Mike Nasi
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Special Counsel, SSEB, &
Senior Advisor, Life:Powered

SLC Annual Meeting
July 11, 2021
FIRST – THANKS FOR YOUR LEADERSHIP! The U.S. Has Set the Global Standard for Making Air Safe While Growing the Economy Since 1970

Source: Environmental Protection Agency
We Made our Air Safe with Law & Technology Developed & Implemented by States/Industry in Cooperation With Fed. Government

Sources: Environmental Protection Agency, Air Trends Report 2018; Energy Information Administration, Total Energy Data Browser
LEADING THE WORLD: U.S. PM$_{2.5}$ 6x below global avg.

Source: World Health Organization (WHO)
WE NEED TO RAISE AMERICA’S ENERGY IQ:
SHOW YOUR FRIENDS & FAMILY!!
NEW ANIMATED EDUCATIONAL VIDEO SERIES ON ELECTRICITY & ENVIRONMENTAL TECHNOLOGY (www.LifePowered.org)

VIDEO 1 - Energy 101: Why We Need Electricity
https://youtu.be/ZfrBnddgFAU

VIDEO 2 - Energy 101: The Electric Grid
https://youtu.be/WiMtU6O1SxM

VIDEO 3 - Energy 101: Where Electricity Comes From
https://youtu.be/AKuoIeupGHc

VIDEO 4 - Energy 101: Energy Density
https://youtu.be/6d-HGzZHPG4

VIDEO 5 - Energy 101: Mining and Rare Earths
https://youtu.be/yu3mkFpiGmo

VIDEO 6 - Energy 101: Environmental Technology
https://youtu.be/aodsngzbZqA
The Stuff We All Agree About.
Bipartisan Support for CCUS

President Biden’s Energy/American Jobs Plan

• Direct pay for 45Q for two years
• 10-year extension for 45Q
• Expansion of the 45Q to include industrial applications, power generation and direct air capture
• SCALE Act to provide low-interest loans and funding for the buildout of CO₂ transport and geologic storage infrastructure

Pending Congressional Proposals

• Storing CO₂ and Lowering Emissions Act (SCALE Act)
• Carbon Capture Modernization Act
• Access 45Q Act
• Carbon Capture Utilization and Storage Tax Credit Amendments Act
• CCUS Innovation Act
• Extending Tax Incentives for Carbon Capture, Utilization, and Storage
• Carbon Infrastructure Financing
• Carbon Capture Utilization and Storage (CCUS) funding for R&D at DOE
Looming Threats on the Horizon.
Key Biden Energy-Related Announcements

**Rejoined** Paris Climate Agreement

- Anticipated new U.S. Nationally Determined Contribution (NDC) – 50-52 percent reduction from 2005 levels in economy-wide net greenhouse gas pollution in 2030
- The previous US NDC committed to reducing GHG emissions 26-28% below 2005 levels by 2025.
- The Biden administration will likely work to submit an updated US NDC for 2030 by the end of 2021, in time for COP26, which was postponed to Nov. 2021.
- Key Areas where NDC likely to be derived: FCAA 111 Rules (Methane & CO2), Vehicle Standards, Energy Efficiency, and assorted federal moves on procurement/land management.

**Nominated Progressive Candidates to Key Cabinet Posts on Energy/Environment**

- Jennifer Granholm (MI)(DOE)
- Deb Haaland (NM)(DOI)
- Michael Regan (NC)(EPA)

Created both Domestic (Gina McCarthy) and Diplomatic (John Kerry) Climate Directors
Key Biden Executive Orders Re: Energy

January 20th (Inauguration Day):

- **EO 13985**: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (January 20, 2021)
- **EO 13990**: Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis (January 20, 2021)
- **EO 13992**: Revocation of Certain Executive Orders Concerning Federal Regulation (January 20, 2021)

January 27th (Climate Day):

- **EO 14008**: Tackling the Climate Crisis at Home and Abroad
- **EO 14007**: Establishes the President’s Council of Advisors on Science and Technology (PCAST)
DEFINITIONS

**Equity**: the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

**Underserved communities**: populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, as exemplified by the list in the preceding definition of “equity.”
Protecting Health & the Environment & Restoring Science to tackle the “Climate Crisis” (EO13990) (cont.)

