As the commission implements SB 1281, there will be a better understanding of whether more work needs to be done for implementing these recommendations.

Oncor Electric Delivery

James Greer testified on behalf of Oncor Electric Delivery (Oncor). Oncor believes that SB 3 has gone a long way for preparing the state for an extreme weather event, but more can be done to enhance the resilience of the grid and better support the incredible growth the state is experiencing. Customer load growth is extremely high, and the existing procedures in place for approving and reviewing transmission development approval are not sufficient to keep up with today's growth. The passage of SB 1281 helped to reduce these process constraints.

Oncor believes that two things can be done for additional relief. First, the PUC should stay true to the language of the bill and require ERCOT to fully consider actual load, forecast of load growth, and load that has already been placed in the interconnection queue. Second, there is potential for legislation to reduce the CCN processing time to 6-9 months. Currently, this process takes a year or more. Implementation of these recommendations with other process improvements could result in a one year reduction to a typical 4-6 year transmission project approval process. This is a 25% reduction in timeline to make sure transmission has capacity and resiliency to meet the growing needs of the future.

Mr. Raymond expressed his concern that the load growth in Texas ensures that a less significant storm could produce the same issues seen in Winter Storm Uri.

Representative King expressed to CenterPoint and Oncor, as some of the few entities that work directly with customers, that he would like to know what other "tools" are missing from the emergency "toolbox" in order to be sure that these entities can adequately deal with an emergency.

FINDINGS

Senate Bill 3 has been robustly implemented by all affected agencies and entities. Both phases of power generation weatherization are complete, the Texas Energy Reliability Council has been meeting more than statutorily required to promote coordination and planning by energy agencies, and critical natural gas facilities have been designated among many other important provisions.

As testimony has shown, it is the desire of many stakeholders for the PUC to complete the phase II market re-design. This will ensure stability in the electricity market by encouraging dispatchable energy to increase the reliability of the electric grid.

The legislature could potentially consider modifying critical load designations. As some stakeholders addressed, a broad definition of critical load can make the designation meaningless. In a potential load shed event, there could be entities that are not truly critical and that could not be shut off, negatively affecting critical residential and public safety customers.

Phase II market re-design has been an ongoing action since this public hearing. The contractor selected by the PUC has been working under parameters set by PUC leadership to ensure an adequate supply of dispatchable generation to meet the needs of the ERCOT region. Public statements made by PUC Chairman Lake during this public hearing indicate that the contractor will provide the PUC with the market study and recommendations on phase II changes later in fall 2022. The study will go before the commission during a public comment period. Then the commission will vote on a final product and present to the legislature around the beginning of the 88th Legislative Session. With continued market uncertainty, the PUC must establish a phase II design proposal in accordance with Senate Bill 3 set forth by the legislature.

CHARGE II: Weatherization of power generation facilities

Examine the efforts of power generation facilities to weatherize their facilities.

BACKGROUND

All Texans are aware that there were a multitude of factors which attributed to the widespread power outages during Winter Storm Uri. The entire state faced extremely cold temperatures which led to the failure of power generating units. This failure led ERCOT to issue firm load shed to prevent a total blackout event due to the imbalance between electricity supply and demand. Between February 8 and 20, a total of 1,045 individual generating units—58% natural gas-fired, 27% wind, 6% coal, 2% solar, 7% other fuels, and less than 1% nuclear—experienced 4,124 outages, derates or failures to start¹².

The legislature addressed issues regarding power generation facility weatherization during the 87th Legislative Session by passing Senate Bill 3 into law which contains provisions requiring generation entities to weatherize.

SUMMARY OF COMMITTEE ACTION

Public Hearing:

The Texas House Committee on State Affairs held a public hearing on June 23, 2022, at 10:00 AM in State Capitol extension room E2.010 to discuss Interim Charge #2. The Committee heard invited testimony from the following witnesses:

- Harvey, Julia (Texas Electric Cooperatives)
- Linenschmidt, Larry (Self)
- McAdams, Will (Public Utility Commission of Texas)
- Richmond, Michele (Texas Competitive Power Advocates)
- Rickerson, Woody (ERCOT)

Public Utility Commission of Texas

PUC Commissioner Will McAdams testified before the committee on the PUC's role in the weatherization of generation facilities. In order to comply with SB 3, the PUC pursued a two phase approach toward implementation. SB 3 was passed by the legislature and signed by Governor Abbott on June 8, 2021. In October 2021, the Public Utility Commission of Texas approved anew rule (16 TAC § 25.55) which required generation entities and transmission service providers to complete winter weather emergency preparation measures and submit winter weather readiness reports in December 2021.

Electric Reliability Council of Texas

ERCOT conducted inspections of generation facilities and TSP (transmission service provider) substations in December 2021, as required by 16 TAC §§ 25.55(d) and (g). During this period, ERCOT inspected 302 generation resources and 22 TSP substations—a total of 324 facilities. In these inspections, ERCOT reviewed the winter weather readiness report for each facility and conducted a physical inspection of the facility to determine the accuracy of the information in the report.

Of the 302 generation resources inspected, ERCOT’s inspectors identified potential deficiencies at only ten resources with a total capacity of 2,129 megawatts, which represents about 1.7% of the total ERCOT generation fleet. As of January 17, 2022, all but three of these deficiencies had been addressed. These three units, which are operational, have a total capacity of 532 megawatts, or about 0.4% of the total ERCOT generation fleet.

Of the 22 TSP substations inspected, ERCOT’s inspectors identified potential deficiencies at six facilities. These were generally minor items. As of January 17, 2022, all of these deficiencies had been addressed.

These inspections demonstrate that the owners of generation and transmission infrastructure in the ERCOT region has taken the Commission’s weatherization mandate seriously and have demonstrated good faith in complying with the rule’s requirements. In fact, many generation entities and TSPs adopted winter weatherization measures that go above and beyond these requirements.

