2023 New Mexico State Energy Security Plan

New Mexico Energy, Minerals, and Natural Resources Department (EMNRD)
Energy Conservation and Management Division (ECMD)

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Energy, Minerals and Natural Resources Department

June 2023

Introductions and SESP Development Process

State Energy Profile and Security Assessment

Energy Emergency Response Process

Risk Mitigation and Preparedness

Introduction: Energy, Minerals, and Natural Resources Department Energy Conservation and Management Division

Jacqueline Waite

Bureau Chief, Energy Conservation and Management Division

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Role of ECMD / New Mexico State Energy Office

- **Responsibilities as condition of State Energy Program funding through the U.S. Department of Energy**:
  - Monitor energy sectors across the state
  - Promote and implement energy security measures
  - Maintain and continually update the New Mexico **State Energy Security Plan (SESP)**
  - Serve as the primary agency for coordinating communications during an energy emergency per ESF #12 (Energy Annex of the New Mexico All-Hazards Emergency Operations Plan)

- **Efforts of ECMD in FY23**:
  - Contracted with Hagerty Consulting, Inc. for 2023 SESP update with extensive stakeholder engagement
  - Executed Regional Energy Security Tabletop Exercise and Workshop **May 2023**
  - Submitted application to U.S. Department of Energy for funding under **IIJA Section 40101(d)** to support implementation of electric grid resilience measures targeting areas with chronic outages and vulnerabilities
    - $7.2 million in first year for electric grid hardening and system upgrades to support resilience
    - 60% set-aside for "small utilities"
    - Request for applications expected Summer 2023

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New Mexico's Renewable Energy Transition

- Governor Lujan Grisham signed the **Energy Transition Act** (ETA) into law in March 2019 injecting new urgency into New Mexico's renewable energy transition.
- The ETA sets a **statewide renewable energy standard** of 50 percent by 2030 for New Mexico investor-owned utilities and rural electric cooperatives and a goal of 80 percent by 2040, in addition to setting **zero-carbon resources standards** for investor-owned utilities by 2045 and rural electric cooperatives by 2050.
- The law transitions New Mexico away from coal and toward clean energy and provides tens of millions of dollars of economic and workforce support for communities impacted by coal plant closures, as well as the development of renewable replacement power in San Juan County.
- **An objective of the SESP update is to evaluate energy security needs as the state undertakes a renewable energy transition.**

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Introduction: Hagerty Consulting, Inc.

Katie Toskey

Project Manager

Hagerty Consulting, Inc.

Emergency management and homeland security consulting firm with nearly 20 years experience supporting all levels of government and the private sector. Assists clients, like the State of New Mexico, prepare for, respond to, and recover from disasters and other emergencies.

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New Mexico State Energy Security

- The energy sector is uniquely critical as **all other critical infrastructure sectors depend on power or fuel to operate**.
- The state's energy infrastructure and delivery systems are vulnerable to a variety of threats and hazards, including **severe weather** (exacerbated by climate change), **cyberattacks, deliberate physical attacks, and supply chain and asset health issues**.
- **Public-private partnership is paramount.** Most of the state's critical infrastructure is owned and operated by private companies. Both the government and private sector have a **mutual incentive** to reduce the risk of disruptions to critical infrastructure.
- It is the **responsibility of state and local officials to work with energy providers, across government agencies, and with relevant stakeholders** to reduce the risk, vulnerabilities, and consequences of an energy disruption or emergency and provide for rapid recovery.

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New Criteria for State Energy Security Plans

- **State Energy Security Plans (SESPs) are an essential part of energy security planning**. An SESP describes the state's energy landscape, people, processes, as well as the state's strategy to build energy resilience.
- The updated SESP **fulfills all requirements identified in Section 40108 of the IIJA**, including:
  - Addressment of all energy sources and regulated and unregulated energy providers;
  - Provision of a state energy profile, including an assessment of energy production, transmission, distribution, and end-use;
  - Addressment of potential hazards to each energy sector or system, including physical threats and vulnerabilities and cybersecurity threats and vulnerabilities;
  - Provision of a risk assessment of energy infrastructure and cross-sector independencies;
  - A risk mitigation approach to enhance reliability and end-use resilience; and
  - Addressment of multi-state and regional coordination, planning, and response and coordination with Tribal governments with respect to planning and response.

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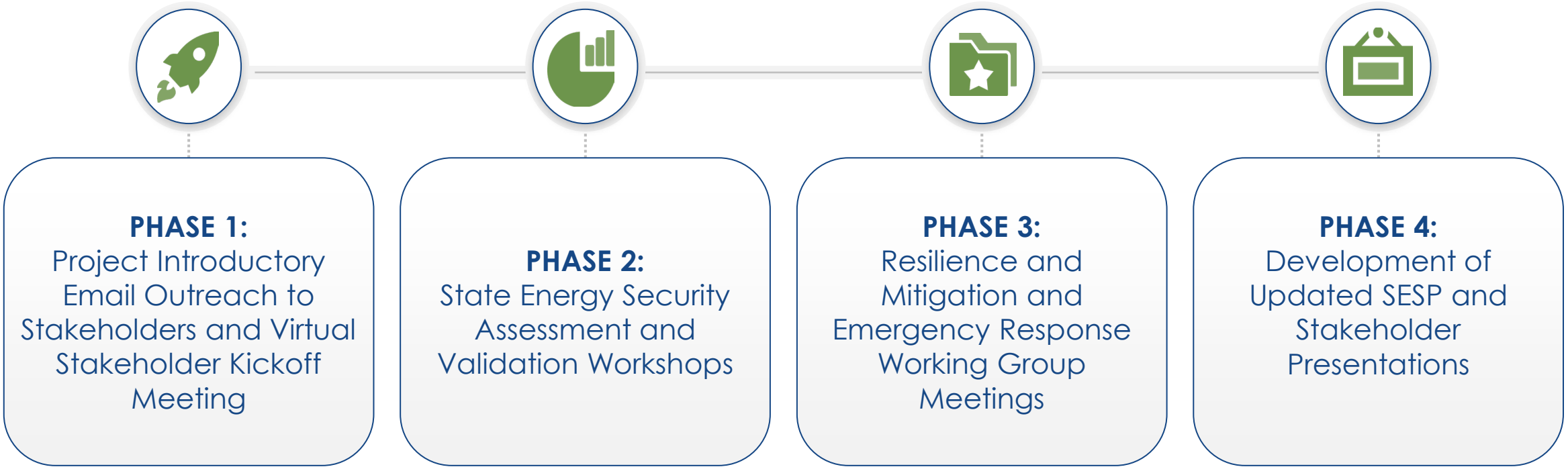
2023 SESP Update



PHASE 1:
Project Introductory Email Outreach to Stakeholders and Virtual Stakeholder Kickoff Meeting

PHASE 2:
State Energy Security Assessment and Validation Workshops

PHASE 3:
Resilience and Mitigation and Emergency Response Working Group Meetings

PHASE 4:
Development of Updated SESP and Stakeholder Presentations

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2023 SESP Development by the Numbers

- Engaged with more than **300 public and private stakeholders across the state and region** as a priority of the project.
- Hosted **11 activities** to inform key aspects of the Plan and provide real-time updates on its development:
  - Virtual Stakeholder Kickoff Meeting (November 2022)
  - Three virtual State Energy Security Validation Workshops for separate audiences of electricity, oil and gas, and government stakeholders to address threats, vulnerabilities, critical infrastructure, and cross-sector interdependencies (February 2023)
  - Two virtual Emergency Response Working Group Meetings for local, state, federal, and Tribal emergency management to discuss energy emergency management preparedness (April 2023)
  - Two virtual Resilience and Mitigation Working Group Meetings for energy owners and operators to identify a risk mitigation approach (April 2023)
  - In-person Regional Energy Security Tabletop Exercise (May 2023)
  - Two virtual Final SESP Presentations for government and external affairs partners (June 2023)

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Introductions and SESP Development Process

State Energy Profile and Security Assessment

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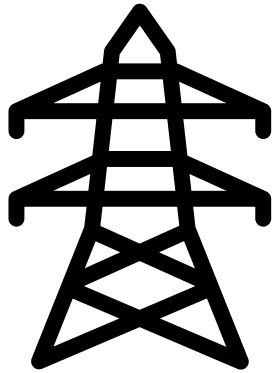
Electricity Sector Profile

Electricity

- New Mexico is the **39th largest** electricity producer in the country.
- New Mexico is a **net electricity exporter**. The state's net electricity generation in 2021 was 35,192,365 MWh. Electricity sales totaled 25,393,743 MWh the same year, resulting in a surplus of 9,798,622 MWh.
- The electricity sector is comprised of three segments: **generation facilities, transmission facilities**, and **distribution assets**.
  - New Mexico hosts **125 power plants**, and the five largest generating units include: Four Corners, Hobbs Generating Stations, Luna Energy Facility, Sagamore Wind, and San Juan.
  - Electricity providers include **three investor-owned electric utilities, seven municipal utilities, three tribal utilities,** and **sixteen electric cooperatives**.



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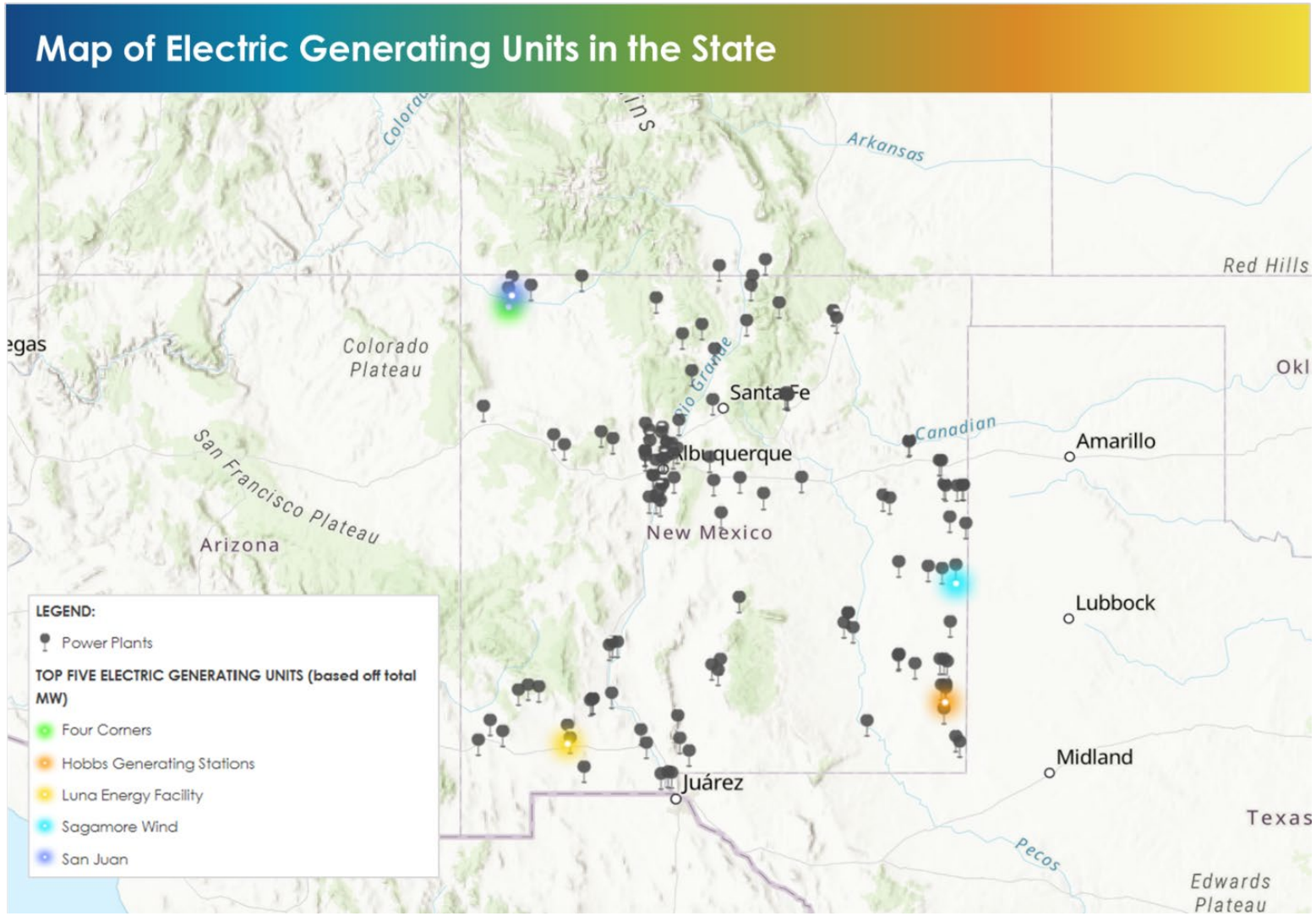
Generating Units



Data Source: U.S. Energy Information Administration

Largest Generators by Capacity:

- Four Corners (Arizona Public Service Company) (31%)
- San Juan (Public Service Company of New Mexico (18%) (no longer operational as of September 2022)
- Hobbs Generating Station (Leah Power Partners) (13%)
- Luna Energy Facility (Public Service Company of New Mexico) (12%)
- Sagamore Wind (Southwestern Public Service Company) (8%)

