State Energy Security Plan

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

NEW MEXICO emnrd

Energy, Minerals and Natural Resources Department

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Acronym	Definition
BSEE	Department of Interior Bureau of Safety and Environmental Enforcement
CBP	Customs and Border Patrol
CESER	Office of Cybersecurity, Energy Security, and Emergency Response
CISA	Cybersecurity and Infrastructure Agency
DHS	Department of Homeland Security
DHSEM	Department of Homeland Security and Emergency Management
DOE	Department of Energy
ECAM	New Mexico Energy Conversation and Management Division
EEAC	Energy Emergency Assurance Coordinators Program
EIA	Energy Information Administration
EMNRD	New Mexico Energy, Minerals, and Natural Resources Department
EPA	U.S. Environmental Protection Agency
EPE	El Paso Electric Company
ESF	Emergency Support Functions
FBI	U.S. Federal Bureau of Investigation
FEMA	U.S. Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FMSCA	U.S. Federal Motor Carrier Safety Administration
GIS	Geographic Information Systems
IRS	U.S. Internal Revenue Service
LNG	Liquid/Liquified Natural Gas
NERC	North American Electric Reliability Corporation
NM	New Mexico
NMAC	New Mexico Administrative Codes
NRC	Nuclear Regulatory Commission
NRCC	National Response Coordination Center
OE	U.S. DOE's Office of Electricity
PHMSA	Pipeline and Hazardous Materials Safety Administration
PNM	Public Service Company of New Mexico
PRC	New Mexico Public Regulation Commission
SESP	State Energy Security Plan

Acronym	Definition
SLTT	State, Local, Tribal, and Territorial Governments
TSA	Transportation Security Administration
USACE	United States Army Corps of Engineers

Measurement	Definition
b/cd	Barrels per Calendar Day
Mcf	Thousand Cubic Feet
Mcf/d	Thousand Cubic Feet per Day
Mcf/y	Thousand Cubic Feet per Year
MMcf/d	Million Cubic Feet per Day
MWH	Megawatt hours

Executive Summary

The New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) Energy Conservation and Management Division (ECAM) serves as the New Mexico state energy office and has completed a comprehensive update to the New Mexico State Energy Security Plan (SESP), dated June 2023, with minor updates made in June 2025, to fulfill new criteria for SESPs in Section 40108 of the 2021 Infrastructure Investment and Jobs Act (IIJA).[1]

SESPs are an essential tool for establishing a deeper understanding of a state's energy system, including capabilities, critical infrastructure, threats and vulnerabilities, cross-sector interdependencies, planning, preparedness and response protocols, and mitigation strategies, all in support of related government emergency management and energy priorities. The energy sector is unique as all the other critical infrastructure sectors depend on energy to operate – and energy infrastructure is vulnerable to a variety of threats and hazards. SESPs bolster the reliability and resiliency of the supply of energy through efforts to identify, assess, and mitigate risks to energy infrastructure, and to plan for, respond to, and recover from events that disrupt energy supply.

Given New Mexico's climate mitigation initiatives and both state and federal environmental policy commitments, the current state of energy security in New Mexico must be understood in the context of a rapidly changing mix of energy sources and sinks. New Mexico injected new urgency into its renewable energy transition in 2019, when the Energy Transition Act (ETA) passed the New Mexico State Legislature and was signed into law by Governor Michelle Lujan Grisham.[2] The ETA sets a statewide renewable energy standard of a 50 percent renewable portfolio by 2030 for New Mexico investor-owned utilities and rural electric cooperatives and a requirement of an 80 percent renewable portfolio by 2040. In addition, the ETA set zero-carbon resources standards for investor-owned utilities by 2045 and rural electric cooperatives by 2050 (with caveats for reliability and cost).

The law transitions New Mexico away from coal and other dispatchable fossil fuel sources and toward more variable renewable and zero-carbon resources, necessitating dispatchable short- and long-duration storage. State and federal regulatory and fiscal policies encourage renewable energy and energy efficiency measures, including net

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[1] 117th Congress. 2021. *H.R. 3684 Infrastructure Investment and Jobs Act*. Washington. Henceforth referred to as "BIL".