Section 2(a) – Review of All Agency Actions between 1/20/17 - 1/20/21
- Section 2(a)(i): Methane
- Section 2(a)(ii): Automobile Standards
- Section 2(a)(iii): Energy Efficiency Standards
- Section 2(a)(iv): Harmful air pollution
  - Mercury & Air Toxics Standards (MATS) Supplemental and RTR review
  - Cost/Benefit Transparency rule
  - Dose/Response Transparency rule

Section 2(b): Actions consistent with E.O. subject to OMB review
- Identify actions to be taken by 12/2021 to OMB within 30 days
- Identify actions to be taken by 12/2025 to OMB within 90 days

Section 2(c): New Oil & Gas Regulations
- By September 2021: New Methane & VOC E &P Rule
- By January 2022: Oil & Gas Ozone NAAQS FIP in California, Connecticut, New York, Pennsylvania, and Texas

Section 2(d): Review of all pending litigation
Section 4: Arctic Refuge (reinstates Obama EO restrictions)

Section 5: Accounting for the benefits of reducing “climate pollution”

- Accounting of costs from a global perspective and boil into cost/benefit analyses in rules
- Develop Social Costs of carbon (SCC) and nitrous oxide (SCN) and methane (SCM)
- Interagency Co-Chairs: OMB Dir., OSTP Dir., & Chair Council of Economic advisors
- Working Group to include most cabinet secretaries, EPA, national climate advisor, etc.
- Publish proposed SCC, SCN, and SCM within 30 days and final by 1/2022
- Incorporate into decision making by federal government including procurement.
Protecting Health & the Environment & Restoring Science to tackle the “Climate Crisis” (EO13990) (cont).

Section 6: Revokes Presidential Permit for Keystone XL Pipeline

• “Leaving the Keystone XL pipeline permit in place would not be consistent with my Administration's economic and climate imperatives”

Section 7: Other Action/Rule Revocations of interest

• Executive order addressing expediting NEPA environmental reviews for infrastructure (13766)
• Waters of the US Reform EO (13778)
• Energy Independence EO (13783) Which Undid Several Obama EOs, directed Methane/Clean Power Plan Rule Reviews, and Developed Agency Reporting/Analyses to Ensure that Energy Independence is not impeded.
• Antiquities, Off-shore Energy, Infrastructure, and Efficiency EOs (13792, 13795, 13834, 13868, & 13927)
• E.O. securing US Bulk Power System suspended for 90 days (13920)
• Draft CEQ NEPA guidance on GHG consideration and effects of climate change in NEPA reviews
• OMB and agencies shall take prompt steps to rescind orders, rules, guidelines, policies, etc., as identified herein and if appropriate through rulemaking (list of 98+ reform rules on the chopping block)
Revocation of Certain Executive Orders Concerning Federal Regulation (EO13992) (cont.)

REVOKE TRUMP EOs:

• EO 13771 Reducing Regulation and Controlling Regulatory Costs (Jan. 30, 2017)
• EO 13777 Enforcing the Regulatory Reform Agenda (Feb. 24, 2017)
• EO 13875 Evaluating and Improving the Utility of Federal Advisory Committees (June 14, 2019)
• EO 13891 Promoting the Rule of Law Through Improved Agency Guidance Documents (Oct. 9, 2019)
• EO 13892 Promoting the Rule of Law Through Transparency and Fairness in Civil Administrative Enforcement and Adjudication (Oct. 9, 2019)
• EO 13893 Increasing Government Accountability for Administrative Actions by Reinvigorating Administrative PAYGO (Oct. 10, 2019)
Key Power Sector Regulations that Biden Admin. has Announced they will Revisit:

**CARBON DIOXIDE:**

**Ozone:**
- Findings of Failure To Submit a Clean Air Act Section 110 State Implementation Plan for Interstate Transport for the 2015 Ozone National Ambient Air Quality Standards (NAAQS), 84 Fed. Reg. 66612 (December 5, 2019)

**Mercury, Air Toxics:**
- Reclassification of Major Sources as Area Sources Under Section 112 of the Clean Air Act, 85 Fed. Reg. 73854 (November 19, 2020)
- Combustion Turbine RTR/MACT? (no announcement yet)

**Particulate Matter:**
- Review of the National Ambient Air Quality Standards for Particulate Matter, 85 Fed. Reg. 82684 (December 18, 2020)

POTENTIAL CONSTRAINING FACTOR – SCOTUS DACA decision, 6-3 Majority & limitations on policy shifts reduced agency deference
DEEPER DIVE: EPA Regulation of Carbon Dioxide from existing & new/modified Power Plants

Affordable Clean Energy (ACE) Status & Likely Fate:

- On January 19, D.C. Circuit Vacated & Remanded Clean Power Plan (CPP) Repeal & ACE Chevron, Step-1, replacement. American Lung Association v. EPA (link to decision here)
- DOJ has requested stay of the CPP Repeal reversal based on announced plans to replace ACE with new 111(d) rule (likely appeals to SCOTUS on 112 Exclusion & “Major Questions”).
- Key questions remain:
  1. Will EPA go “beyond the fence” when deriving state budgets and risk SCOTUS rebuke?
  2. Or, will EPA derive budgets based on coal AND GAS fleets and then integrate co-firing & trading (inside or outside the fence) as a compliance mechanism for inside-the-fence-derived budgets.
  3. Will Biden EPA integrate an international trading component and roll-in Section 115 as supplemental authority to couple with their 111(d) approach (risky as stand-alone but might combine as alternative)
DEEPER DIVE: Regulation of Methane (and maybe flaring?)

Methane Regulation of New & Existing Oil & Gas Operations:

- Biden EOs & EPA have announced that they will repeal and replace Trump EPA Methane Reforms (Issued on August 13, 2020 as Policy Amendments and Technical Amendments) to roll back Obama EPA “Methane Rule”).

- They have not signaled whether they will return to the 11/10/16 Information Collection Request (ICR) for existing upstream, midstream and even import/export sources (which was cancelled by Trump EPA on 3/2/17).
Clear & Present Danger
Section 102:

• (a) Hosting Leader’s Climate Summit (April 22, 2021 – Earth Day)

• (b)-(h) Reconvene the Major Economies Forum on Energy and Climate, beginning with the Leaders' Climate Summit, and Appoints and Directs the “Presidential Envoy for Climate” (John Kerry) to Curtail Fossil Energy Financing & Support “nature-based solutions” *(ending international financing of fossil fuel-based energy)*

Section 103-104:

• Climate Envoy to sit on National Security Council and elevates climate issues as a foreign policy and national security priority & reinstates Obama-era climate-related security memo

Section 201:

• Economy-wide/government-wide climate policy prioritization

• Seeks to achieve net-zero emissions for the United States by 2050

Section 202-203:

• Establishes the White House Office of Domestic Climate Policy

• Establishes the National Climate Task Force
Tackling Climate Crisis at Home and Abroad (EO14008) (cont.)

Section 205:
• Carbon-free Power Sector by 2035
• Calls for support of renewable industries and zero-emissions cars.
  • Task force will create plan to prioritize purchases of vehicles/electricity for federal fleets/buildings with stricter "Made in America" requirements.
  • President Biden couched those moves within his larger aims of 1 million new auto-sector jobs and a 100% carbon-free power sector by 2035.
  • Directs the Council on Environmental Quality and the Office of Management and Budget to identify steps the federal government can take to build out the country’s grid to speed up the deployment of renewable energy.

Section 208-209:
• “Pause” on new federal lands leasing (on and off-shore) for oil and gas (not coal) with “study” of tribal land oversight re: same
• “Review” existing leases and royalty rates for coal, oil, & gas
• Directing federal agencies not to subsidize fossil fuels (IRS guidance?)