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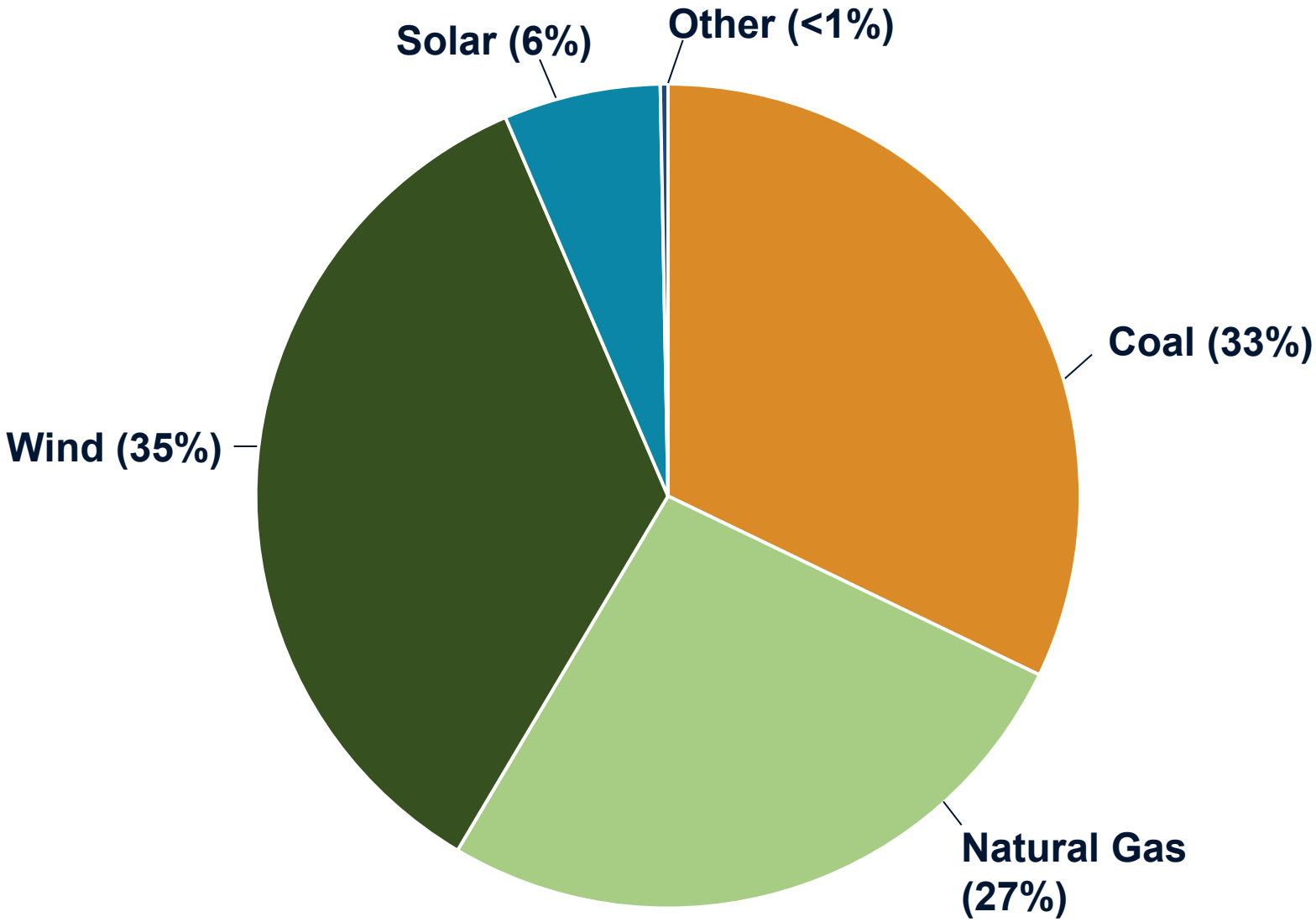
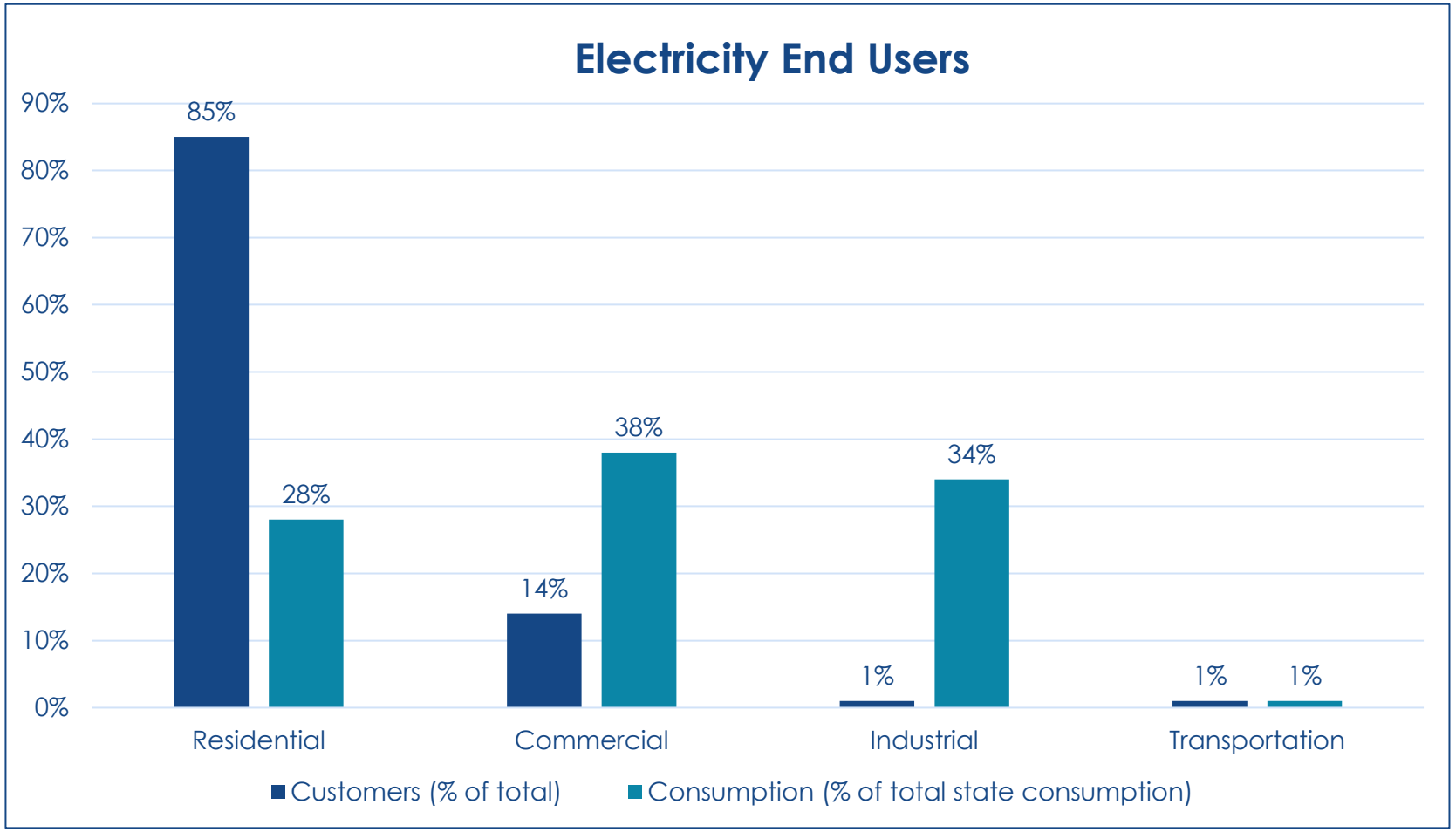
Electricity Generation by Fuel Type



Data Source: U.S. Energy Information Administration

Electricity Consumption



Data Source: U.S. Energy Information Administration

New Mexico's electricity sector customers:

- Residential (85%)
- Commercial (15%)
- Industrial (>1%)
- Transportation (>1%)

Customer consumption:

- Commercial (38%)
- Industrial (34%)
- Residential (28%)
- Transportation (>1%)

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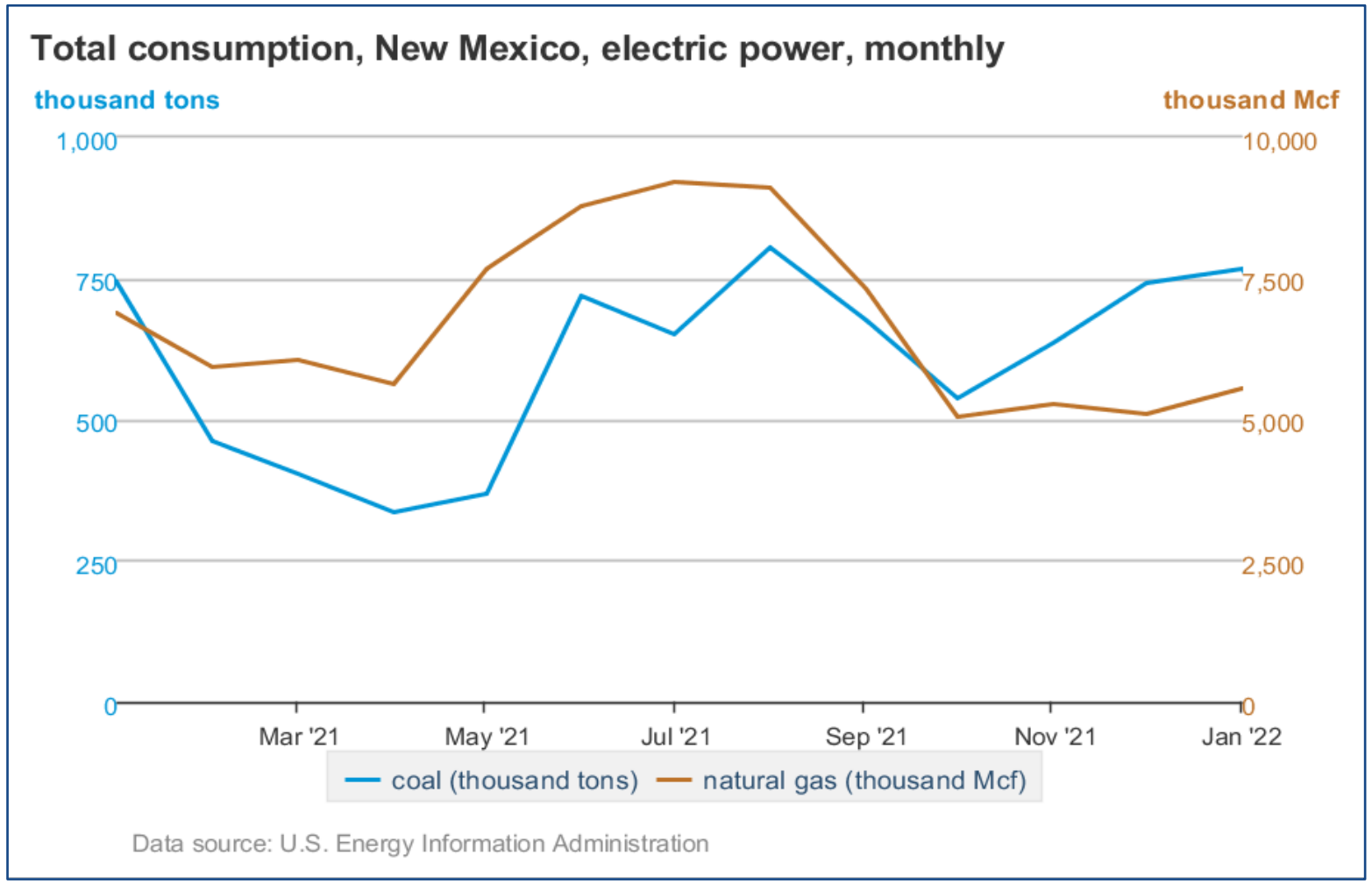
Electricity Demand



Consumption Trends:

- Customers in New Mexico consume more electricity in **the winter and summer** compared to the spring and autumn.
- Peak electricity usage occurs in June, July, and August when temperatures are higher, and households are more likely to run air conditioning.
- A similar spike occurs in December and January, colder and darker months, when households require greater heating and lighting.