Woody Rickson, Vice President of system planning and weatherization at ERCOT, testified that after phase 1 rulemaking by the PUC, ERCOT inspected 302 units before winter of 2021. The units that they inspected represented 85% of the lost megawatt hours during winter storm Uri. Contractors were used for inspections. Performance during last February 2022 was an improvement of the Texas electricity fleet. It was a positive representation of the effort of grid changes since reforms have been made. ERCOT will be ready on phase II inspections before the end of 2022 and into 2023.

Texas Competitive Power Advocates

Michele Richmond, the Executive Director of the Texas Competitive Power Advocates, testified on power generator member companies commitment to goals of extreme weather preparedness. Before phase I, member companies had already began making improvements to resources and they have invested over 100 million dollars in winter preparation. They have also expanded dual fuel capabilities and purchased additional gas storage. Additionally, the balance between summer and winter is an important distinction. In the summer, it may be important to remove winter weatherization measures to keep the facilities cooler during hotter weather.

According to Ms. Richmond, it is important to note that independent power generators cannot receive cost recovery on weatherization expenditures. The only way they can recoup investment is through market prices. However, there is \$30 million dollars in grants from the federal government available for generation weatherization in Texas, but a 15% match by the state is

required to draw down those funds.

Texas Electric Cooperatives

Julia Harvey, vice president of government relations for Texas Electric Co-operatives (TEC), testified on the unique perspective of weatherization of electric co-operatives. They desire flexibility and a recognition that one size does not fit all in terms of weatherization requirements because they operate in every diverse region of the state. Their member co-ops have implemented similar measures to what the independent power generators have done as well as the dual fuel capabilities. She also stated that they see hurricane preparedness as a component of weatherization and that they have strategies to accomplish this weatherization as well.

FINDINGS

The State of Texas is well-positioned for the weatherization of power generation facilities due to Senate Bill 3, passed by the legislature, signed into law by the Governor and implemented by the Public Utility Commission of Texas. Following Winter Storm Uri, the performance by electric generation facilities during the winter of 2021 showed that positive strides have been made.

After the public hearing, the PUC adopted the phase II weatherization standards. This rulemaking was adopted on October 6, 2022. The PUC's phase II weatherization standards require generation entities and transmission service providers in the ERCOT power region to maintain weatherization preparation measures for both winter and summer seasons. These entities are required to prepare their facilities to meet regional temperature and wind chill standards based on a historical weather study developed by ERCOT in consultation with the State Climatologist that will be updated every five years. Additionally, the new rule requires utilities and generation entities who experience repeated or major weather-related failures to undergo an independent assessment by a qualified professional engineer. Entities that fail to comply with this rule will be subject to administrative penalties as high as one million dollars per violation, per day. This new rule implements Senate Bill 3 §13 and §16 from the 87th Regular Session.

CHARGE III: The Reduction of Transmission Congestion

Review the status of projects intended to reduce transmission congestion within the electrical grid.

BACKGROUND

Transmission congestion occurs when a consumer does not have access to the cheapest generation. Simply put, transmission congestion can be defined as when a transmission system is unable to move lower cost power to higher cost areas. This presents costs to consumers and negatively impacts the grid. According to the ERCOT independent market monitor, at the end of July of 2022, the real time congestion costs to Texans were \$2.1 billion dollars. During the entire year of 2021, congestion costs were \$2.1 billion dollars. Transmission congestion is a matter which must be addressed by both policymakers and regulatory leaders.

SUMMARY OF COMMITTEE ACTION

Public Hearing:

The Texas House Committee on State Affairs held a public hearing on June 23, 2022 at 10:00 AM in State Capitol extension room E2.010 to discuss Interim Charge #3.

The committee heard invited and public testimony from the following witnesses:

- Bratcher, Lee (Texas Blockchain Council)
- Buck, Ellen (Oncor Electric Delivery)
- Glotfelty, Jimmy (Public Utility Commission)
- Lasher, Warren (Self)
- Linenschmidt, Larry (Self)
- Rickerson, Woody (ERCOT)
- Ryan, Jason (CenterPoint Energy)
- Smith, Wayman (AEP)
- Willette, Lynnae (Texas Solar Power Association)

Public Utility Commission

Commissioner Jimmy Glotfelty of the PUC stated that the grid is the strongest component of the electric system in ERCOT. However, there are problems with generation, demand, and congestion. According to commissioner Glotfelty, congestion occurs when a transmission system is not able to move lower cost power to higher cost areas. Congestion can occur because of the lack of transmission capacity or a stability situation which requires ERCOT to minimize the amount of power that can flow down a path. Generators, particularly wind and solar, are also building behind areas of congestion and adding to congestion problems. Commissioner Glotfelty testified that congestion costs had reached \$1.6 billion dollars at the time of the hearing. This is higher than past years. While congestion will never be totally eliminated, it is important to address the most expensive aspects of congestion to consumers.

According to Commissioner Glotfelty, the PUC has been focused on efforts to reduce transmission congestion. They have been discussing technology solutions, transmission lines, and operational issues. Dynamic line rating, higher capacity conductors, high-voltage-direct current (HVDC) lines can play a role and should be evaluated as part of transmission planning processes. All of these allow more power to flow down existing lines. Over the long term, these are cost effective measures. Commissioner Glotfelty also suggested looking into increasing the highest voltage allowed in ERCOT from 345,000 volts to 500,000 volts, which allows more power to flow down a right-of-way.

The PUC has also been working at relieving congestion and reliability problems in the Rio Grande Valley (RGV), which has been facing congestion constraints and reliability issues for years. To accomplish this, the PUC ordered transmission lines to be built in the RGV for the first time in history. Solving this problem provided the RGV with reliability, resiliency, and cost benefits.