[2] Office of the Governor Michelle Lujan Grisham. 2019. "Governor signs landmark energy legislation, establishing New Mexico as a national leader in renewable transition efforts." Office of the Governor. March 22. https://www.governor.state.nm.us/2019/03/22/governor-signs-landmark-energy-legislation-establishing-new-mexico-as-a-national-leader-in-renewable-transition-efforts/.

metering, interconnection standards, and financial incentives to electrify space heating and transportation. Future SESP updates will continue to evaluate New Mexico's energy security posture in the context of the renewable energy transition accelerated by the 2019 ETA.

The SESP is divided into six sections pursuant to guidance from the U.S. Department of Energy (USDOE) to address requirements in the IIJA:[3]

- Section I: Energy Landscape and Risk Profiles
- Section II: Energy Security Emergency Authorities
- Section III: Energy Emergency Response
- Section IV: Energy Resilience and Hazard Mitigation
- Section V: Energy Sector Planning and Preparedness
- Appendices

The IIJA underscores that energy security planning should include statewide and regional partners in addition to public and private sectors. The majority of New Mexico's critical infrastructure is owned and operated by private companies, and it is incumbent on local and state officials to work with private and public energy providers, across government agencies, and with relevant stakeholders to reduce the risk, vulnerabilities, and consequences of a state or regional energy emergency and provide for rapid recovery therefrom.

Stakeholder engagement is a cornerstone of this update to New Mexico's SESP. EMNRD ECAM engaged more than 300 stakeholders representing energy infrastructure owners and operators, local, state, federal, and Tribal emergency management, regional partners, and energy associations to inform key aspects of the SESP. Stakeholder engagement activities included:

- **SESP Planning Team**: Responsibility for assessing statewide and regional energy enterprise threats, vulnerabilities, risks, and mitigation strategies is delegated to three state agencies in New Mexico including EMNRD ECAM, the New Mexico Public Regulation Commission (NM PRC), and the New Mexico Department of Homeland Security and Emergency Management (NM DHSEM). EMNRD ECAM hosted representatives from NM PRC and NM DHSEM on an SESP Planning Team that met throughout the course of the project to foster comprehensive interagency planning and coordination.

[3] United States Department of Energy Office of Cybersecurity, Energy Security, and Emergency Response. 2022. "STATE ENERGY SECURITY PLAN GUIDANCE." DOE State Energy Security Plan Framework and Guidance. https://www.nga.org/wp-content/uploads/2022/05/State-Energy-Security-Plan-Framework-and-Guidance-FINAL.pdf.

- **Stakeholder Introduction**: EMNRD ECAM disseminated an email to stakeholders introducing the SESP update, including a read-ahead Project Roadmap, and hosted a virtual Stakeholder SESP Kickoff Meeting in November 2022.
- **Document Review and One-on-One Virtual Meetings**: Following the virtual Stakeholder SESP Kickoff Meeting, EMNRD ECAM requested and reviewed documents provided by stakeholders such as existing emergency operations plans, hazard mitigation plans, integrated resource plans, and after-action reports from previous incidents to increase understanding of the current energy security landscape in New Mexico. In addition, EMNRD ECAM requested and hosted one-on-one virtual meetings with critical energy stakeholders to obtain further information to shape development of the SESP.
- **State Energy Security Validation Workshops**: Three separate virtual State Energy Security Validation Workshops were hosted in February 2023 for audiences comprised of government, electricity, and oil and natural gas representatives to validate key findings in the State Energy Profile, Threats and Vulnerabilities Inventory, and Energy Infrastructure and Cross-Sector Interdependencies Risk Assessment.
- **Emergency Response Working Group Meetings**: In April 2023, EMNRD ECAM hosted two iterative, virtual meetings of an Emergency Response Working Group (ERWG) comprised of local, state, federal, and tribal emergency management coordinators to define roles and responsibilities in preparing for and responding to energy disruptions. Dialogue during the ERWG Meetings informed development of energy sector preparedness priorities that are included in the SESP.
- **Resilience and Mitigation Working Group Meetings**: In addition to the ERWG Meetings, in April 2023, EMNRD ECAM hosted two iterative, virtual meetings of a Resilience and Mitigation Working Group (RMWG) comprised of energy infrastructure owners and operators to elicit existing, anticipated, and required mitigation initiatives, including potential public-private collaborative opportunities. Dialogue during the RMWG Meetings yielded a Risk Mitigation Approach that is included in the SESP.
- **SESP Stakeholder Presentations**: At the conclusion of the project, in June 2023, EMNRD ECAM hosted two virtual presentations to describe the updated SESP. The audience for the first presentation included government partners. The audience for the second presentation was comprised of external stakeholders identified by EMNRD ECAM and involved in SESP development.