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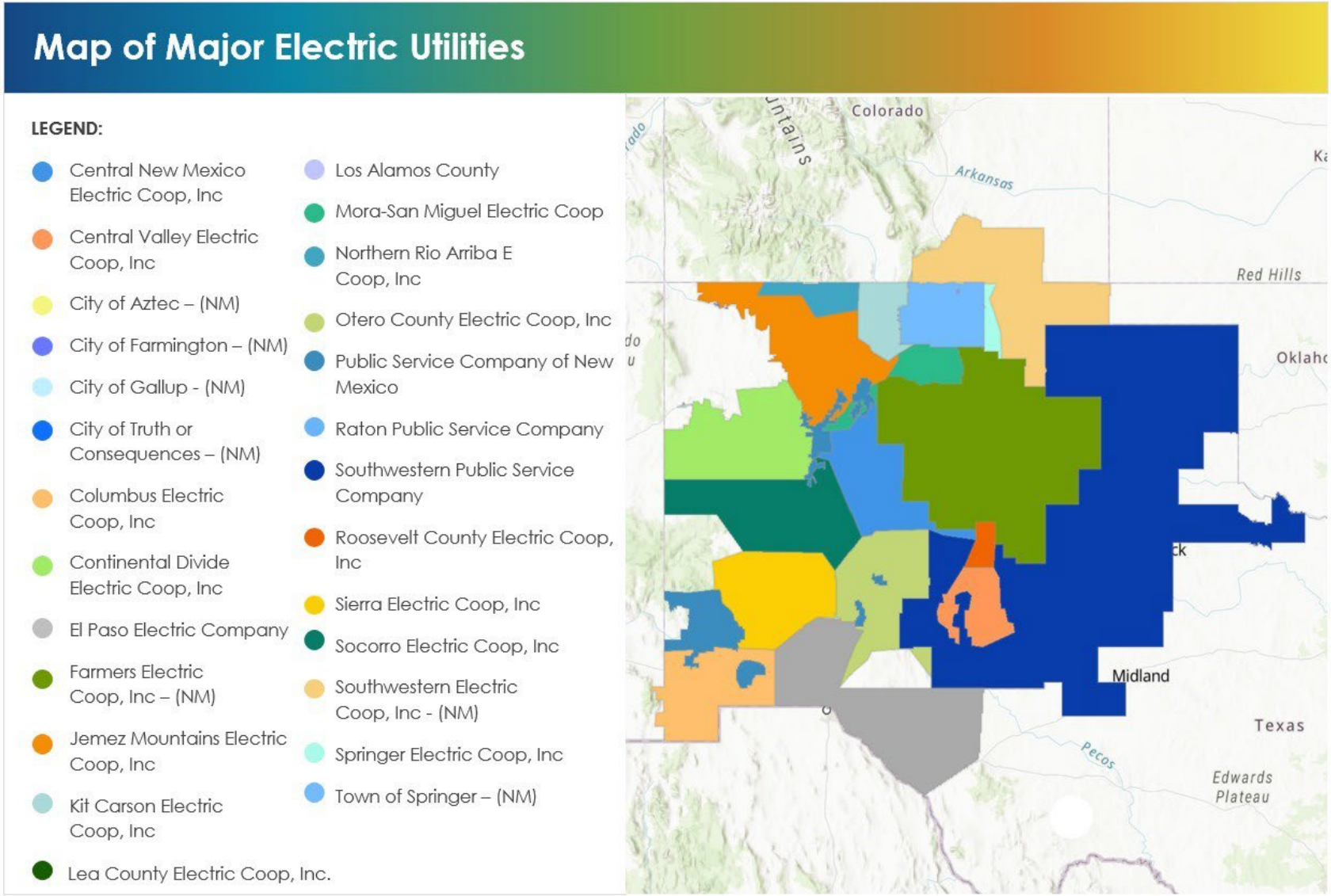
Electricity Providers

Map of Major Electric Utilities

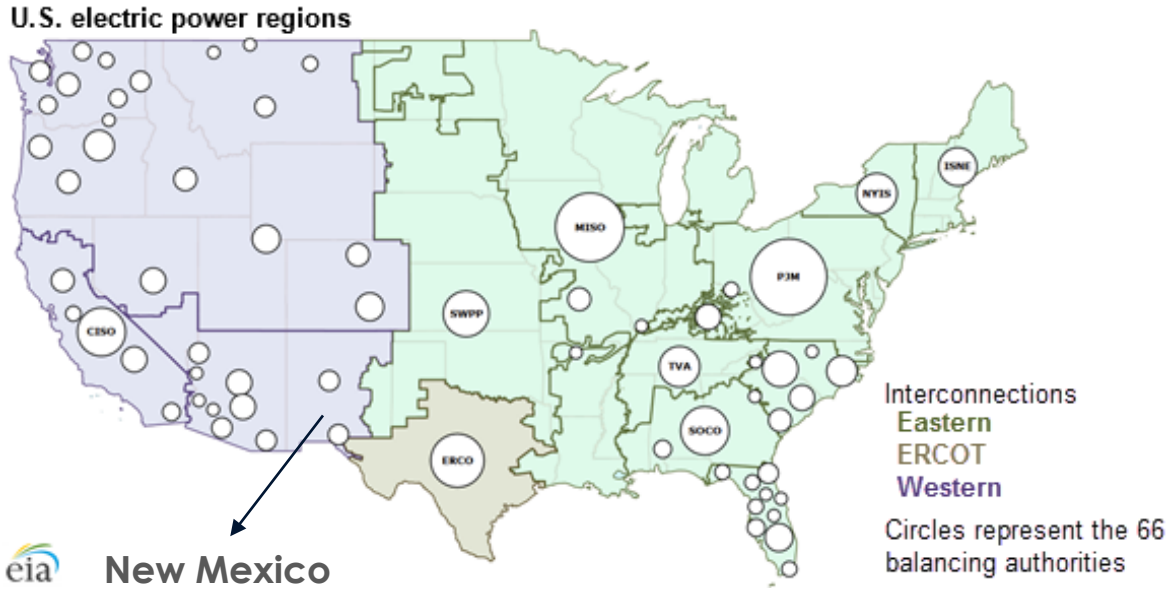


10 major utilities by customer base:

- Public Service Company of New Mexico (50.46%)
- Southwestern Public Service Company (11.69%)
- El Paso Electric Company (9.7%)
- City of Farmington (4.2%)
- Jemez Mountains Electric Cooperative (2.93%)
- Kit Carson Electric Cooperative (2.8%)
- Continental Divide Electric Cooperative, Inc (2.21%)
- Otero County Electric Cooperative, Inc (1.87%)
- Central New Mexico Electric Cooperative, Inc (1.73%)
- Central Valley Electric Cooperative, Inc (1.42%)

Balancing Authorities

- Nationwide, the lower 48 states are supported by three primary interconnections: Eastern Interconnection, Western Interconnection, and Electric Reliability Council of Texas.
  - New Mexico is part of both the **Eastern Interconnection** and the **Western Interconnection** of the North American power transmission grid.
    - In the **Western Interconnection**, Public Service Company of New Mexico serves as the balancing authority with further balancing support from El Paso Electric Company and Tri-State Generation.
    - In the **Eastern Interconnection**, Southwestern Public Service Company serves as the balancing authority with further balancing support from Western Farmers Electric Cooperative.



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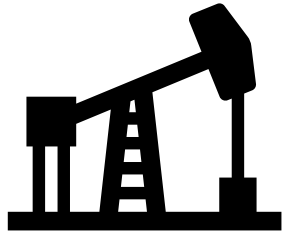
Liquid Fuels Sector Profile

Liquid Fuels

- The Permian Basin is one of the most abundant oil sources in the world and **the petroleum market in New Mexico is one of the largest in the United States**.
- The petroleum sector is comprised of **upstream** (exploration and production), **midstream** (processing and wholesale distribution), and **downstream** (retail distribution) segments.
- As of **2018**, New Mexico had:
  - 2,055 miles of crude oil pipelines
  - 2,164 miles of refined product pipelines
  - 1 petroleum refinery (HollyFrontier, Artesia)
  - 1 biodiesel plant (HollyFrontier Navajo Refinery, Artesia, online August 2022)
- The petroleum sector's **upstream infrastructure is concentrated in the Permian Basin in southeastern New Mexico with a portion in the San Juan Basin in northeastern New Mexico.**



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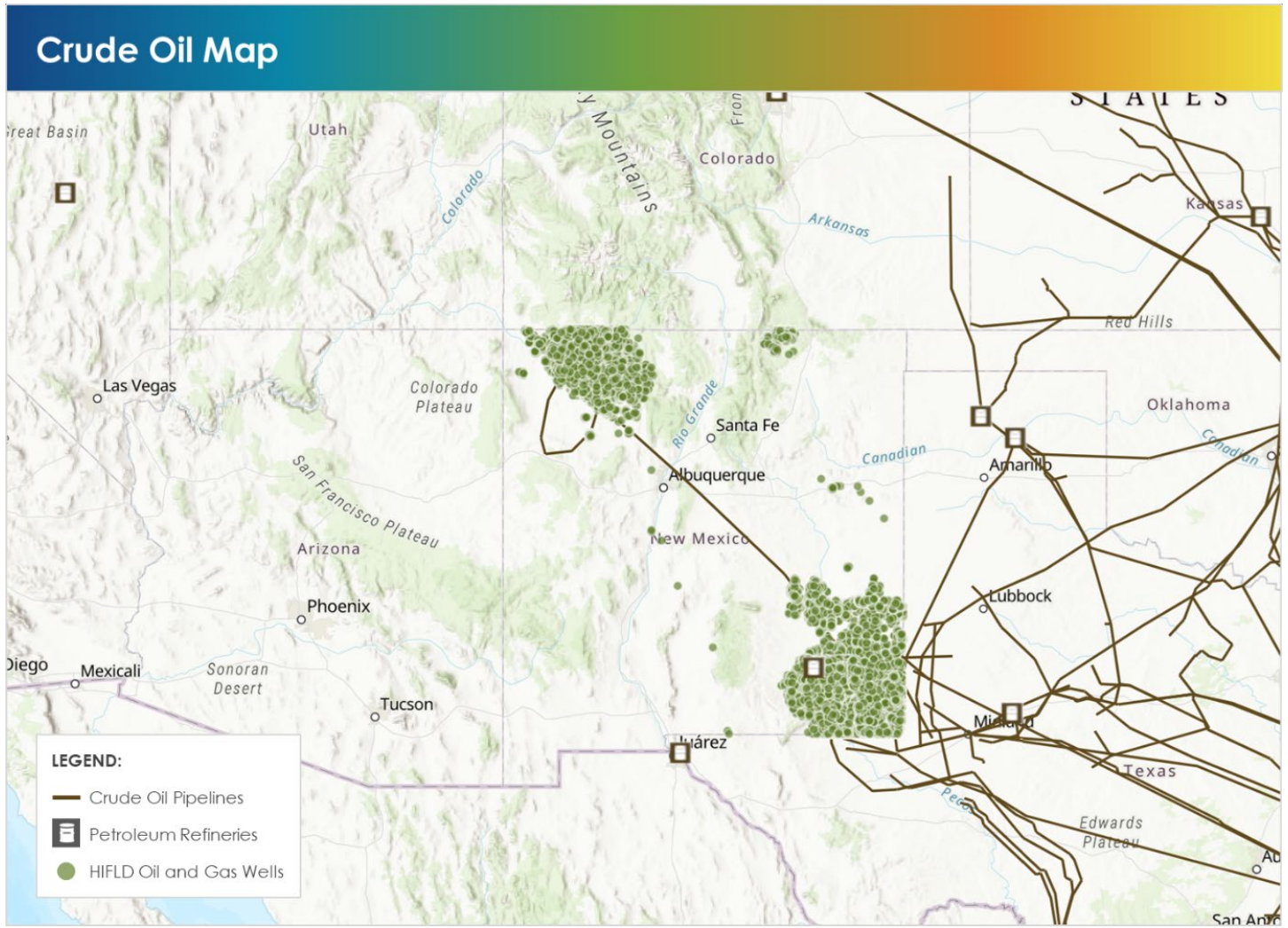
Crude Oil Production



Data Source: U.S. Energy Information Administration, EIA Energy Atlas, 2023

Crude Oil in New Mexico:

- Crude oil is refined into petroleum products, such as **gasoline, diesel fuel, heating oil, and jet fuel**, which are then used for energy content.
- New Mexico produced more than 574 million barrels of crude oil in 2022, 13% of all crude oil in the country, establishing it as the **second largest** crude oil producing state.

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Natural Gas Sector Profile

Natural Gas

- New Mexico **represents 6%** of all natural gas reserves in the nation and is among the **top ten state producers** of natural gas.
- The natural gas sector is comprised of three segments: **production and processing**, **transmission and storage**, and **distribution**.
- As of **2018**, New Mexico had:
  - 6,440 miles of natural gas transmission pipelines
  - 14,347 miles of natural gas distribution pipelines.
  - 24 natural gas processing facilities
- Natural gas production wells are numerous and widespread, largely through the San Juan Basin and Permian Basin.
- **Pipelines run through the Navajo Nation, the Ute Mountain Reservation, the Pueblo of Laguna, and the Pueblo of Acoma** requiring coordination by multiple jurisdictions.