Commissioner Glotfelty also addressed the passage of Senate Bill 1281 which passed during the 87th Legislative Session. This legislation reinstated the consumer benefit test for the approval of new transmission lines. At the time of this hearing, Commissioner Glotfelty expressed his desire for the consumer benefit test to be used by the end of 2022.

Electric Reliability Council of Texas

Woody Rickerson of ERCOT addressed transmission issues of the state. The ERCOT transmission system connects over 1,000 generating units and is growing rapidly. According to Mr. Rickerson, the generating interconnections are becoming smaller. Smaller megawatt units are interconnecting more frequently than large units. There is also a very small amount of thermal generation interconnecting. Over the past few years, most new generation has been wind and solar. Going forward, it will be solar and batteries. Lastly, generation is located far from load. Power needs to travel hundreds of miles to load centers. This is a very complex way to deliver power. According to Mr. Rickerson, many transmission issues are due to this.

ERCOT must plan fifteen years into the future, anticipating what trends will exist at that time. In a five year plan, they work with market participants to identify potential problems and project what the grid will look like. They then identify potential shortcomings which then are used to

generate new transmission projects. Transmission service providers are responsible for building these out.

Additionally, there are two broad categories of needs for transmission building. First, transmission is built because of a reliability issue. This ensures that transmission is built to serve load. Second, transmission is built for economic issues. Simply put, if a line is causing a certain amount of congestion issues and the line relieving the congestion would cost less than the existing congestion costs, then it would make economic sense to build that line to relieve the congestions. Recently, the economic criteria for building transmission has been based on production costs. Production costs are the fuel costs to produce power. All generating processes have their own production costs. If a line can be built to lower the overall production costs then that meets that criteria. Senate Bill 1281 added the consumer benefit test to transmission planning. The consumer benefit test takes into account what consumers ultimately pay and if a transmission line may give consumers access to cheaper generation. ERCOT is working with the PUC now to put these tests into place.

For reliability, there are two tests. First, the thermal test keeps power flow on the system balanced to ensure that there is not an unsafe amount of power flowing through equipment. Second, is the stability test which keeps the transmission system from being throttled by power-tripping issues. Generic transmission constraints (GTCs) are stability constraints. This is when ERCOT must restrict the amount of wind and solar power from west Texas into the rest of Texas to keep the system within stability constraints. These GTCs cause congestion. If the congestion is great enough, an economic project may be justified. SB 1281 also created a new resiliency standard which is currently under development.

Currently, there are largescale transmission projects underway throughout Texas, and a \$500 million dollar project planned for in the western region of Texas. The \$1.2 billion dollar lower Rio Grande Valley project was approved in 2021 and is in the process of obtaining CCNs and rights-of-ways and will be completed in 2027. In 2019, the Corpus Christi Northshore Project was approved and is currently under construction for reliability purposes to serve new load. This project will be completed in 2024.

CenterPoint Energy

Jason Ryan, executive vice president for regulatory services and government affairs at CenterPoint Energy, testified on the unique challenges that the Houston area faces in regards to transmission congestion. There is an insufficient amount of electric generation in the Houston region to meet the needs of consumers, meaning that it is necessary for transmission lines to bring in power from other areas of the state. Mr. Ryan stressed the adoption of rulemaking for Senate Bill 1281 and stated that CenterPoint has identified projects that may be eligible for the consumer benefit test.

Mr. Ryan suggested reducing the amount of time required for CCN approval for transmission line projects at the PUC. Currently, there is a process to shorten the approval time for critically needed projects. Mr. Ryan suggested that the legislature should consider shortening the approval time for projects that are economically justified or projects that are needed for resiliency.

To meet the unique transmission needs of the Houston region, CenterPoint Energy has load management programs that compensate large commercial customers to go offline during peak periods without involuntarily shutting off residential consumers. Additionally, in accordance with House Bill 2481, CenterPoint Energy is able to use emergency mobile generation at their substations under a load shed event or during abnormal grid conditions.

Oncor Energy

Ellen Buck, vice president of business and operations services at Oncor, testified on Oncor's efforts to relieve congestion and facilitate an efficient ERCOT grid. Oncor is serving rapidly-growing areas of the state where peak demand is growing at 15% year-over-year and along the I-35 corridor where businesses are expanding into Texas. Since most generation resources are located far from load centers, Ms. Buck addressed three needs for the transmission system in Texas. First, the system needs to be resilient with sufficient pathways to deliver power. Second, adequate infrastructure is needed in place to meet future growth. Third, a flexible system is needed for growing intermittent generation.

According to Ms. Buck, Oncor sees growing congestion in areas of the state at the end of CREZ (Competitive Renewable Energy Zones) lines. The CREZ transmission project in 2005 brought renewable energy from wind-abundant areas of the state to areas of high population. Oncor was able to implement a \$13 million dollar transmission upgrade to relieve congestion in 2019. Since 2020, Oncor has worked to build out a transmission line to the western-most CREZ line to mitigate congestion costs.

While the massive growth of Texas presents great economic development opportunities, Ms. Buck stated that this also comes with challenges. Some challenges going forward for Oncor include requests for interconnecting blockchain facilities, fleet vehicle electrification, electrification of downstream oil and gas processes, semiconductor manufacturing, data centers and many other growth industries.

AEP Texas

Wayman Smith, director of transmission planning for AEP Texas in the western region of Texas, testified on transmission congestion from the perspective of AEP. The AEP transmission companies within ERCOT are AEP Texas and Electric Transmission Texas (ETT). They own approximately 9,500 miles of transmission lines in ERCOT. AEP Texas delivers electricity to over one million homes, businesses and industries in south and west Texas, and, in the last 5 years, AEP Texas and ETT have added approximately 360 miles of new transmission and rebuilt approximately 1,300 miles of existing transmission.