To further evaluate the state's energy security posture, the New Mexico administration hosted two tabletop exercises that informed development of the SESP:

- **Cascading Energy Disruption**: NM DHSEM, in coordination with EMNRD ECAM, Taos County Emergency Management and Kit Carson Electric Cooperative, hosted a Cascading Energy Disruption tabletop exercise in November 2022. The exercise brought together 19 participants from state and local government and the private sector to evaluate a heat dome event in which high temperatures strained the electric grid. The exercise objectives included: 1) examining and clarifying state agency roles, responsibilities, and authorities, and actions during an energy disruption; 2) evaluating the accuracy of the contact directory of information gathering; 3) conducting a walk-through of state communications systems and protocols that contribute to maintaining a common operating picture; and 4) exploring communications systems for information sharing with essential services and the public.
- **Regional Energy Security Exercise**: EMNRD ECAM, with technical assistance provided by the National Association of State Energy Officials (NASEO) and US DOE's Office of Cybersecurity, Energy Security, and Emergency Response (CESER), hosted a Regional Energy Security Exercise in May 2023. The exercise brought together nearly 70 participants from the public and private sectors to evaluate a cyberattack on natural gas infrastructure business and operating systems affecting natural gas supply and power generation, further impacted by physical attacks on electric substations causing prolonged large-scale power outages during a period of extreme heat. The scenario was designed to assess: 1) public and private sector roles, responsibilities, authorities, and actions; 2) communication and coordination protocols between state agencies, the private sector, federal government, other states, and Tribal nations used to facilitate energy emergency responses; and 3) collective understanding of how a cyberattack might impact existing energy delivery and operational coordination.

To test the SESP and to help with minor updates for the 2025 version, EMNRD ECAM, with technical assistance provided by the training and exercise division with the New Mexico Department of Homeland Security and Emergency Management (DHSEM), developed and facilitated three regional table-top exercises in 2025:

- Desert Gridlock Tabletop Exercise: Hosted by the San Juan County Office of Emergency Management in Farmington, New Mexico brought together nearly 60 participants from local, state, tribal and private partners from the Energy and Health Sectors to focus on an intentional sabotage to an electrical substation resulting in a regional power outage.
- Cyber Surge Tabletop Exercise: Hosted by the Dona Ana County Office of Emergency Management in Las Cruces New Mexico, this exercise brought

together 35 participants from public and private partners to discuss a cyber attack on a utility provider resulting in a power outage. This exercise focused on cascading impacts to highlight cross-sector interdependencies.

- Blazing Blackout Tabletop Exercise: This exercise focused on a Public Safety Power Shutoff, which are new to New Mexico. This TTX brought together 50 participants from across New Mexico representing Emergency Management in both the public and private sector as well as State agencies and utility providers. This exercise focused on coordination and communication before, during, and after a PSPS is implemented by an IOU.

EMNRD ECAM appreciates the robust participation by stakeholders throughout the SESP update and recognizes that some relationships between public and private partners are newly formed. Relationship development remains an ongoing priority through implementation of the updated SESP and future energy planning initiatives to strengthen New Mexico's energy security posture.