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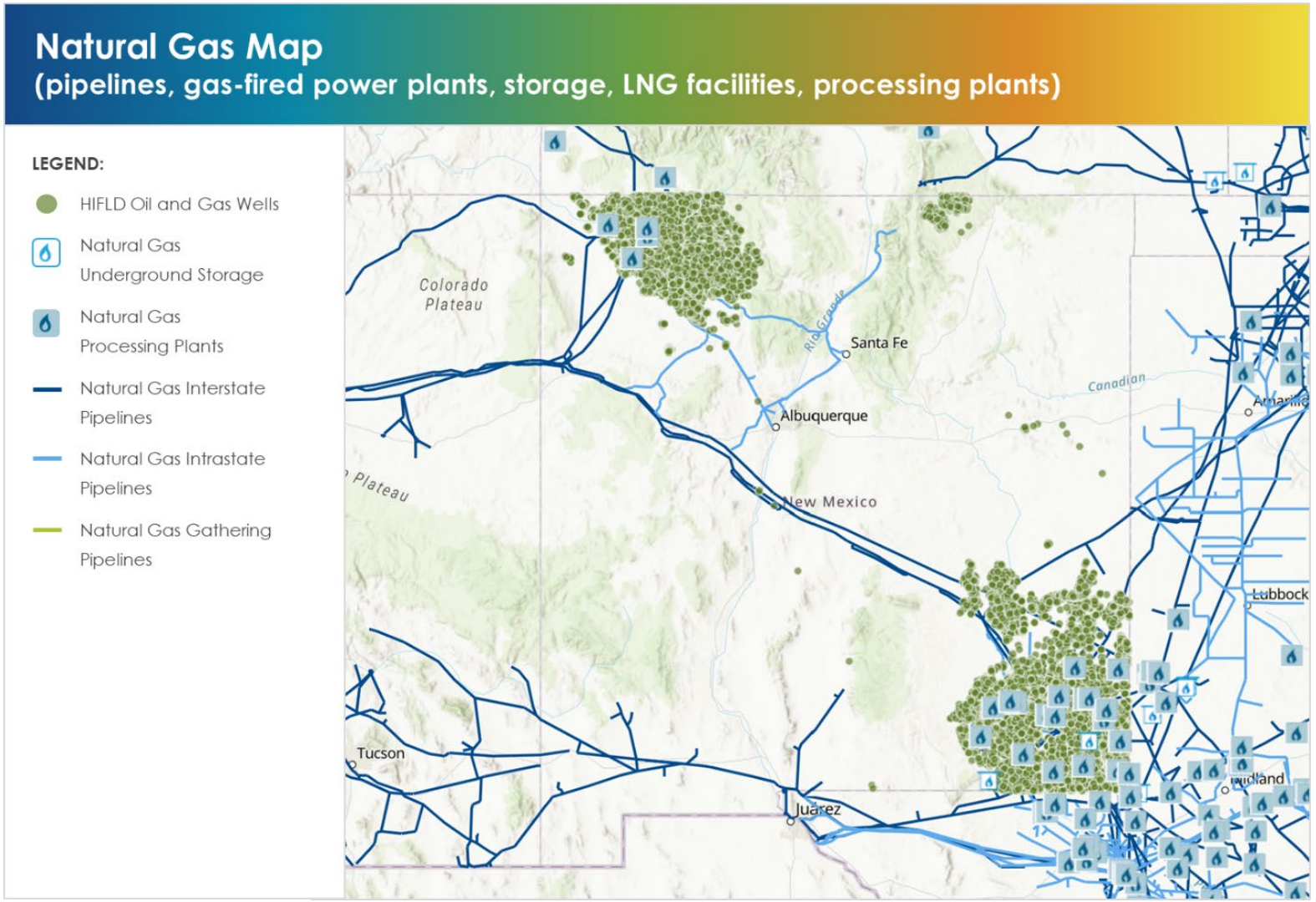
Natural Gas Infrastructure



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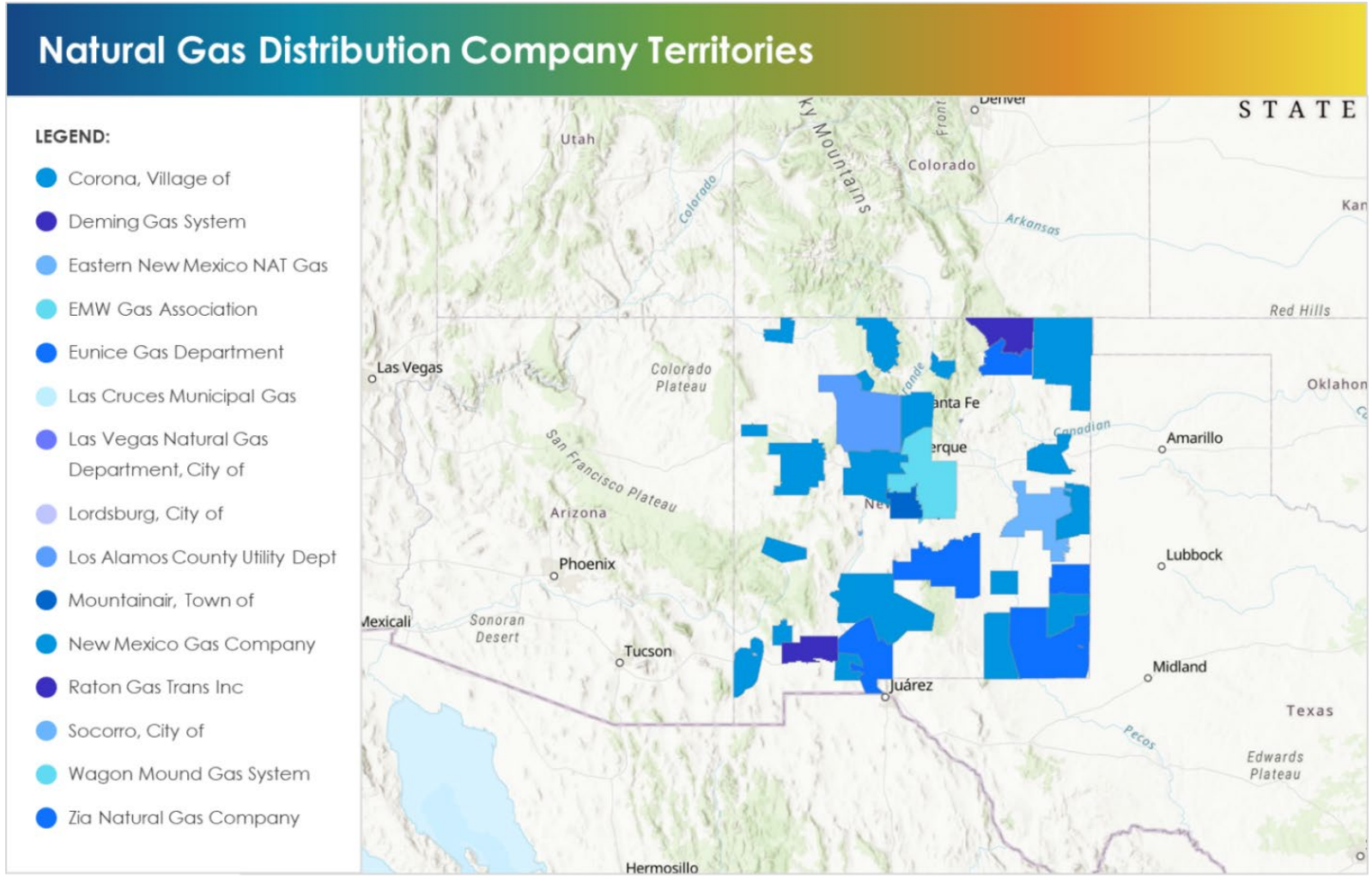
Natural Gas Distribution



Data Source: U.S. Energy Information Administration, EIA Energy Atlas, 2021.

Largest natural gas distribution companies:

- New Mexico Gas Company
- El Paso Natural Gas Company LLC
- Markwest New Mexico
- Transwestern Pipeline Company
- Las Cruces Municipal Gas
- Zia Natural Gas
- City of Los Alamos
- Las Vegas Natural Gas Department
- EMW Gas Association
- Deming Gas System

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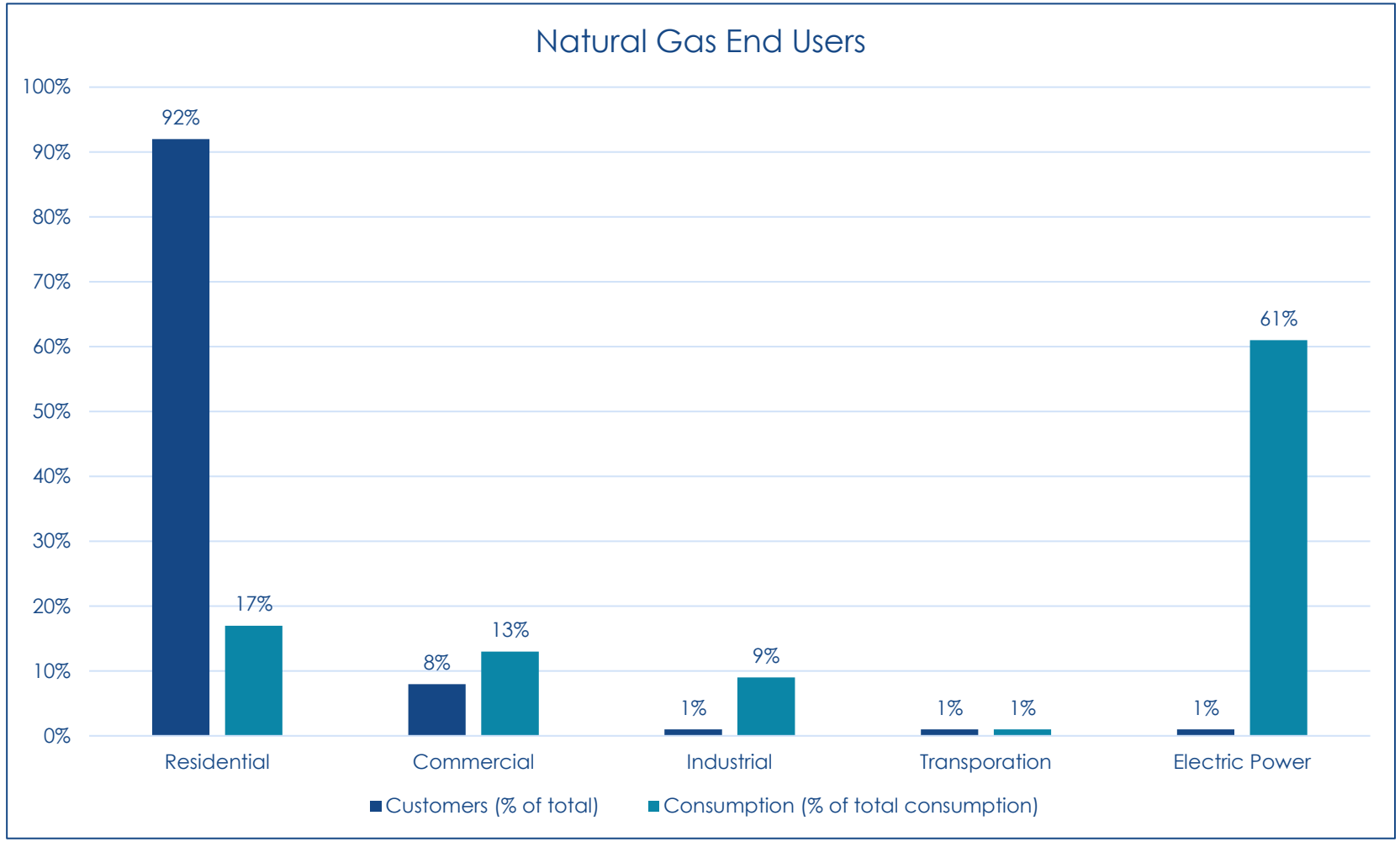
Natural Gas Consumption



Data Source: U.S. Energy Information Administration

New Mexico's natural gas sector customers:

- Residential (92%)
- Commercial (8%)
- Industrial (<1%)
- Transportation (<1%)
- Electric Power (<1%)

Customer consumption:

- Electric Power (61%)
- Residential (17%)
- Commercial (13%)
- Industrial (9%)
- Transportation (<1%)

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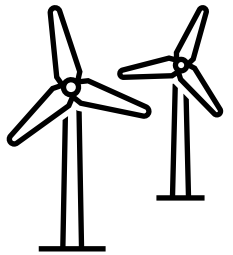
Renewable Energy Profile

Renewable Energy

- In 2021, for the first time in state history, **renewable energy resources provided the largest share of New Mexico's in-state electricity generation**.
- The renewable energy market in New Mexico has continued to grow and supplied **41% of the state's total generation in 2022**.
  - Wind power accounted for 35% of the state's electricity generation in 2022, solar accounted for 6%, and coal and natural gas generated 33% and 27%, respectively.
- The amount of total electricity generation from renewable resources in the state was **more than five times greater in 2022 than in 2015**.
- New Mexico:
  - Ranks third in the nation in solar energy potential (after Arizona and Nevada).
  - Among the top states for wind energy with significant production taking place on the high plains in the eastern half of the state.
  - Ranks sixth in the nation for geothermal energy potential.