According to Mr. Smith, the Lower Rio Grande Valley (LRGV) presents some unique challenges. LRGV is at the edge of the ERCOT grid and connected to the rest of the grid through limited and long-distance transmission circuits. This area is also susceptible to tropical storms and hurricane related outages. Three of the top ten most congested constraints on the ERCOT system in 2020 were caused by outages related to Hurricane Hanna storm damage. Continuous load growth is expected in LRGV. In addition, there have been several large industrial load interconnection requests in the LRGV and Corpus Christi areas. There are four existing

conventional power plants with a total of 1,461 MW and no upcoming planned conventional generation. For future power supply, there has been a significant increase in renewable generation in and close to the LRGV. The limited conventional generation and transmission infrastructure serving LRGV, extreme weather or extended outages (transmission and/or generation) could significantly reduce the LRGV's load serving capability.

Mr. Smith stated that seven of the sixteen existing Generic Transmission Constraints (GTCs) used to maintain grid stability in operations are in the LRGV area. ERCOT endorsed the ten LRGV projects totaling approximately 350 miles of additional transmission and the projects are anticipated to be completed by 2026. In addition to the new transmission lines, the Public Utility Commission ordered the construction of a second circuit on approximately 300 miles of existing transmission serving the Rio Grande Valley. AEP is estimating \$60 million dollars of annual demand cost savings and 1,500 GWh of reduced generation curtailments.

Mr. Smith also updated the committee on other transmission projects. The Corpus Christi North Shore project was needed to serve 1 GW of new industrial and LNG load in the Corpus Christi area. The Corpus Christi North Shore project received the final Public Utility Commission order earlier this year and the project is now under right-of-way acquisition and design. Once the project is complete in 2024, the full 1,085 MW of load can be served reliably.

Mr. Smith recommended new scenarios of transmission planning. First, a new criteria which would enable transmission service providers to build new transmission or upgrade existing transmission for hardening the system and building margin to mitigate for unforeseen outages under summer peak conditions. This would provide flexibility in allowing planned transmission outages across all twelve months and will better align planning with operations. Mr. Smith stated that the summer moratorium (May 15 thru September 15) narrows the outage window for construction.

Second, Mr. Smith stressed the development of transmission headroom in strategic areas. Within the AEP system, there are some high value areas for developers. Many large load customers hope to interconnect in 24 months or less, but it takes 5-7 years for filing a CCN and ultimately designing and constructing the facilities. This puts the state at an economic disadvantage. In strategic areas, it is necessary to build transmission headroom according to Mr. Smith.

Lastly, Mr. Smith stated that new transmission criteria or protocols specific to a region may be required in order to address risks due to limited transmission import, geographical specifics and the type of local resources serving the area, such as a high concentration of renewable resources and lack of dispatchable resources.

EDF Renewables

Lynnae Willette, director of regulatory and legislative affairs for EDF Renewables, shared concerns and solutions for the transmission grid congestion in Texas. Ms. Willette serves as the president of the Texas Solar Power Association (TSPA) and serves on the executive committee of the Advanced Power Alliance. In Texas, EDF Renewables has invested billions of dollars and currently owns, manages and is developing over 4 GW of wind, solar, and storage facilities. TSPA is a trade association of 50 companies investing in Texas solar at all levels, and the

Advanced Power Alliance is a multi-state trade association that promotes the development of renewable energy and advanced energy technologies.

According to Ms. Willette, GTCs and general congestion are a growing problem in ERCOT. In a well-functioning grid, low-cost power can meet consumer demand when and where needed, but inadequate transmission can cause power flows on lines to reach their limits and results in additional costs. There are now eighteen GTCs currently limiting the flow of all generation which impacts consumers and 4 generators alike. GTCs are placed on lines with little notice and cannot be predicted by generators when making investment decisions. By the end of 2022, congestion costs to consumers are anticipated to be over \$2 billion dollars.

Ms. Willette stressed that the legislature should prioritize the following matters to address transmission challenges. She urged the implementation of Senate Bill 1281 by the PUC. Additionally, Ms. Willette asked the legislature to direct ERCOT to expedite its analysis of pending projects using the current test coupled with the calculation of congestion savings contained in SB 1281. Once the rulemaking is complete, ERCOT can fully update and implement the new transmission review process. Finally, she stressed the importance of passing legislation directing ERCOT and the PUC to identify high priority projects that ERCOT is already assessing and urgently advance them as well as considering other improvements to the transmission planning process.

Texas Blockchain Council

Lee Bratcher, president of the Texas Blockchain Council, testified on the relationship between bitcoin mining and relieving transmission congestion. According to Mr. Bratcher, bitcoin mining is a unique load which incentivizes more generation but also has the ability to quickly ramp down. They can be located anywhere and access low cost energy. Therefore they relieve congestion. They co-locate by wind and solar generation. Bitcoin miners can turn off within a few seconds either through ancillary services or economic dispatch and operate continuously unless there is peak demand occurring. Mr. Bratcher stressed that the bitcoin mining community is working with the PUC and ERCOT to ensure that they are operating as good grid citizens in Texas.

Warren Lasher

Warren Lasher testified as a resource witness on transmission. Over the past seventeen years he has worked on transmission issues like congestion and cost effectiveness and transmission and economic analysis of transmission. Mr. Lasher stated that it is important to note that when congestion is seen on the transmission system, it cannot be directly compared to the cost of transmission. When transmission alleviates congestion, it will lower costs for some consumers and raise costs for some generators. Transmission planners work to maximize the benefit to consumers by finding projects where the savings to the consumers are greater than the total cost of a transmission project.

Mr. Lasher also stated that congestion costs are a feature of our electricity market. The nodal market is designed to charge the consumer the marginal cost of power, so that the cost of the last megawatt that was served and designed to pay the generator the marginal price at their location.