Section 1:
Energy Landscape and Risk Profiles

State Energy Profile

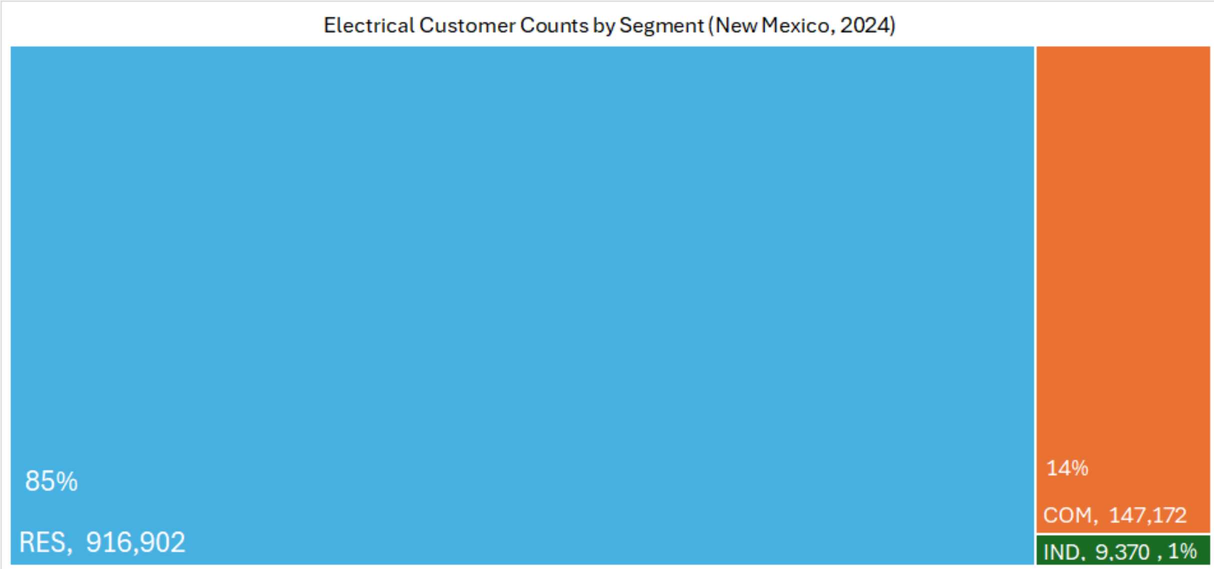
EMNRD ECAM has developed a State Energy Profile in accordance with guidance provided by US DOE CESER.[4] The Profile first evaluates the electricity, liquid fuels, natural gas, and renewable sectors in relation to production, transmission, distribution, and end-use, and inventories the energy sources and regulated and unregulated providers in New Mexico. The following sections in the Profile identify threats and vulnerabilities to the state's energy sector, critical energy infrastructure, and cross-sector interdependencies.

Electricity

A wide network of energy sources and capabilities coupled with regional demand establish New Mexico as a net electricity supplier for states throughout the southwest region. In 2021, for the first time in state history, renewable energy resources provided the largest share of New Mexico's in-state electricity generation.[5] The renewable energy market in New Mexico has continued to grow, supplying more than 50% of the state's total in-state generation in 2024. Wind power accounted for 37.5% of the state's electricity generation in 2024, followed by natural gas and coal that generated 29% and 20% of electricity respectively. The following section details electricity generation in New Mexico in addition to consumption, supply, and Balancing Authorities in the state.