Section 206-301:
• Procurement, land management, and promotion of renewables
• Rebuilding Infrastructure: Federal infrastructure investment shall reduce climate pollution and Federal permitting decisions shall consider effects of greenhouse gas emissions and climate change.
• Creates a Civilian Climate Corps Initiative to mobilize the next generation of conservation and resilience workers and to maximize the creation of accessible training opportunities and good jobs.
• Establishes a goal to conserve 30% of federal land and water by 2030.
Biden Energy Plan Timeline

- **July 14th, 2020**: Joe Biden unveils $2 trillion clean energy plan.

- **2025**:
  - Convert all 500,000 American school buses and set goal for all new ones to be zero-emission by 2030.
  - Install 500,000 electric vehicle charging stations.

- **2030**:
  - Install millions of solar panels and tens of thousands of wind turbines, invest in energy efficiency.
  - Net-zero emission standard for all new commercial buildings by 2030.

- **2035**:
  - Cut building sector CO₂ footprint by half by 2035.

- **2050**:
  - Economy-wide net-zero emissions target.

**Carbon-pollution free electricity target**

Includes hydropower, nuclear, coal and natural gas with CCUS in addition to wind, solar, storage.
Biden Energy Plan – Power Sector Overview

Transformational economy-wide approach to achieve “net-zero” CO₂ by 2050

• Would provide two trillion dollars to fund the ‘clean economy’ programs

• Utilities would need to eliminate carbon emissions by 2035 under a federal Energy Efficiency and Clean Electricity Standard
  • Doesn’t ban fossil fuel, but each utility would likely need to achieve a net-zero carbon footprint (potential offsets from nuclear, hydro and renewables, carbon capture)

• Recommends build out and repurposing of transmission to support dramatic expansion of renewable energy

• Dedicates resources to support economic transitions in power plant communities

• Proposes a significant commitment to addressing pollution in minority communities through the companion “Biden Environmental Justice Plan”
The CLEAN Future Act proposes significant investments in the U.S. electric vehicle industry and electrification of the residential and commercial heating sectors.

As a result, electricity demand in the CLEAN Future Act scenario is projected to grow from around 3,600 TWh in 2020 to 4,900 TWh by 2050, an increase of over 32% in three decades.
Clean Electricity Standard

FEASIBILITY

- To achieve the goals laid out in the CLEAN Future Act, the electric power sector will need to invest an additional $3.4 trillion between 2020 and 2050 to achieve the 100% CES by 2035.
  - $2 trillion will need to be invested in new power generating resources like wind, solar, and battery storage,
  - $1 trillion in new transmission projects and
  - $410 billion in CCS retrofits.
- To achieve the 100% CES by 2035, the U.S. power will need to add almost 72 GW of new solar capacity, 38 GW of new wind capacity, and 9 GW of new battery storage capacity every year.
- For context, in 2020, U.S. total installed capacity for solar, wind, and battery storage in the U.S. was 41 GW, 113 GW, and 2.2 GW, respectively.

Cumulative Investments by Category – 2020 to 2050

- Ref Case - Total: $1.39 trillion
- New Plants: $1.06 trillion
- CCS Retrofits: $0.41 trillion
- New Transmission: $0.53 trillion
- Clean Future Act - Total: $3.38 trillion
Clean Electricity Standard

COST TO CONSUMERS

Average Annual Residential Electricity Bill by Scenario

- To enable the $3.4 trillion-dollar investment to achieve the 100% CES by 2035 and support a decarbonized economy by 2050, the average annual residential U.S. electric bill will likely increase significantly.

- By 2035, when the electric power sector is required achieve the 100% CES, the average annual residential bill is forecasted to increase by $473 from 2020 levels, or 34%, to roughly $1,900 per household.