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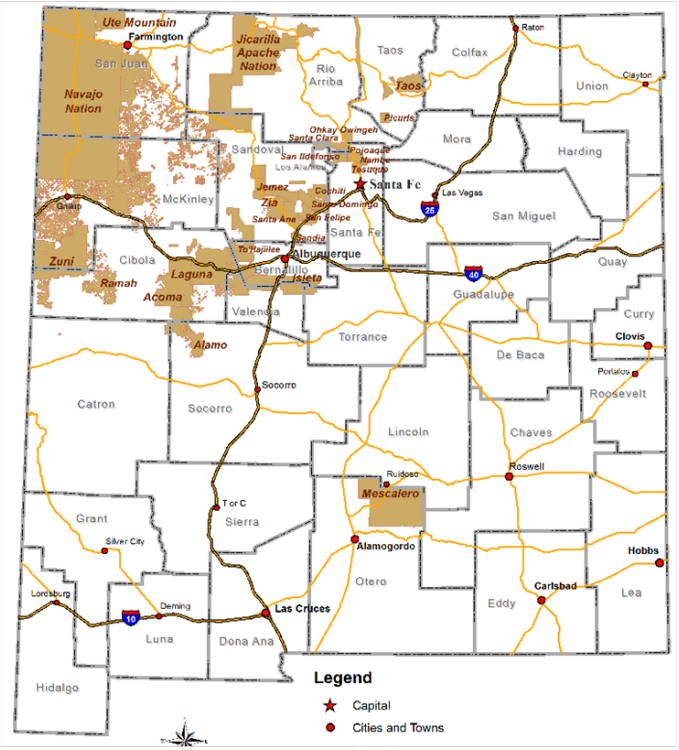
Energy on Tribal Lands

- New Mexico is home to **23 federally recognized Tribal governments** and has the **second largest** Tribal population in the nation.
- Combined, the 23 tribal governments represent **more than 10%** of New Mexico's land area.
  - Tribal communities represent areas rich in energy resources:
    - The state's two largest Tribal reservations are **Jicarilla Apache Nation** and **Navajo Nation**.
    - **Jicarilla Apache Nation** is located on the east side of the San Juan Basin. The Tribe is the second-largest mineral rights owner in the Basin after the federal government. The Tribe's reservation boundaries fall within several oil and gas fields.
    - **Navajo Nation** spans portions of New Mexico, Arizona, and Utah and owns and operates a crude oil pipeline between New Mexico and Utah as well as the Navajo Mine located in the San Juan Basin. Four Corners Generating Station, the largest power plant in New Mexico, sources it's coal from the Navajo Mine.

Native Nation Lands – New Mexico



NATIVE LANDS INCLUDE:

- Acoma Pueblo
- Cochiti Pueblo
- Fort Sill Apache Reservation
- Pueblo of Isleta
- Jemez Pueblo
- Jicarilla Apache Nation
- Santo Domingo Pueblo
- Laguna Pueblo
- Mescalero Apache Reservation
- Nambe Pueblo
- Navajo Nation
- Ohkay Owingeh Pueblo
- Picuris Pueblo
- Pojoaque Pueblo
- Sandia Pueblo
- San Felipe Pueblo
- San Ildefonso Pueblo
- Santa Ana Pueblo
- Santa Clara Pueblo
- Taos Pueblo
- Tortugas Pueblo
- Ute Mountain Ute Indian Reservation
- Zia Pueblo
- Zuni Indian Reservation

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Questions

Threats and Vulnerabilities

Electricity Sector Threats and Vulnerabilities

- Within New Mexico, the U.S. Department of Energy has identified the following threats to New Mexico's electricity sector:
  - **Natural Hazards (wildfires, winter storms and freezes, extreme heat, flash floods)**
  - **Physical Threats**
  - **Cybersecurity Threats**
- In 2018, the average New Mexico electric customer experienced **1.1 service interruptions that lasted an average of 2.3 hours**.
- Electric outages affected **91,741 customers** on average.
- The greatest number of outages occurred in **July** (leading month for outages nationwide).
- **Long lead times** exist to replace electric infrastructure, transformers, for example. Supply chain issues may be exacerbated by recent investments in the energy sector that create competition for resources, particularly related to requirements in Build America Buy America.

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Liquid Fuels Sector Threats and Vulnerabilities

- Within New Mexico, the U.S. Department of Energy has identified the following threats to New Mexico's liquid fuels sector:
  - **Outside Forces** when transported by truck (second leading cause nationwide)
  - **Materials Failures** when transported by rail (fifth leading cause nationwide)
  - **Equipment Failures** when transported by crude oil pipeline (eighth leading cause nationwide)
  - **Corrosion** when transported by product pipelines (second leading cause nationwide)
  - **Disruptions in Other States Impacting Supply**
  - **Cybersecurity Attacks**
  - **Severe Weather**
- 45% of New Mexico's petroleum pipeline systems were **constructed prior to 1970 or in an unknown year**.

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Natural Gas Sector Threats and Vulnerabilities

- Within New Mexico, the U.S. Department of Energy has identified the following threats to New Mexico's natural gas sector:
  - **Corrosion** when transported by transmission pipelines (fourth leading cause nationwide)
  - **Outside Forces** when transported by distribution pipelines (leading cause nationwide)
  - **Asset Age**
  - **Cybersecurity Attacks**
  - **Severe Weather**
- 69% of New Mexico's 6,440-mile transmission system and 42% of New Mexico's 14,347-mile distribution system **were constructed prior to 1970 or in an unknown year**.
- Top events affecting natural gas transmission include: **1) Corrosion ($3.4M per year); 2) Outside Force ($156K per year); and Equipment Failure ($73K per year)**
- Top events affecting natural gas distribution include: **1) Outside Force ($1.02M per year); 2) Material/Weld Failure ($299K per year); and Incorrect Operation ($44M per year)**

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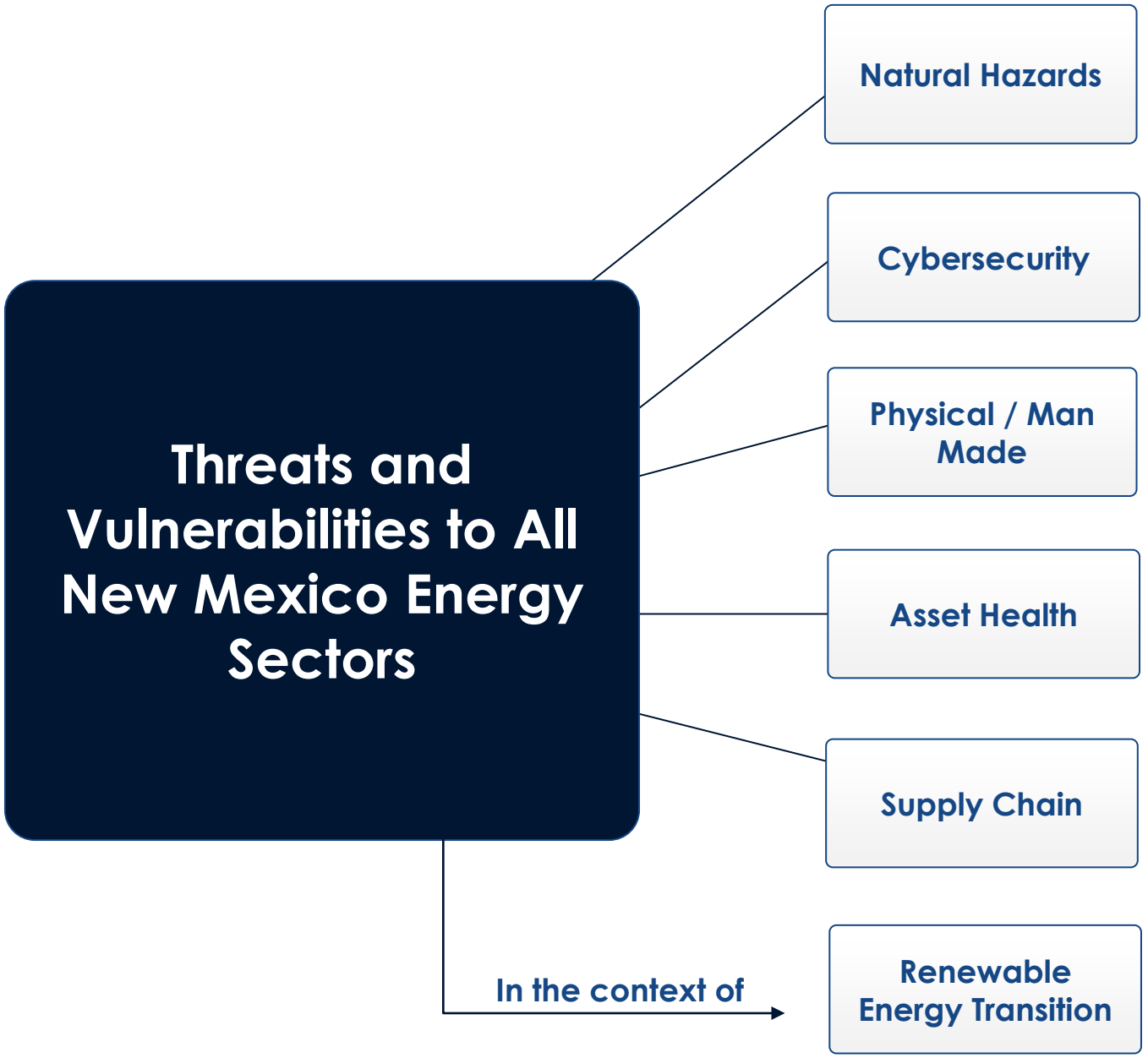

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Natural Hazards

- The National Weather Service identifies the most common natural hazards in New Mexico as **severe thunderstorms** and **tornadoes.**
  - **Extreme heat, wildfire, winter weather, and floods** also significantly impact the energy sector.
- All 33 counties in the state experience **severe thunderstorms** producing high winds, large hail, deadly lightning, and heavy rains at some time during the year.
  - From April through June, storms are at a peak mainly in the eastern areas of the state. Storms become more numerous statewide between July and August.
  - Hail with flash flooding becomes a threat for central and western New Mexico between June and September.
- The state **averages 10 tornadoes** per year and most are weak and short-lived. Strong tornadoes occur once every 10 years on average. The **highest risk of tornadoes is in eastern New Mexico from April to June**.

Natural Hazards:

The U.S. Department of Energy identifies the following **natural hazards** as causing the greatest overall property damage in New Mexico between 2009 – 2019:

- **Winter Storms and Extreme Cold** (21 events costing $39 million)
- **Wildfire** (five events costing $7 million)
- **Flood** (33 events costing $6 million)
- **Thunderstorm and Lightning** (113 events costing $6 million)
- **Tornado** (9 events costing $1 million)

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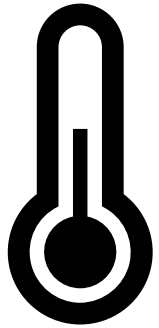
Extreme Heat

- Extreme heat events place **high strain** on the state's energy grid through the increased demand for air conditioning.
- Climate change continues to drive temperatures higher for longer periods.
- New Mexico is identified as **a state at greatest risk** of extreme heat, particularly densely populated locations such as **Albuquerque, Santa Fe, and Las Cruces**.
- In summer 2022, high temperatures pushed portions of New Mexico's grid close to requiring rolling blackouts.



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Wildfire

- Increased drought, stronger winds, and more frequent lightning associated with higher temperatures directly correlate to the **increased potential of wildfire** and greater threat to energy infrastructure through destabilization of transmission lines and roadways.
- The 2022 wildfire season in New Mexico was the **most expensive in recent history** costing $65 million dollars by May. It included **40 wildfires and burned a total of 904,000 acres**.
  - The fires were linked to lightning strikes, human-caused events, and downed power lines.