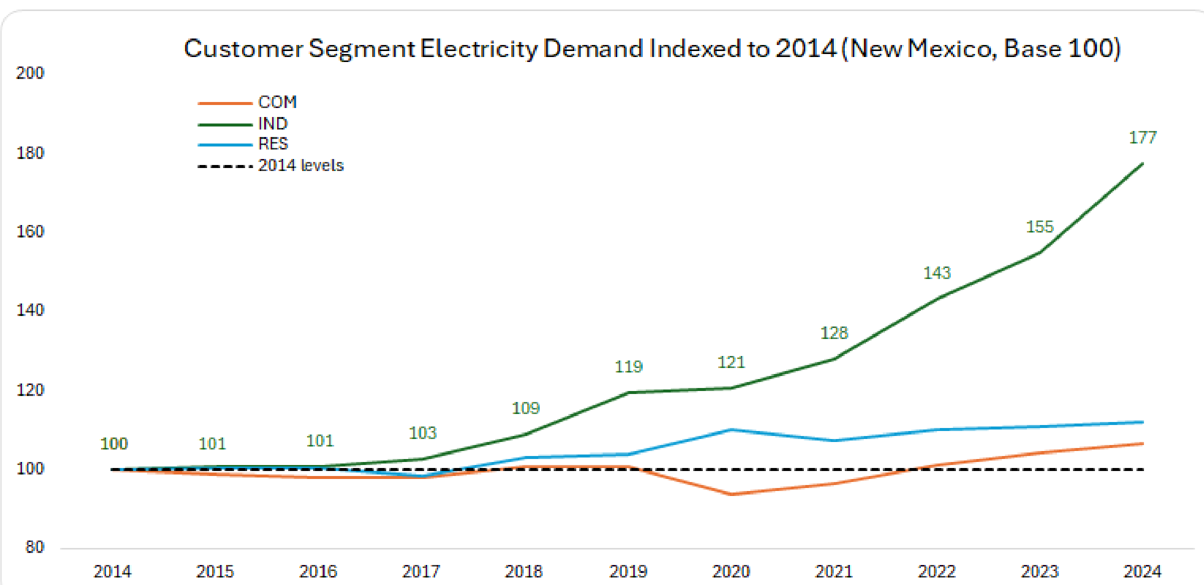
[4] United States Department of Energy Office of Cybersecurity, Energy Security, and Emergency Response. 2022. "CESER Guidance on Developing a State Energy Profile." CESER Guidance on Developing a State Energy Profile. May. https://www.energy.gov/sites/default/files/2022-08/DOE%20CESER%20Guidance_State%20Energy%20Profile%20Outline_FINAL_508_0.pdf.
[5] U.S. Energy Information Administration. 2023. New Mexico State Profile and Energy Estimates. May 18. https://www.eia.gov/state/analysis.php?sid=NM.

Consumption



Data Source: U.S. Energy Information Administration Form 861

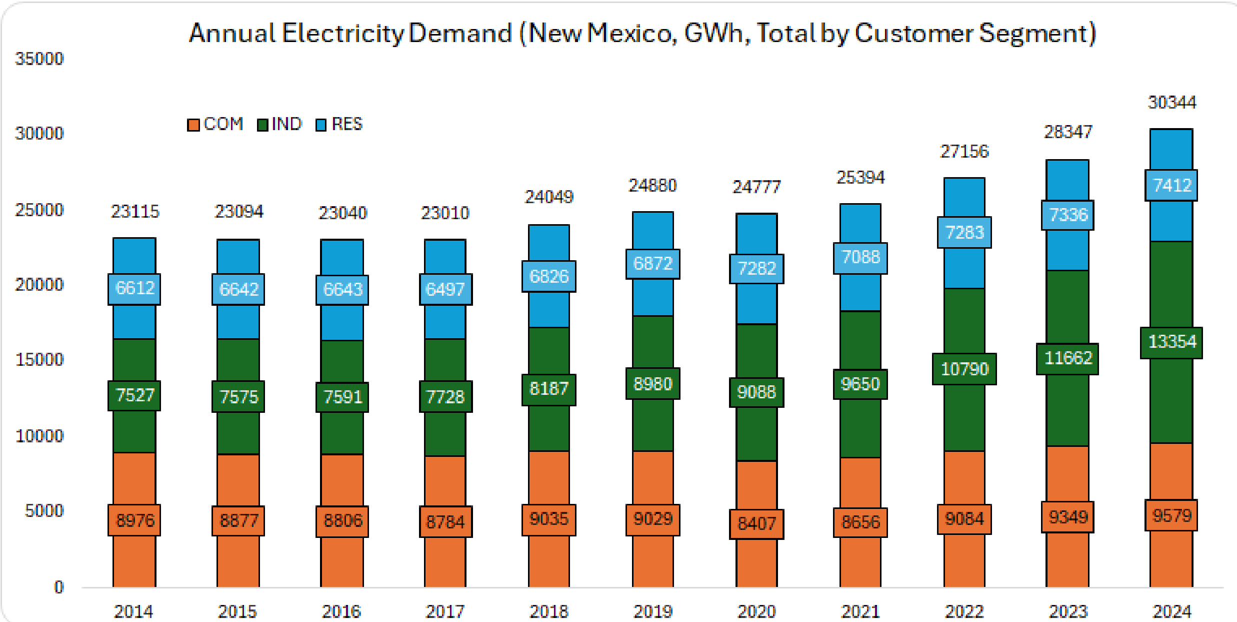
Within the electricity sector, 85% of customers are residential, 14% are commercial, and roughly 1% are industrial. In terms of consumption, 32% of electricity sold in New Mexico is consumed by commercial, 44% by industrial, 24% by residential, and less than one percent by transportation. Annual industrial electricity demand has increased by 77% over the last 10 years. This is largely the result of electrification in New Mexico's oil and gas sector which has been the main contributor to electricity demand growth in the state.