- By 2050, the average annual residential bill is projected to reach $2,000, compared to $1,400 in 2020, or $565 more per household, a 40% increase in three decades.
KEY STUDY: What is the Cost of Texas Continuing to Head Toward a “the Green New Deal”?  

|---|

<table>
<thead>
<tr>
<th>Capacity Type</th>
<th>2018</th>
<th>Current Policies</th>
<th>50 Percent Renewables</th>
<th>80 Percent Renewables</th>
<th>100 Percent Renewables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind Capacity (MW)</td>
<td>22,066</td>
<td>37,596</td>
<td>49,877</td>
<td>102,928</td>
<td>107,737</td>
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<tr>
<td>Solar Capacity (MW)</td>
<td>1,861</td>
<td>11,019</td>
<td>25,372</td>
<td>86,091</td>
<td>91,597</td>
</tr>
<tr>
<td>Battery Capacity (MW)</td>
<td>87</td>
<td>527</td>
<td>10,626</td>
<td>23,260</td>
<td>533,833</td>
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<tr>
<td>Nuclear Capacity (MW)</td>
<td>4,960</td>
<td>4,960</td>
<td>4,960</td>
<td>4,960</td>
<td>-</td>
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<tr>
<td>Gas Capacity (MW)</td>
<td>45,449</td>
<td>51,997</td>
<td>54,700</td>
<td>42,000</td>
<td>-</td>
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<tr>
<td>Coal Capacity (MW)</td>
<td>14,225</td>
<td>14,225</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Annual Cost ($ Billion)</td>
<td>13</td>
<td>19</td>
<td>33</td>
<td>61</td>
<td>120</td>
</tr>
<tr>
<td>Annual Cost ($/MWh)</td>
<td>36</td>
<td>44</td>
<td>73</td>
<td>138</td>
<td>270</td>
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GREEN NEW DEAL IN TEXAS = ALL PAIN, NO GAIN

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<td>73</td>
<td>138</td>
<td>270</td>
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</table>

KEY TAKE-AWAYS FROM THE STUDY:

- 50% wind/solar by 2030 will increase annual generation & transmission costs by 250% (increasing to 100% renewables by 2030 will increase those costs by 1,000%).

- That annual cost of $120 BILLION is equivalent to the ENTIRE TEXAS ANNUAL BUDGET.

- This increases the average TX family’s annual electricity bill by more than $3,200 by 2030.

- Yet, all of those costs will reduce global temperatures less than 0.097° Fahrenheit.

The Cautionary Tale of Winter Storm Uri in Texas

[Graph showing the relationship between Generation and Load (MW) from 2/6/2021 to 2/20/2021.]

**Demand High – Wind Low:** Margin disappears, prices soar, system disruption triggered.

**Demand Low – Wind High:** Gas & Coal pushed off grid due to negative pricing.

Forecast Demand

White space = Shortages

Source: Energy Information Administration Hourly Grid Monitor
For more information, visit lifepowered.org.
ESSENTIAL READING:

MYTH: “Fossil fuels caused the Texas blackouts.”

FACT: The vast majority of power that was needed to keep the Texas grid from experiencing a potential month-long blackout was provided by thermal power plants (those using natural gas, coal, and nuclear energy).

MYTH: ‘Renewables can’t be blamed. They performed even better than expected during the blackouts!’

FACT: Wind & solar performed about as well as you would expect during a winter storm - means they produced almost nothing when we needed power most.

MYTH: ‘Texas can prevent more blackouts by deploying more renewable energy.’

FACT: Adding more unreliable energy will only make our grid more unreliable.

MYTH: ‘Renewable energy is cheaper; that’s why we’re building so much of it.’

FACT: The vast economic fallout from the Texas power outages will become a poster child for how renewable energy imposes costs on consumers that are hidden until they manifest themselves when the system breaks down due to the lack of system reliability.

MYTH: ‘Manmade climate change caused the storm that blacked out Texas.’