The market is set this way to provide incentives. This nodal market illuminates the areas of low cost. The city of Houston, the lower RGV and the Permian Basin are locations of the grid where customer demand is getting ahead of transmission development. In these cases the only solution is newly built transmission according to Mr. Lasher.

The market also provides consumers the ability to protect themselves from transmission congestion costs through congestion revenue rights, which are financial hedges against congestion. Load serving entities can purchase these to protect themselves over time from congestion. Mr. Lasher closed by reiterating that identifying projects that are cost-effective to consumers is the main trick of transmission planning. SB 1281 is a step in that direction by instructing the PUC to expand the economic analysis that is conducted by ERCOT.

FINDINGS

As noted by Mr. Rickerson of ERCOT, thermal generation interconnections are decreasing in the state, and generation units are locating even further away from load centers. Power is needing to travel far distances to meet the needs of consumers. This has contributed to congestion issues. As evidenced by the public hearing, congestion has been negatively affecting consumers, and different regions are affected by congestion more so than others. Fortunately, projects have been implemented and are ongoing to reduce transmission congestion within our electric grid.

Public testimony on this charge shows that TDU's are working to mitigate congestion in highly problematic areas of the state. Additionally, for the first time, the PUC ordered transmission built in the LRGV to mitigate congestion and reliability concerns. These are important projects, but more needs to be done to move transmission projects forward in Texas. To that end, the PUC must complete rulemaking on Senate Bill 1281 and implement the bill containing language in accordance with the intent of the legislature.

Additionally, as Representative Raymond expressed, transmission and distribution utilities must keep regulators and policymakers aware of the growth that they are seeing in their territories. These market participants are expertly equipped with the knowledge on what needs will be required for transmission planning going forward. This will be necessary to ensure that Texas is competing on a level playing field with other surrounding states to serve the needs of businesses and residences. Transmission planning is a component of economic development and the commerce of Texas depends on a robust forward-thinking approach.

Reliability and affordability also must be at the forefront of transmission planning. As noted by witnesses, transmission congestion costs have grown exponentially between 2021 to 2022. As Representative Hunter noted, the public and the legislature must be informed of the ongoing costs of transmission congestion, and the PUC and ERCOT must have transparent messaging on the costs which consumers are paying. Reliability must also continue to be a factor in congestion mitigation. The PUC should explore utilizing similar mechanisms used to combat ongoing congestion in the LRGV.

CHARGE IV: Study the Status and Adequacy of Cybersecurity Preparedness Within the State of Texas.

Study the status and adequacy of cybersecurity preparedness among state agencies and contractors. Make recommendations that enhance cybersecurity measures considering evolving threats to Texas' information technology infrastructure.

BACKGROUND

As data-driven processes become more intertwined with how both the public and private sectors operate, these processes are being exploited by individual and nation-state actors. Additionally, international tension from the Russian-Ukrainian conflict has led to increased overall attacks from nation-state backed perpetrators. The importance of protecting the state's private data increases year over year as we rely more on these data-driven processes.

Cybersecurity is a difficult but important process due to several increasingly pertinent factors. These factors include the ability for threat actors to infiltrate systems from anywhere in the world, increasing vulnerabilities to a rapidly growing cyberspace, and the connection between the cyber system and physical systems.

The Texas population is set to grow rapidly between now and 2050, with populations set to reach nearly 50 million¹³. This substantial growth, and the economic opportunities it will bring also attract more cyber-attacks within the state's border.

Texas is currently ranked third in cybercrime victims per state with over 41,000 victims. While Texas is ranked third in total cybercrime victims, it is ranked second in total monetary losses at \$606.2 million¹⁴.

The size of the Texas population in relation to other states affects the state's ranking on this list. However, proper steps can be taken to halt and reduce the number of cybersecurity victims in Texas as well as mitigate the monetary loss from such attacks. The state of Texas recognizes the importance of cybersecurity, and the legislature has maintained a strict focus on cybersecurity matters for multiple years.

House Bill 8, the Texas Cybersecurity Act, passed during the 85th Legislative Session. This bill required the study of cybersecurity in the state, each state agency's current information security plans, and the risks and vulnerabilities of state agency cybersecurity. Following the 85th regular session, the Texas House Select Committee on Cybersecurity met pursuant to HB 8. The select committee studied cybersecurity education, curriculum, training, workforce, and outreach to increase interest in the technology career field. The select committee's testimony included state and local entities and how each handle cybersecurity within their jurisdiction.

Currently, Texas Administrative Code chapter 202 presents general information security standards for state agencies to manage security risks and requires that agencies report any security concerns to the Department of Information Resources (DIR). DIR has jurisdiction over

Texas Administrative Code (TAC) 202, Information Security Standards, guiding both state agencies and higher education. The statute requires the heads of state agencies to designate an Information Security Officer (ISO) who has the explicit authority and duty to administer the information security requirements agency-wide. The ISO has the responsibility of developing and maintaining an agency-wide security plan, information security policies and procedures, resource allocation, personnel training, guidance and assistance, risk and security assessments, information security policies, and reporting.

Additionally, TAC 202 includes security reporting standards for agencies. Each agency ISO shall report directly to the agency head on the adequacy and effectiveness of information security policies, procedures, practices, as well as address risks, relevant implementation statuses, and state agency information security requirements and requests. The agency ISO is also responsible for Urgent Incident Reports, which report to DIR the significance and impact of security incidents on an agency.

Each state agency, public university, and junior college is required to develop an information security plan every even-numbered year, pursuant to rule 1 Texas Administrative Code section 202.24. The Information Security Plan encompasses planning and prevention practices that include potential risks and previous incidents to provide an insight into the entity's information security practices¹⁵. The rule also includes security risk management provisions, security control standards, and the Texas Risk and Authorization Management Program (TX-RAMP) requirements for state agencies, which is discussed in the public hearing portion on this charge.