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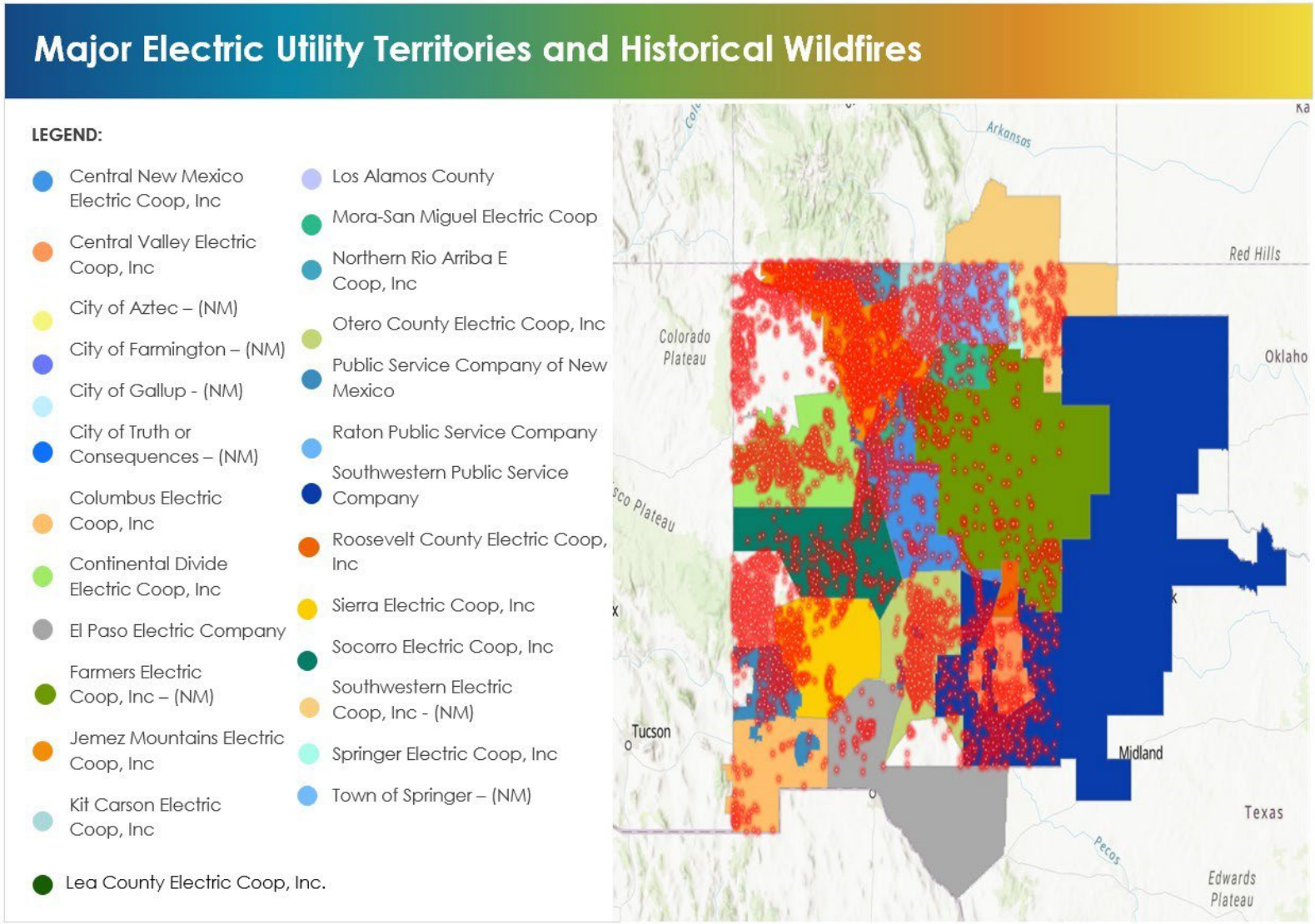
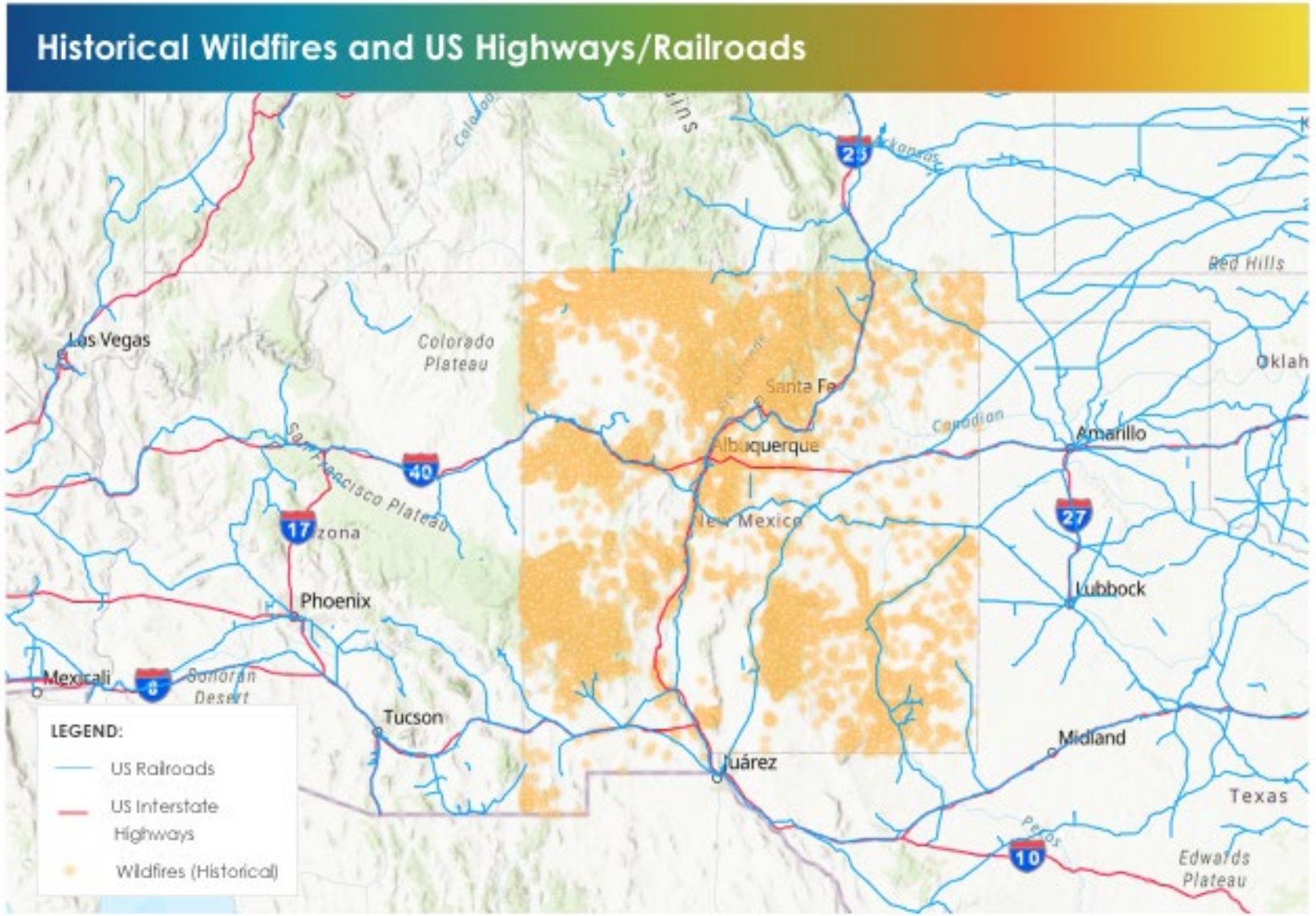
Historical Wildfires and Electricity Providers

Major Electric Utility Territories and Historical Wildfires



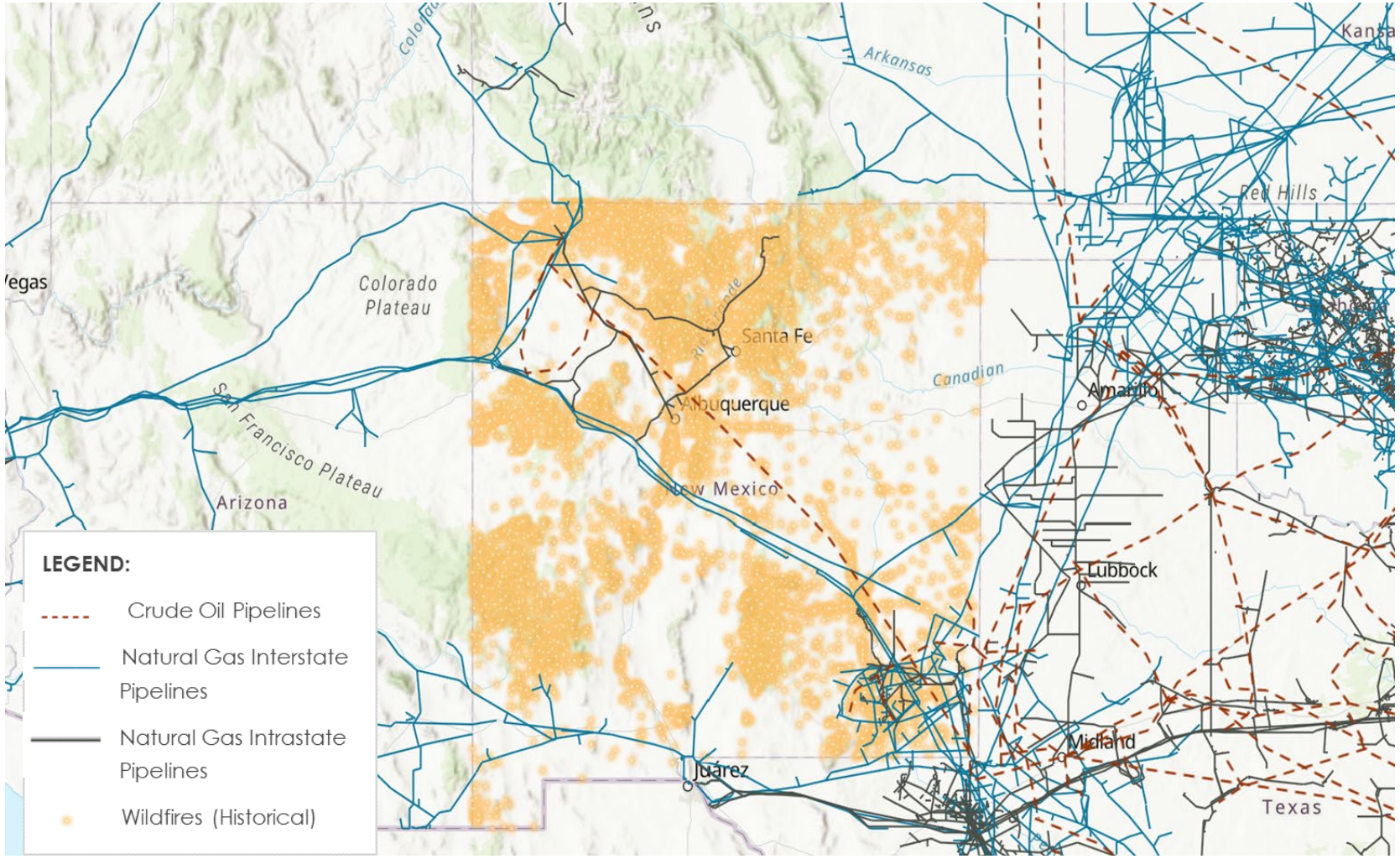
- The map overlays New Mexico's electric utilities with historical wildfires to highlight the impact to each service territory.
- The historical wildfire incident location data is gathered from the National Interagency Fire Center (NIFC) and contains wildland fire incidents reported to the Integrated Reporting of Wildland Fire Information from 2014 to present day.

Historical Wildfires and Transportation



- Natural gas, petroleum, and coal play an essential role in electricity generation and currently fuel a significant share of New Mexico's electricity generation.
- Wildfires threaten the transportation and delivery of fuel to power plants.

Historical Wildfires and Pipelines



- Wildfires pose a threat to natural gas and crude oil pipelines which could adversely impact the generation of electricity in New Mexico.

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Winter Weather and Extreme Cold

- Extreme cold events place **high strain** on the state's energy grid through the increased demand for heat and light.
- In the **electricity sector**, winter storms pose risks to electric infrastructure when lines become heavy with ice, trees fall, temporary closures of railroads and roadways occur, and physical accidents damage poles and facilities.
- In the **natural gas sector**, cold weather events lead to the freezing of water-bearing sensor lines which can impact safety sensor instrumentation lines and result in automatic shutoff of critical systems and isolation of individual wells.
  - If a significant number of production wells experience this phenomenon, pipeline pressure may drop below allowable levels resulting in the shutoff of downstream distribution lines for safety reasons.
  - The demand for natural gas can exceed supply during severe winter storms. Partial loss of supply combined with an over-demand for product can lead to significant price escalation.
- In the **liquid fuels sector**, drilling is susceptible to slower production caused by frozen ground and subzero temperatures. Impacts to road and railways can limit the ability to efficiently transport oil. Additionally, the threat of frozen and cracked pipelines poses a risk both to efficiency and the environment.

Physical Security

- Attacks and suspicious activity at power stations reached a **decade-long high last year**, with more than 100 reported incidents in the first eight months of 2022 according to the U.S. Department of Energy's most recent data.
- Since then, there have been at least **18 more publicly reported attacks** or potential attacks on substations and power plants in Florida, North Carolina, Oregon, South Carolina, and Washington.
- While recent nationwide attacks have targeted electricity assets, **all sectors are at risk**.
  - As New Mexico's renewable energy portfolio grows, **solar and wind infrastructure**, often located in remote parts of the state, is vulnerable.

Cybersecurity

- The energy sector is **technology driven**.
- Energy systems utilize computing technologies to **manage business systems and control and monitor the processes and transportation of energy** from production and generation to end use.
- The energy sector relies heavily on both **information technology (IT) systems and operational technology (OT) systems**.
    - **Impacts to IT systems**: loss of personally identifiable information, loss of business data, customer/supplier payment issues, and brand damage.
    - **Impact to OT systems**: supply shortfalls, disruption to power and access to fuel, health, safety, and economic impacts, forced switch to manual operations, and loss of visibility into operations.
- The cascading impacts of a cybersecurity attack on energy infrastructure critically threatens the economy and national security because all critical infrastructure sectors rely upon energy to operate.
- The **2022 Annual Threat Assessment** released by the Office of the Director of National Intelligence emphasizes, as it has in the past, **that cyber threats from nation states remain acute**.