FACT: The cold weather that hit much of the South felt extreme for all of us, but it is neither unprecedented nor manmade.
MYTH BUSTING: This Event Was NOT Just About Winterization – It Shows that Texas Has a Shortage of Dispatchable Capacity

*Texas would have still endured over 24 hours of outages even if all thermal remained online*

Source: Energy Information Administration Hourly Grid Monitor
For more information, visit lifepowered.org.
MYTH BUSTING: The Premature Retirement of Baseload Coal/Gas Over the Past Five Years WAS a Major Factor

- There would have been 80% fewer hours of outages if they were still around

Source: Energy Information Administration Hourly Grid Monitor
For more information, visit lifepowered.org.
MYTHBUSTING:
Both Renewables & Gas “Triggered” this Problem

<table>
<thead>
<tr>
<th>Installed Capacity</th>
<th>February 9-19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind</td>
<td>Wind Avg</td>
</tr>
<tr>
<td>28%</td>
<td>9%</td>
</tr>
<tr>
<td>Solar</td>
<td>Solar Avg</td>
</tr>
<tr>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>Gas</td>
<td>Gas Avg</td>
</tr>
<tr>
<td>49%</td>
<td>61%</td>
</tr>
<tr>
<td>Coal</td>
<td>Coal Avg</td>
</tr>
<tr>
<td>12%</td>
<td>19%</td>
</tr>
<tr>
<td>Nuclear</td>
<td>Nuclear Avg</td>
</tr>
<tr>
<td>4%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Wind/solar dropped to below 2% of total supply in heart of storm.
Coal/Nuclear component of total supply nearly doubled.

But the **CAUSE** Was Years in the Making as Reliability & Resilience Were Eroded by Market Distortion-Driven Retirements of Baseload

Source: Energy Information Administration Hourly Grid Monitor
For more information, visit lifepowered.org.
A PREVIEW OF SHOULDER MONTHS TO COME

Today’s Outlook

- There is enough power for current demand.

Last Updated: April 11, 2021 - 22:14

Source: ERCOT
For more information, visit lifepowered.org.

MILD WEATHER – STILL PROBLEMS: EMERGENCY CONDITIONS CAUSED BY LACK OF ADEQUATE BUFFER AS SOLAR DROPS OFF, DEMAND STAYS, & WIND LAGS
WHAT IF SOLAR HAD DROPPED OFF LIKE IT DID A WEEK LATER (NEXT SLIDE)?

HOTTER WEATHER – BREWING PROBLEMS: EMERGENCY CONDITIONS CAUSED BY LACK OF ADEQUATE BUFFER AS DEMAND INCREASES, WIND PLUMMETS, & SOLAR ARRIVAL BECOMES FAR TOO IMPORTANT TO MAINTAIN RELIABILITY
MISO Warning of System Stability Issues

These resource changes will significantly impact grid performance with complexity increasing sharply after 30% penetration levels.

- Operating Reliability (Dynamics): Power delivery from weak areas may need transmission technologies equipped with dynamic support capabilities.
- Operating Reliability (Steady State): Regional energy transfer increases in magnitude and variability.
- Energy Adequacy (Hourly): Existing infrastructure inadequate to access diverse resources.
- Resource Adequacy: Risk of losing load compresses and shifts into evening.
SPP interconnection new capacity listed by type by 2030

- Wind: 53%
- Solar: 38%
- Battery and Other Storage: 1%
- Steam Turbine: 1%
- Combustion Turbine: 2%
- Diesel/Gas: 2%
- Reciprocating Engine: 3%
- Combined Cycle: 1%

Source: Energy Ventures Analysis

2033 Future Planning Scenarios
- Accelerated Fleet Change: 30%
- Distributed and Emerging Tech: 4%
- Other: 8%
- DSM: 13%
- Wind: 29%
- Solar: 16%
- Battery Storage: 11%
- Gas: 25

Total 100.9 GW
642 Projects
59.4 GW
403

MISO & SPP – Future Generation Mix – *Pretty Scary*
### Consumer Protection

**GRID RELIABILITY**
*(so the public knows this will NEVER happen again)*

- **Emergency Alerts, Homeowner Backup & Rate Plans**
  - Emergency Alerts, Homeowner Backup & Rate Plans
  - Ban on restricting source of backup: HB 17 (Deshotel)
  - Ban on wholesale indexed products: HB 16 (Hernandez)
  - Power outage alert system: SB 3, Secs. 1, 2 (Schwertner)