SUMMARY OF COMMITTEE ACTION

Public Hearing:

The Texas House Committee on State Affairs held a public hearing on April 26, 2022, at 9:00 AM in State Capitol extension room E2.010 to address interim charge #4. The Committee heard invited and public testimony from the following witnesses:

- Apostolakos, Peter (Self; Round Rock ISD)
- Contreras, Eduardo (Self)
- Crawford, Amanda (Department of Information Resources)
- Cummings, Chris (Self; Humble ISD)
- London, Dennis (Self)
- Rainosek, Nancy (Texas Department of Information Resources)
- Williams, Jeoff (Texas Department of Public Safety)

Texas Department of Information Resources

Amanda Crawford and Nancy Rainosek of the Texas Department of Information Resources delivered a cybersecurity overview of DIR's involvement as the state's technology strategy, solutions, and security agency. DIR began with an update on the implementation of two key cybersecurity bills from the 87th Legislative Session, House Bill 1118 and Senate Bill 475.

HB 1118 relates to state agency and local government compliance with cybersecurity training requirements. It requires cybersecurity training for elected and appointed officials who have access to the computer system or database and use a computer for at least 25% of their required duties. The bill also requires local governments to submit written certification of cybersecurity training completion when applying for the Governor's Division of Criminal Justice grants. It requires a non-compliant local government to pay back grant funds and makes it ineligible for additional grant funds for two years. It also requires state agencies to include a completion of training certification in their strategic plan. DIR implementation on HB 1118 includes updated training requirements on the DIR website and added grant and strategic plan requirement language to training confirmation emails sent to state agencies. DIR also developed a system for the Office of the Governor to verify cybersecurity training completion.

SB 475, an omnibus cybersecurity and data bill, requires DIR to establish a state risk and authorization management program that provides a standardized approach for security assessment, authorization, and continuous monitoring of cloud computing services that process the data of a state agency. The bill creates the Texas Risk Authorization and Management Program (TX-RAMP), the State Agency Data Management Advisory Board, Data Management Officers, Texas Volunteer Incident Response Teams (VIRT), regional cybersecurity working groups, and a pilot Regional Security Operation Center (RSOC). The bill also requires that any state agency that has over 150 employees must have a data management officer on staff and prohibits agencies from collecting biometric identifiers without consent. TX-RAMP provides assurances about the adequacy of security controls for cloud computing services used by state agencies and higher education institutions. It is a framework for collecting information about cloud services' security posture and assessing responses for compliance with required controls and documentation. State agencies and higher education institutions must only enter or renew contracts to receive cloud computing services that comply with TX-RAMP. Cloud offerings subject to TX-RAMP level 2 certification must have received a TX-RAMP certification to contract with state agencies or higher education institutions and public community colleges by January 1, 2022. Level 1 certification is required to be met by January 1, 2023.

Ms. Crawford discussed other SB 475 program implementations that DIR is using to protect the state from cybersecurity attacks. Texas VIRT provides rapid response to cyber security attacks throughout the state. Texas VIRT is a volunteer program with individuals that have expertise addressing cybersecurity events for Texas entities. Pursuant to Government Code Section 2054.52005, the Texas VIRT teams may respond to a cybersecurity event that affects multiple participating entities or a declaration by the governor for a state of disaster caused by a cybersecurity event.

The RSOC is a pilot program established by SB 475 in response to the 2019 incident in which 23 Texas cities were the victims of the same ransomware attack. One of the incident response team's largest challenge with that incident was the travel time it took to be able to quickly assist those local governments. This pilot program is expected to be able to respond to these incidents more rapidly with regionally located operation centers. The pilot program would provide local governments with secure network infrastructure, monitoring, training from universities and alleviate the geographic issues that currently impact the centrally located DIR staff. Angelo State University has been selected for the pilot program. If the pilot is successful, DIR' intends to eventually partner with several universities across the state to address and respond to cybersecurity incidents quickly no matter where those events occur in the state. Additionally, regional cybersecurity working groups were established and a framework for mutual aid agreements was created to assist in responding to cybersecurity events.

Ms. Crawford and Ms. Rainosek discussed the current landscape of cybersecurity in the state of Texas. As of now, the state's cybersecurity landscape operates under a federated model in which all agencies are responsible for their own information technology and the security of their systems, applications, and the data they each hold. Under state statute, agencies have a requirement to report security incidents to DIR and DIR is responsible for monitoring and responding to incidents on the state network.

DIR operates the Texas Cybersecurity Framework, which contains specific security control objectives to help organizations identify, assess, and manage cybersecurity risks in their environment. The framework is divided into five functions: identify, protect, detect, respond, and recover. The framework is comprised of 42 security control objectives. An organization uses the cybersecurity framework to better understand, manage, and reduce its cybersecurity risks. Using the frameworks sets of objectives, a user can assign a maturity level for the organization based on a degree of implementation, ranging from a maturity level of 5 (efficient, optimized) to 0 (none, nonexistent). Organizations can learn about the efficiency of their cybersecurity tools by undergoing a Texas cybersecurity framework assessment provided by DIR.¹⁶

Within DIR, the Office of the Chief Information Security Officer (OCISO) focuses on state leadership policy, direction, awareness, guidelines, and initiatives. The DIR security services within the OCISO includes the proactive and reactive steps that the agency takes in order to ensure cyber attacks do as little damage as possible. As Ms. Crawford stated in her testimony, "we have to be perfect all the time; the bad guys, they only have to be perfect once." The OCISO security services identify and protect, detect and respond, recover, and then review and improve following information security incidents. DIR also provides statewide incident response services to assist organizations impacted by a cybersecurity incident. This includes support, guidance, and resources through each phase of a cybersecurity incident. The OCISO is also responsible for cybersecurity coordination within the state and uses the Texas Information Sharing and Analysis Organization (TX-ISAO) to do so. TX-ISAO provides a forum for state entities and the private sector to share cybersecurity threat information as well as ways to respond and prevent those threats. Cybersecurity coordination also involves public and private sector collaboration as well as through the Texas Cybersecurity Council.