Cybersecurity Threat Actors

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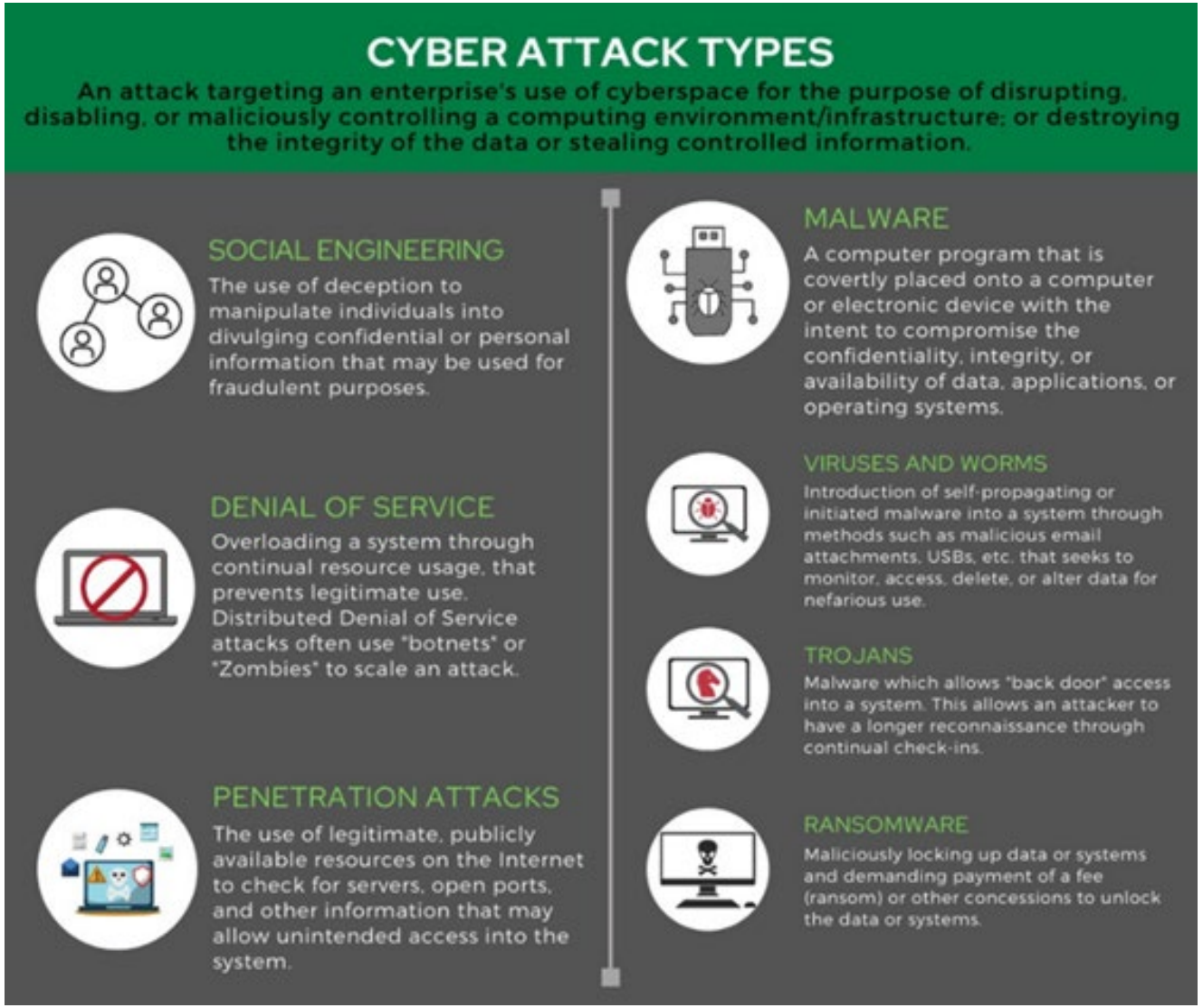
Cyber Attack Types



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Federal and State Cyber Information Sharing

Resource	Members	Description
Multi-State Information Sharing and Analysis Center (MS-ISAC)	Employees or representatives from all 50 states, the District of Columbia, U.S. Territories, local and tribal governments	The MS-ISAC is dedicated to improving the overall cybersecurity posture of state, local, territory and tribal (SLTT) governments, and is a resource for information on cyber threats to critical infrastructure. Members of the MS-ISAC can share threat information to the energy sector when appropriate.
Electricity Information Sharing and Analysis Center (E-ISAC)	Electricity owners and operators in North America	The E-ISAC provides information and resources to help the North American electricity industry prepare for and defend against both cyber and physical security threats.
Oil and Natural Gas Information Sharing and Analysis Center (ONG-ISAC)	Public and private oil and natural gas companies	ONG-ISAC serves as a central point of coordination and communication to aid in the protection of exploration and production, transportation, refining, and delivery systems of the ONG industry, through the analysis and sharing of trusted and timely cyber threat information, including vulnerability and threat activity specific to ICS and SCADA systems.

- Cybersecurity information sharing is **vital**.
- Information sharing includes:
  - Cybersecurity best practices, guidance, and trends;
  - Information on emerging cyber threats and vulnerabilities affecting energy sector stakeholders; and
  - Real-time information sharing during the response and recovery stages following a cyber event.

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Cybersecurity Resources for the Electricity Sector

- **U.S. Department of Energy's Cybersecurity Capability Maturity Model**: enables organizations to voluntarily measure the maturity of their cybersecurity capabilities in a consistent manner through a publicly available tool.
- **American Public Power Association's Public Power Cybersecurity Scorecard**: an online self-assessment tool for municipal utilities to evaluate their cybersecurity programs and overall posture.
- **National Rural Electric Cooperative Association's Rural Cooperative Cybersecurity Capabilities Program Cybersecurity Self-Assessment**: designed to assist cooperatives understand their cybersecurity posture and provides tools and resources focused on improving the cybersecurity capabilities of cooperatives. The program also provides opportunities for collaboration, education, and training.
- **National Association of Regulatory Utility Commissioners' Cybersecurity Manual**: a comprehensive suite of cybersecurity tools to help public utility commissions gather and evaluate information from utilities about their cybersecurity risk management and preparedness.
- **Edison Electric Institute's Electricity Subsector Coordinating Council**: a coordinating entity between federal agencies and investor-owned utilities to bolster defense against cyber and physical security threats.

Questions

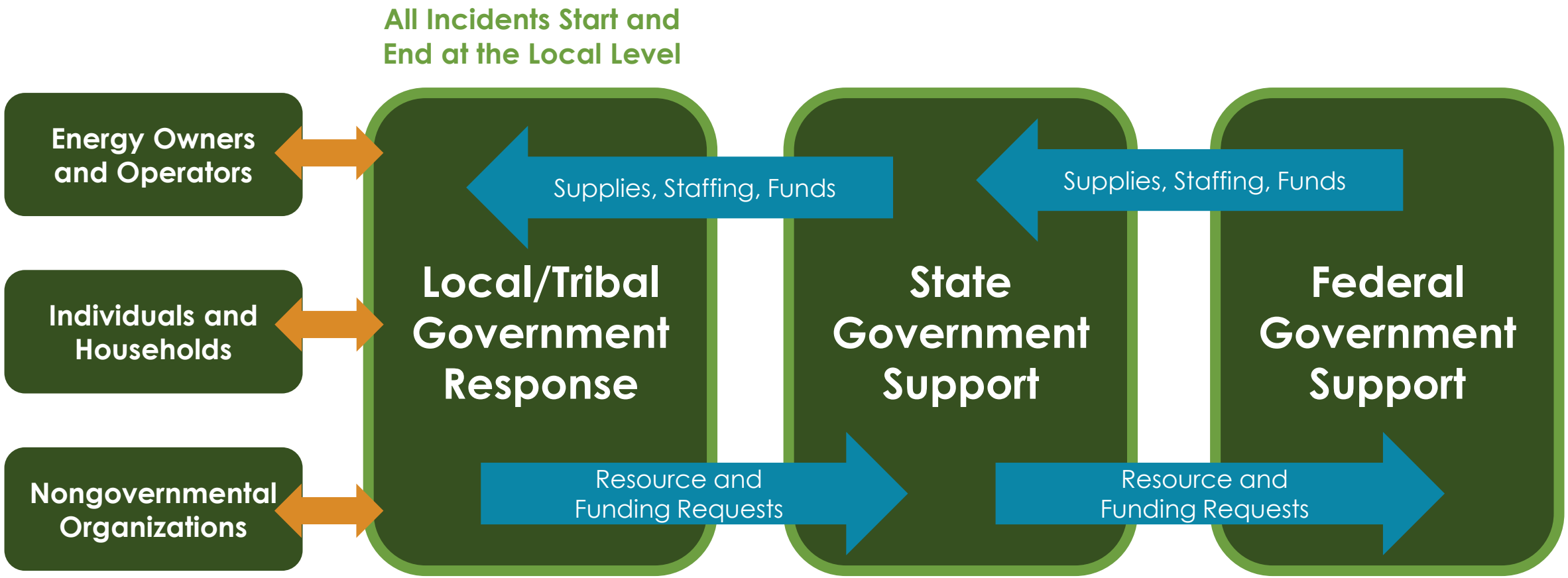
Introductions and SESP Development Process

State Energy Profile and Security Assessment

Energy Emergency Response Process

Risk Mitigation and Preparedness

Energy Emergency Response Framework



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Local/Tribal Government Response

Local Authorities

- In New Mexico, emergencies start and end at the **local level**.
- Local emergency management is a duty fulfilled by county and municipal emergency managers or public safety officials.
- Local emergency management coordinators are responsible for **planning hazard mitigation, preparedness, response, and recovery for the jurisdiction**, in addition to **constantly monitoring disruptions to the energy sector**.
  - In the event of a disruption, local emergency management may **activate the local EOC** and make recommendations to local leadership to declare a local state of emergency. **Local states of emergency** facilitate the sharing of resources through local jurisdiction to local jurisdiction agreements.
- A critical responsibility of local emergency management is **establishing relationships with local energy providers** and integrating them into energy emergency management preparedness, response, and recovery operations.
- When the severity of an event surpasses the ability of local and regional resources to respond, local emergency management **may request state assistance** through the state EOC within NM DHSEM.

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Tribal Authorities

- Like local jurisdictions, Tribal emergency management is a duty fulfilled by emergency managers or public safety officials.
  - Tribal emergency management may activate the Tribe's EOC and make recommendations to Tribal leadership to declare an emergency.
- Tribal governments may **seek assistance from the state** and be included in a state's request for a federal disaster declaration.
- An important characteristic of coordination between Tribal communities and the state is the **sovereignty of Tribal governments**.
  - Under the Sandy Recovery Improvement Act of 2013, which amended the Stafford Act, federally recognized Tribes may request a Presidential emergency or major disaster declaration independent of the state.

State Government Support

Governor of New Mexico

- The Governor serves as the state's **chief executive officer** and maintains primary direction, control, and coordination of state emergency operations functions and resources pursuant to the New Mexico All-Hazards Emergency Management Act.
- Oversees three state agencies with primary responsibility for energy security including **NM DHSEM, EMNRD ECMD, and NM PRC**.
- The Governor may use the following mechanisms to respond to energy emergency events:
  - **NM All-Hazards Emergency Management Act**: The Governor may exercise direction and control over all state resources engaged in emergency operations within the state. The Act permits the Governor to declare a state of emergency and enter into mutual aid agreements with other states and coordinate mutual aid agreements between local jurisdictions.
  - **NM Energy Emergency Powers Act**: The Governor may issue executive orders in response to demonstrated energy alert status to impose restrictions by state agencies and the public regarding the use of energy resources, reallocation of available energy supplies, and regulation on when energy may be sold and the amount.
  - **Stafford Act**: The Governor may request a federal emergency or disaster declaration under the Stafford Act to draw federal resources into the state during a declared state of emergency.

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New Mexico Department of Homeland Security and Emergency Management

- NM DHSEM serves as the **primary state agency** responsible for **coordination of all-hazards emergency management** centered on prevention, protection, mitigation, response, and recovery.
  - The NM DHSEM secretary or deputy secretary, at the request of the Governor, serves as the Governor's Authorized Representative and fulfills the Governor's duties during a declared state of emergency.
    - Designated as the State Coordinating Officer during a federally declared major disaster and serves as the primary contact and liaison between FEMA, New Mexico officials, and local and Tribal officials.
    - Authorized to activate the New Mexico Emergency EOC, change the EOC's activation level based on situation and response needs, and deactivate the EOC when response and recovery operations have been completed.
    - Utilizes Emergency Support Functions (ESFs) as the structure for coordinating interagency support for a state response to an incident.
- NM DHSEM **aids localities** when capabilities are overwhelmed and serves as the **conduit for federal assistance**.

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NM DHSEM (Cont.)

- Oversees the **New Mexico All Source Intelligence Center (Fusion Center)** that forecasts and identifies emerging or evolving threats or trends, collects, evaluates, analyzes, and disseminates information, and provides situational awareness and warnings.
  - Expertise in man-made events, specifically cyber, and coordinates with federal agencies to determine the extent of events and recommended actions.
  - **Resource to energy providers** for system vulnerability analyses as preventive measures to cyber events.
- Facilitates and distributes tens of millions of dollars in **federal grants** to New Mexico communities annually, including **mitigation funding**.
- Delivers robust schedule of in-person and **virtual training programs** and facilitates **exercises** to support emergency preparedness.
- Facilitates **state-to-state mutual assistance** during governor-declared states of emergency.