- **Weatherization & Load Shed**
  - Weatherization & Load Shed
  - Electric Generation: SB 3, Secs. 7, 13, 16, 23, 24, 39
  - Load Shed Procedures: SB 3, Secs. 9, 10, 11, 16, 39

- **Resiliency**
  - Resiliency
  - Oil & Gas: SB 3, Secs. 5, 6, 7, 21, 22, 25, 38

- **Reliability**
  - Reliability
  - AS & Firming: SB 3, Secs. 14, 18, 35 (Schwertner)
  - EV Charging: SB 1202 (Hancock)

- **Market Refinement**
  - Market Refinement
  - Transmission: SB 3, Secs. 15, 16, 19, 35 (Schwertner)
  - ERCOT transmission reliability assessment: SB 1291 (Hancock)

- **EROCOT & PUC**
  - ERCOT: Annual independent audit of ERCOT.
  - PUC Chair must be Texas resident.
  - PUC Chair: SB 2 (Hancock)
  - ERCOT: SB 3, Secs. 13, 15, 16, 19 (Schwertner)
  - ERCOT: SB 2586 (Thierry)
  - Independent ERCOT board: SB 3, Sec. 18
  - Distributed: SB 3, Sec. 19 (Schwertner)
  - ERCOT transmission reliability assessment: SB 1281 (Hancock)
  - Dispatchable: SB 3, Sec. 18

- **Coops & REPs**
  - Coops & REPs
  - Financing of Uri electric utility costs. HB 4492 (Paddie)
  - Co-op securitization: SB 1580 (Hancock)

- **Gas Utilities**
  - Gas Utilities
  - Financing of Uri fuels costs. HB 1520 (Paddie)

- **Non-ERCOT**
  - Non-ERCOT
  - Financing of non-ERCOT(Uri) electric utility costs. HB 1510 (Metcalf)

### Accountability & Coordination

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- **RRC-PUC-TCEQ**
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  - PUC Chair must be Texas resident.
  - PUC Chair: SB 2 (Hancock)
  - ERCOT: SB 3, Secs. 13, 15, 16, 19 (Schwertner)
  - ERCOT: SB 2586 (Thierry)
  - Independent ERCOT board: SB 3, Sec. 18
  - Distributed: SB 3, Sec. 19 (Schwertner)
  - ERCOT transmission reliability assessment: SB 1281 (Hancock)
  - Dispatchable: SB 3, Sec. 18

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### Roadmap The Texas Legislative Response to the Power Outages

#### Weatherization & Market Reform

- **Weatherization & Load Shed**
  - Weatherization & Load Shed
  - Electric Generation: SB 3, Secs. 7, 13, 16, 23, 24, 39
  - Load Shed Procedures: SB 3, Secs. 9, 10, 11, 16, 39

- **Resiliency**
  - Resiliency
  - Oil & Gas: SB 3, Secs. 5, 6, 7, 21, 22, 25, 38

- **Reliability**
  - Reliability
  - AS & Firming: SB 3, Secs. 14, 18, 35 (Schwertner)
  - EV Charging: SB 1202 (Hancock)

- **Market Refinement**
  - Market Refinement
  - Transmission: SB 3, Secs. 15, 16, 19, 35 (Schwertner)
  - ERCOT transmission reliability assessment: SB 1291 (Hancock)

- **EROCOT & PUC**
  - ERCOT & PUC
  - ERCOT: Annual independent audit of ERCOT.
  - PUC Chair must be Texas resident.
  - PUC Chair: SB 2 (Hancock)
  - ERCOT: SB 3, Secs. 13, 15, 16, 19 (Schwertner)
  - ERCOT: SB 2586 (Thierry)
  - Independent ERCOT board: SB 3, Sec. 18
  - Distributed: SB 3, Sec. 19 (Schwertner)
  - ERCOT transmission reliability assessment: SB 1281 (Hancock)
  - Dispatchable: SB 3, Sec. 18