Ransomware attacks in the private sector have also raised concerns at DIR. The Cyberstar program allows anybody in Texas to obtain a Cyberstar certificate by applying and showing that they are doing their due diligence on their own cybersecurity by meeting the prescribed criteria. At the time of the public committee hearing, the program was just beginning to roll out. What is concerning for DIR is that many private sector companies choose to bypass strong cybersecurity measures because they believe that they are not susceptible to a cybersecurity attack. Cyber incidents among private sector companies are common and are not prejudiced based on company size. Cyber threats to companies are inevitable, it's not a matter of if an incident will occur, it is a matter of when. Companies must have the appropriate backups, mitigation plans, and must understand the data that they hold so that the proper level of security is being employed on the different types of data they may hold.

Within the OCISO, the statewide Cybersecurity Coordinator leads the Texas Cyber Security Council. The Cybersecurity Coordinator is a statutory position that reports to the Chief Information Security Officer. The cybersecurity council, which meets quarterly, is made up of representatives from state agencies, higher education, local governments, and the private sector. The Texas Cybersecurity Council was created by the legislature and charged with providing cybersecurity recommendations to the legislature on how to improve Texas' cybersecurity posture. The Texas Cybersecurity Council also establishes criteria for agencies that are threatened by a cyber attack as well as establishing best practices for agencies and training current IT and cybersecurity employees to mitigate risks of cybersecurity attacks.

DIR also operates the Network Security Operations Center (NSOC) which provides state agencies network security and incident response for network security incidents. DIR's Cybersecurity Operations team at the NSOC are responsible for cybersecurity operations, which involves network security monitoring, intrusion prevention services, alerting practices, incident response guidance, and threat analysis for state agencies. The Cybersecurity Operations team blocks malicious traffic, alerts agencies to suspicious outbound traffic, detects and mitigates Distributed Denial of Service (DDoS) attacks, supports agency incident investigations and incident response efforts, analyzes reported suspicious emails and attachments for malware and phishing, provides oversight of Shared Technology Services (STS) security operations, and gathers and shares cybersecurity intelligence.

DIR has taken steps to deliver security offerings to the state government, local governments, and institutions of higher education. For example, security assessments, vulnerability scans, penetration tests, and endpoint detection and response are offerings provided to these entities. DIR has tools at its disposal to provide education and secure our state entities, however, many factors hinder its ability to do so. First of all, agencies are often forced to fund either their mission or upgrade their outdated legacy technology systems. As cyber-attacks become more complex, these legacy systems become a liability to the state and the sensitive data of its constituents. Secondly, with heightened global tensions, the likelihood of malicious cyber activity has increased, and Texas could be a major target. For example, the Texas Department of Public Safety (DPS) has reported that they have recorded a 2880% increase in emails that contain a virus in the last six months. Thirdly, the average county election officials' maturity assessed within the cybersecurity framework was less than ideal. This lack of maturity can be attributed to size, budget, and resources. These attributions also apply to other local entities.

DIR offers a multitude of reporting avenues for entities that experience a cyber breach. Urgent Incident reporting to DIR is available through the Statewide Portal for Enterprise Cybersecurity Threat, Risk, and Incident Management (SPECTRIM). State agencies and institutions of higher education are required to timely report any incidents that may spread to other state systems, result in criminal violations, and may involve the unauthorized disclosure or modification of confidential information. State agencies and institutions of higher education must also submit a monthly security-related events report to DIR through SPECTRIM. Local governments, school districts, and charter schools may submit incident reports to the previously mentioned TX-ISA0 program.

SPECTRIM, along with its reporting tools, provides tools for managing security incidents, conducting risk assessments, storing and managing organizational policies, and performing assessment and authorization. SPECTRIM provides IT security vulnerability management, which integrates RiskRecon scans of internet-facing assets to determine vulnerability priority based on asset value and issue severity. Through this portal, entities and organizations can manage scan results, create vulnerability tickets, and make informed risk decisions associated with identified vulnerabilities.

Along with the many reporting and responding tools that DIR offers, they also place a heavy importance on cybersecurity education. DIR offers many certified programs for state and local entities through statewide security awareness training, and provides annual timelines for the certification of these trainings, as well as standards for certification. DIR also offers end-user security awareness training that meets the mandatory security training requirements. Through Proofpoint's Security Awareness Training (PSAT) program, a phishing simulation allows agencies to develop and deliver targeted education and training to promote awareness and understanding of phishing techniques to employees within the agency. DIR is also involved in many outreach and growth programs that provides guidance to organizations and highlights the growing importance of cybersecurity.

Cybersecurity Concerns in the State and Geopolitical Tensions

Several external factors are raising concerns about the security of state agencies and the entities they oversee. One of these concerns includes the increased global tensions following the Russian invasion of Ukraine in February 2022. According to the Cybersecurity and Infrastructure Security Agency (CISA), Russia's invasion of Ukraine could expose U.S. organizations, large and small, to malicious cyber activity. For the state of Texas, these global tensions serve as a catalyst for increased attacks on our critical infrastructure during a time of increased reliance on digital technology and data-driven processes.

On February 25th, one day after Russia invaded Ukraine, Governor Abbott sent a letter to DPS and DIR directing the two agencies to enhance Texas' cybersecurity using best industry practices, and ensure that Texas is ready and able to respond to a potential cyber attack.¹⁷ DIR, using cyber operations counter measures, enacted several defenses to comply with Governor Abbott's directive. DIR has since increased active bi-lateral directional intelligence sharing with federal, state, and industry partners. They have increased aggressive blocking and lowered standard thresholds for threat notifications and subsequent investigations. DIR's Cybersecurity

Operations team at the NSOC has maintained on-going advanced threat hunting operations in the state's data centers and has mitigated other threats.