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New Mexico Energy, Minerals, and Natural Resources Department Energy Conservation and Management Division

- EMNRD ECMD is delegated to serve as the **New Mexico State Energy Office**:
  - **Monitors energy sectors** across the state.
  - Implements **energy conservation measures** promulgated by federal and state acts.
  - Promotes and implements energy security measures.
  - Maintains and continually updates the **New Mexico State Energy Security Plan** (SESP).
  - Serves as the **primary agency for coordinating communications during an energy emergency** per ESF #12 which is the Energy Annex of the New Mexico All-Hazards Emergency Operations Plan.
  - Develops and executes energy security exercises in collaboration with NM DHSEM and NM PRC.

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New Mexico Public Regulation Commission

- The PRC **regulates utilities** to ensure **fair and reasonable rates**, and to **assure reasonable and adequate services** to the public as provided by law.
  - In New Mexico, the PRC oversees three IOUs and 16 electric cooperatives. Municipal and tribal utilities are not subject to PRC's oversight.
- The **PRC Pipeline Safety Bureau** is responsible for ensuring compliance with federal regulations established by the Pipeline and Hazardous Materials Safety Administration (PHMSA) and oversees the safe transportation of energy and other hazardous materials by intrastate pipeline.
  - Conducts periodic inspections to review **integrity management plans** and confirm compliance procedures are identified and followed. Observation of field operations are a component.
  - Reviews **operator emergency operations plans** and receives **real-time updates on reportable incidents and accidents**.
  - Partners with the **811call center serving as a communication hub and location coordinating service for all companies and individuals planning ground-disturbing operations**. Operators are required to call 811 two days in advance of any construction to indicate where ground-disturbing operations will occur.

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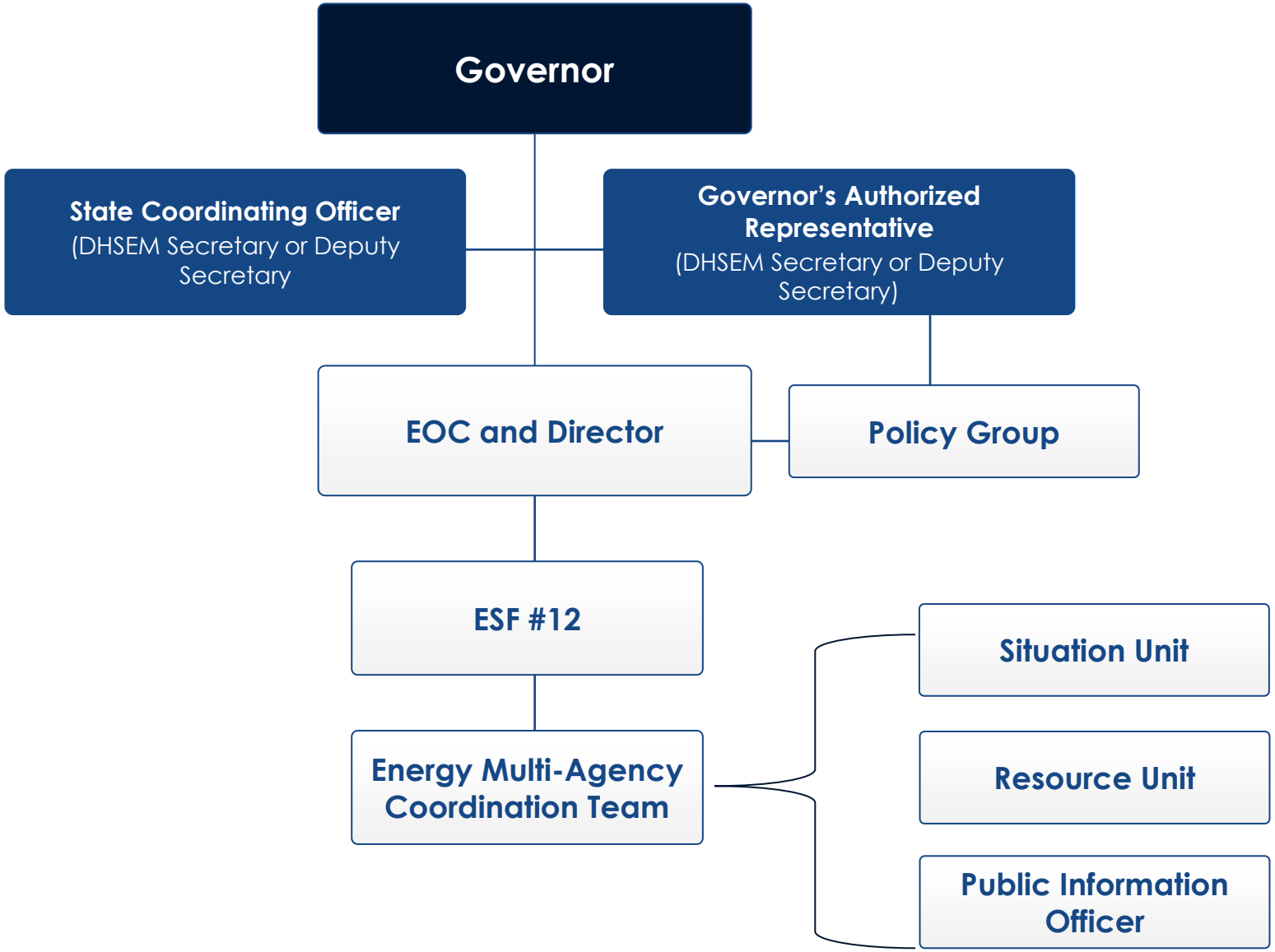
Incident Reporting Structure for an Energy Emergency



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Federal Government Support

Federal Emergency Management Agency (FEMA)

- The U.S. Department of Homeland Security's FEMA serves as the agency **responsible for coordinating federal incident response and recovery activities**.
  - The Stafford Act establishes statutory authorities for FEMA.
  - FEMA is broken into 10 regions nationwide. New Mexico is in **FEMA Region 6**.
  - FEMA supports Emergency Support Functions (ESFs), providing the structure for coordinating federal interagency response during an incident.
    - US DOE is the lead agency for **ESF-12 (Energy)**.
    - **US DOE CESER manages US DOE's ESF-12 responsibilities**. During a federal response, US DOE CESER activates its **Energy Response Organization** to manage response activities, including deploying ESF-12 responders, sharing situational awareness products, and coordinating with and providing technical assistance to federal, state, local, tribal, and industry partners.

Energy Emergency Assurance Coordinators Program

- The EEAC Program is a **cooperative effort** by US DOE CESER, the National Association of State Energy Officials (NASEO), the National Association of Regulatory Utility Commissioners (NARUC), the National Governors Association (NGA), and the National Emergency Management Association (NEMA).
- Provides states with a means of **sharing and receiving** credible, accurate, and timely information with other states and US DOE leading up to and during energy emergencies.
- US DOE leverages the EEAC network to **communicate important notices, such as situation and outage estimate reports, to EEAC contacts**.
- EEACs serve as points of contact for US DOE in the event of an emergency.
  - In New Mexico, **EMNRD ECMD serves as the EEAC contact** in close coordination with NM DHSEM and NM PRC. EMNRD ECMD is registered to ISERNet, the information-sharing platform hosted by US DOE.

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Questions

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Risk Mitigation and Preparedness

Risk Mitigation Approach

- Developed with understanding that **public-private integration is vital to risk mitigation.** Majority of New Mexico's energy infrastructure is owned and operated by the private sector.
- Outlines **risk mitigation technologies and operational measures** to increase resiliency of the state's energy infrastructure against primary threats and vulnerabilities.
  - Hazard-specific measures (extreme heat and cold, wind, floods, wildfires, cybersecurity).
  - All-hazards measures (robustness, redundancy, rapid detection/recovery).
- Identifies **federal and state resources** that align with risk mitigation measures: POWER Program and HMA Grant Program.
- Addresses the need for **close evaluation of the state's renewable energy transition** to ensure that adequate short-and long-term supplies of energy are maintained while coal and dispatchable fossil fuel sources are sunset in favor of more variable renewable resources.
  - **Energy storage capacity** and the **reliability of renewable sources** during times of peak load, energy disruptions, and emergency events remain key considerations.

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Preventing Outages while Enhancing Resilience Program

- The POWER Program is funded through Section 40101(d) of the BIL, the Preventing Outages and Enhancing the Resilience of the Electric Grid state formula grant program.
  - New Mexico is expected to receive $35 million from US DOE over five years.
  - **Funding opportunity release expected summer 2023**.
- **Electric utilities and other grid energy suppliers and grid infrastructure developers** may apply for funding to:
  - Reduce outages caused by extreme weather and other disruptive events
  - Modernize, while reinforcing the electric grid as the state augments renewable resources
  - Build community resilience
- 60% of available funding set-aside for **small utilities** defined as selling less than 400,000 MWh per year.
  - Small utilities must match one-third of the project cost to be eligible.
  - All other program applicants are required to match 100% of the project cost.

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Hazard Mitigation Assistance Grant Program

- **Nationally competitive resources through FEMA to support hazard mitigation**.
- Represents one of the largest pockets of mitigation funding nationwide and has experienced an uptick in successful projects to support the energy sector in recent years.
  - While eligible applicants include jurisdictions with a FEMA-approved Hazard Mitigation Plan, **public-private partnership** is a core tenant of the program.
  - Competitive projects break the cycle of disaster damage and include long-term solutions that reduce the impact of disasters in the future.
- Suite of HMA Programs include **Hazard Mitigation Grant Program, Hazard Mitigation Grant Program Post Fire, Flood Mitigation Assistance, Building Resilient Infrastructure and Communities Program, Pre-Disaster Mitigation Congressional Community Projects**.

Eligible Activities:

- **Utility** (undergrounding lines, hardening lines, flood risk reduction)
- **Wildfire** (defensible space, ignition resistant construction, hazardous fuels reduction)
- **Energy Mitigation** (generator, solar and battery storage, microgrid)

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Energy Emergency Preparedness

- A critical component of risk mitigation is **readiness** by public and private stakeholders to respond to an energy disruption.
- EMNRD ECMD has identified **energy sector preparedness priorities** to foster increased interagency collaboration between EMNRD ECMD, NM DHSEM, and NM PRC to plan for and respond to an energy disruption.
- Priorities are intended to:
  - Support NM DHSEM's comprehensive and statewide biannual emergency preparedness planning with **energy-specific considerations**.
  - **Increase direction and coordination** between state, local, and Tribal emergency management, and private sector partners.
- Preparedness priorities complement the risk mitigation measures outlined the Risk Mitigation Approach to sustain and **improve core capabilities** upon which the state may focus to meet critical energy objectives.
- EMNRD ECMD will advance preparedness priorities through future updates to the SESP and other energy planning initiatives.

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Operational Coordination

- Clearly define the **roles and responsibilities** of public and private energy sector leadership leading up to, during, and following an energy disruption.
  - Significant feedback received by stakeholders regarding the desire for **greater clarity regarding the state operational energy emergency response structure**.
  - Local emergency management and private sector stakeholders expressed the need for **increased awareness of the role of EMNRD ECMD** in energy security planning and response.
- Many energy sector relationships in New Mexico are newly formed. Further defining roles and responsibilities and communicating them enterprise-wide will strengthen New Mexico's energy security posture **through increased relationship development among critical stakeholders**.
  - **More than half** of the individuals who participated in the Regional Energy Security Tabletop Exercise in May 2023 indicated their most valuable takeaway from the event was identifying and establishing relationships with critical partners to bolster preparedness for an emergency and recommended that EMNRD ECMD continue to address this aspect of energy emergency planning in the future.

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Operational Communications

- **Augment and streamline communications** between public and private energy sector leadership to enhance the state's energy security posture.
  - Emergency management stakeholders relayed the importance of increasing communications with energy owners and operators to maximize capability to meaningfully plan for and respond to an energy emergency and provide the public with ongoing and appropriate information.
  - **Communications on service outages and restoration times** are particularly critical to the ability of emergency management to posture and address the need for **community lifelines** to support vulnerable populations during an energy disruption.
- Relationship development among critical energy stakeholders is paramount to effective communications and the energy preparedness priorities identified by EMNRD ECMD are intended to be complementary.
- Serving as the primary points of contact for energy industry representatives, **EMNRD ECMD and NM PRC will collaborate with NM DHSEM** to pursue opportunities to enhance interagency and public-private communications.

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Training Opportunities

- Emergency management training establishes a **shared understanding** of operations and capabilities to prevent, protect, mitigate, respond to, and recover from, threats and vulnerabilities.
- NM DHSEM offers a robust suite of trainings available to public and private sector partners hosted by:
  - NM DHSEM Training and Exercise Unit
  - FEMA Emergency Management Institute
  - National Domestic Preparedness Consortium
  - National Disaster Preparedness Training Center (NDPTC)
- Energy preparedness priorities are complemented by training opportunities that address elements specific to the energy sector.

Training Opportunities:

- Emergency Planning
- Hazardous Weather and Flooding Preparedness
- Hazardous Materials Contingency Planning
- Cybersecurity: Prevention, Deterrence, and Recovery
- Building Partnerships with Tribal Communities
- Improving Preparedness and Resilience through Public-Private Partnerships

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Questions

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