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### Financials

- **Coops & REPs**
  - Coops & REPs
  - Financing of Uri electric utility costs. HB 4492 (Paddie)
  - Co-op securitization: SB 1580 (Hancock)

- **Gas Utilities**
  - Gas Utilities
  - Financing of Uri fuels costs. HB 1520 (Paddie)

- **Non-ERCOT**
  - Non-ERCOT
  - Financing of non-ERCOT(Uri) electric utility costs. HB 1510 (Metcalf)
Streamline incentives within the ERCOT market to foster the development and maintenance of adequate and reliable sources of power, like natural gas, coal, and nuclear power. The PUC has the ability to redesign segments of the market to incentivize and maintain the reliable electric generating plants our state needs. Those incentives must be directed toward the types of electric generators we need for reliability purposes. The goal of this strategy is to ensure that Texas has additional and more reliable power generation capacity.

Allocate reliability costs to generation resources that cannot guarantee their own availability, such as wind or solar power. Electric generators are expected to provide enough power to meet the needs of all Texans. When they fail to do so, those generators should shoulder the costs of that failure. Failing to do so creates an uneven playing field between non-renewable and renewable energy generators and creates uncertainty of available generation in ERCOT. To maintain sufficient power generation—especially during times of high demand—we must ensure that all power generators can provide a minimum amount of power at any given time.
• Instruct ERCOT to establish a maintenance schedule for natural gas, coal, nuclear, and other non-renewable electricity generators to ensure that there is always an adequate supply of power on the grid to maintain reliable electric service for all Texans. Regular maintenance of our natural gas, coal, and nuclear plants must be strategically scheduled to prevent too many generation plants from being offline at the same time. This will help prevent an artificial shortage of power.

• Order ERCOT to accelerate the development of transmission projects that increase connectivity between existing or new dispatchable generation plants and areas of need. Dispatchable generation, such as natural gas, coal, and nuclear power plants, are essential for the reliability and stability of the electric grid because they can be scheduled to provide power to the grid at any time. We must ensure that, at any point in time, ERCOT is utilizing non-renewable electricity in sufficient amounts to maintain reliable power throughout our state.
**THE ENERGY BAN BAN (Texas SB 13): Pushing Back on Fossil Fuel Divestment**

**TEXAS: “You Ban Us & We’ll Ban You”**

- Prohibits contracts & investments with companies boycotting fossil fuels.
- Rationale: State should not fund or facilitate companies that deploy agendas that work against the state’s values and economic lifeline.
- Modeled after laws passed to push back on anti-Israel “BDS” movement.
- Directly impacts nearly $300 billion under management in state-supervised public pensions + billions in state accounts and contracts.
- Preserves “prudent investor” standard & does NOT prohibit investment in/by funds with boycotting companies – just ensures that returns are prioritized over agendas.
- Creates a model for energy-producing states to follow so they can band together to counter virtue-signaling in corporate America.

| **Texas State Pensions:** ~$300 billion |
| **Texas Bank Accounts:** >$100 billion |
| **Texas Contracts:** Tens of Billions /yr |

**MAJOR Purchasing Power Leverage**
THE ENERGY BAN BAN (Texas SB 13): (Continued)

How the Energy Ban Ban Legislation Works:

1. State Comptroller evaluates public filings (and information submittals) to identify companies that trigger the “boycott” definition.

2. State gives notice to companies of their status as a listed companies (subject to divestment by state) due to their anti-fossil fuel stance.

3. Offers the company the opportunity to clarify/change its activities.

4. Company must cease boycotting activity to avoid state divestment.

Texas State Pensions: ~$300 billion

Texas Bank Accounts: >$100 billion

Texas Contracts: Tens of Billions /yr

MAJOR Purchasing Power Leverage
QUESTIONS?

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FEDERAL ENERGY UPDATE:
The Good, The Bad, & the Ugly

75TH ANNIVERSARY
ANNUAL MEETING
JULY 10-14, 2021
NASHVILLE, TENNESSEE