Russia, and other nation state threats, have become more and more sophisticated in their malicious cyber activities. Russia, China, North Korea, and Iran have all been deemed a significant threat by CISA. According to CISA, these countries' state-sponsored threat actors are targeting several industries and organizations including COVID-19 research, governments, election organizations, healthcare, pharmaceutical, defense, energy, video gaming, nuclear, commercial facilities, water, aviation, and critical manufacturing.

Additionally, the COVID-19 pandemic has dramatically accelerated the use of digital channels for business and communication. The increased use of digital technology by consumers and businesses creates more opportunity for bad actors to access private information when the information is not properly protected or incidents are not properly reported.

School Districts

In 2019, the Legislature passed Sente Bill 820 in response to the growing ransomware threat that K-12 schools were facing. SB 820 requires that each school district establish a cybersecurity policy that defends the district's computer systems against security incidents and to evaluate their cybersecurity risks in order to properly mitigate those issues. The bill also stipulates that the district superintendent is responsible for appointing a cybersecurity coordinator that is responsible for reporting security incidents to the TEA.

FINDINGS

Texas' cybersecurity efforts, while a model for other states, must be continuously built up through all levels of government to ensure the safety of our private data. Local governmental entities are the most vulnerable to cyber-attacks and must be emboldened with better-operated and funded cybersecurity measures. Overall, more can be done to further the adequacy of cybersecurity in this state.

Recommendations

The state of Texas must continue to invest in its cybersecurity infrastructure through state cybersecurity initiatives, require reporting from local governments to mitigate damages from ransomware attacks, and find ways to staff IT positions in the public sector and indirectly in the private sector through workforce development strategies. Once more, the state's local governments and school districts face the biggest uphill climb, and our future efforts should be geared towards those entities.

Further recommendations:

- Legacy modernization: Consider continued investment beyond the nearly \$700 million in state funding for cybersecurity and legacy system modernization.

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- Agency IT Staffing: Consider cost of living increases to keep our governmental cybersecurity jobs competitive in the Austin area as more technology companies move into the region.
 - Local government cybersecurity: Consider the funding of additional Regional Security Operations Centers (RSOC) created by SB 475. RSOCs will support local governments that may not have the experienced staff or the budget for a mature cybersecurity program.

Legislative recommendations:

- Adopt legislation requiring local governments to follow the same requirements as state agencies and notify DIR in the event of a breach or suspected breach of system security,
- Require all public sector employees, including all public school and legislative branch employees, to take cybersecurity training annually
- Require local governments and school districts to utilize .gov and .edu domains for websites to minimize government website spoofing and provide Texans an authoritative source for information.
- Codify the *Texas Division of Emergency Management Annex Emergency Support Function (ESF) 20 Cybersecurity*, which details the state incident response plan in the event of a declared cybersecurity disaster.

CHARGE V: Review of state government procurement of goods and services from Russian nationals or government

Review the impact of state government procurement of goods and services from businesses and other commercial entities owned or controlled by the Russian government or Russian nationals, and determine the need for restrictions on state government procurement. Consider the impact of any proposed procurement restrictions on state government efficiency and effectiveness and the state’s access to scientific and technological advances.

BACKGROUND

Matters surrounding state business with foreign governments or other foreign entities have been addressed by the legislature in the past. For example, the Texas Comptroller maintains a working list of companies that do business with Iran, Sudan or foreign terrorist organizations.¹⁸ The state is prohibited from contracting with these entities.

Following the Russian invasion of Ukraine in February 2022, many countries responded by imposing a variety of sanctions against Russia. In particular, the Biden Administration announced a wide range of economic sanctions against the financial and technology sectors of Russia. With escalating international tensions, it has become necessary for the state of Texas to review any potential consequences that may result from the state’s affairs with Russian entities. On March 2, 2022, Texas Comptroller Glenn Hegar directed comptroller staff to review every state contract and procurement in the Statewide Procurement Division and every payment made through the Texas Treasury for possible ties to Russian-owned businesses.¹⁹

SUMMARY OF COMMITTEE ACTION

Public Hearing:

The Texas House Committee on State Affairs held a public hearing on April 26, 2022, at 9:00 AM in State Capitol Extension room E2.010 to discuss Interim Charge #5. The Committee heard invited testimony from the following witness:

- Castillo, Korry (Tx Comptroller of Public Accounts)

Upon review of statewide contracts at the direction of the Texas Comptroller, no state contracts nor cooperative contracts were found between the state of Texas and Russian nationals or Russian government entities. The Committee raised concerns over potentially “hidden” contracts with Russian individuals or entities. For example, where a contract is held under multiple tiers of ownership, it may not appear to be associated with a Russian national or Russian entity on its face. The Comptroller’s office’s assured that no information or documents were found to be responsive to this interim charge based on a review of business locations, billing histories, and company names.

To resolve a situation in which there is a concern that a contract could be distantly associated with Russian ownership, contractual attestations or clauses may be added to certify that a contracting entity has no associations with Russian ownership.

Concerns were also raised over whether Russian individuals or entities have recently invested in Texas land. The Texas Comptroller stated that it does not maintain information on the citizenship of landowners, although the office may have the ability to locate the proper contact for such information.

FINDINGS

No state contracts nor cooperative contracts were found to exist between the state of Texas and Russian nationals or Russian governmental entities. On the international stage, conflicts between nations or other foreign actors can arise at any moment with differing degrees of intensity. Therefore, it would be prudent for state agencies to continuously review their contracts they may have with any potential adversarial foreign actor. Finally, it may be beneficial for the state to explore a formal process for monitoring land purchases by foreign nationals near critical infrastructure.

ENDNOTES

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