Data Source: U.S. Energy Information Administration Form 861

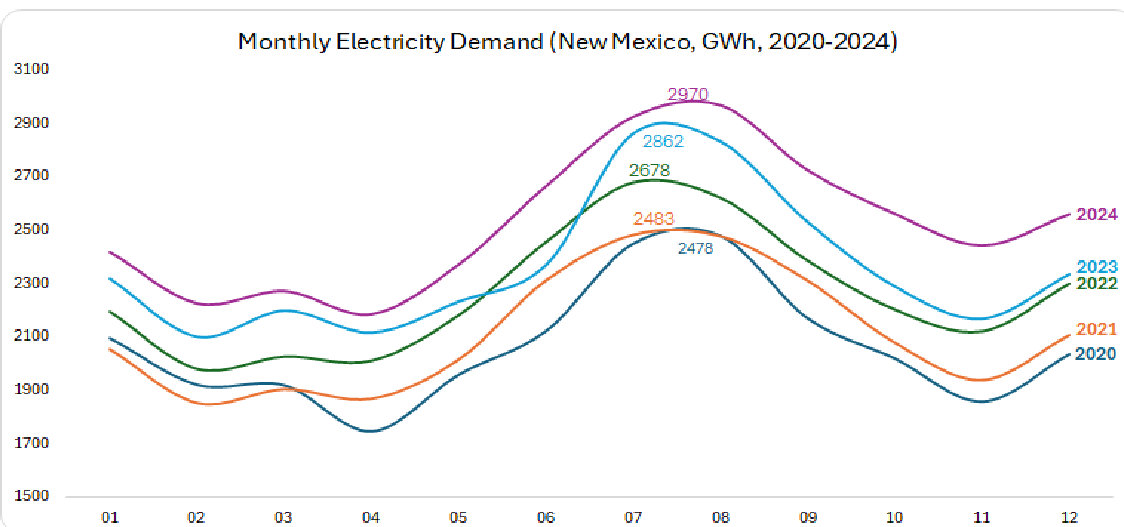
Retail Sales

Statewide electricity demand was roughly 30 Terawatt Hours in 2024, a 31% increase from 2014 levels.



Data Source: U.S. Energy Information Administration Form 861

Customers in New Mexico consume more electricity in the winter and summer compared to the spring and autumn. Peak electricity usage during a typical year occurs in June, July, and August, when temperatures are at their highest 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 (shown below).



Data Source: U.S. Energy Information Administration Form 861-M

Major Utilities

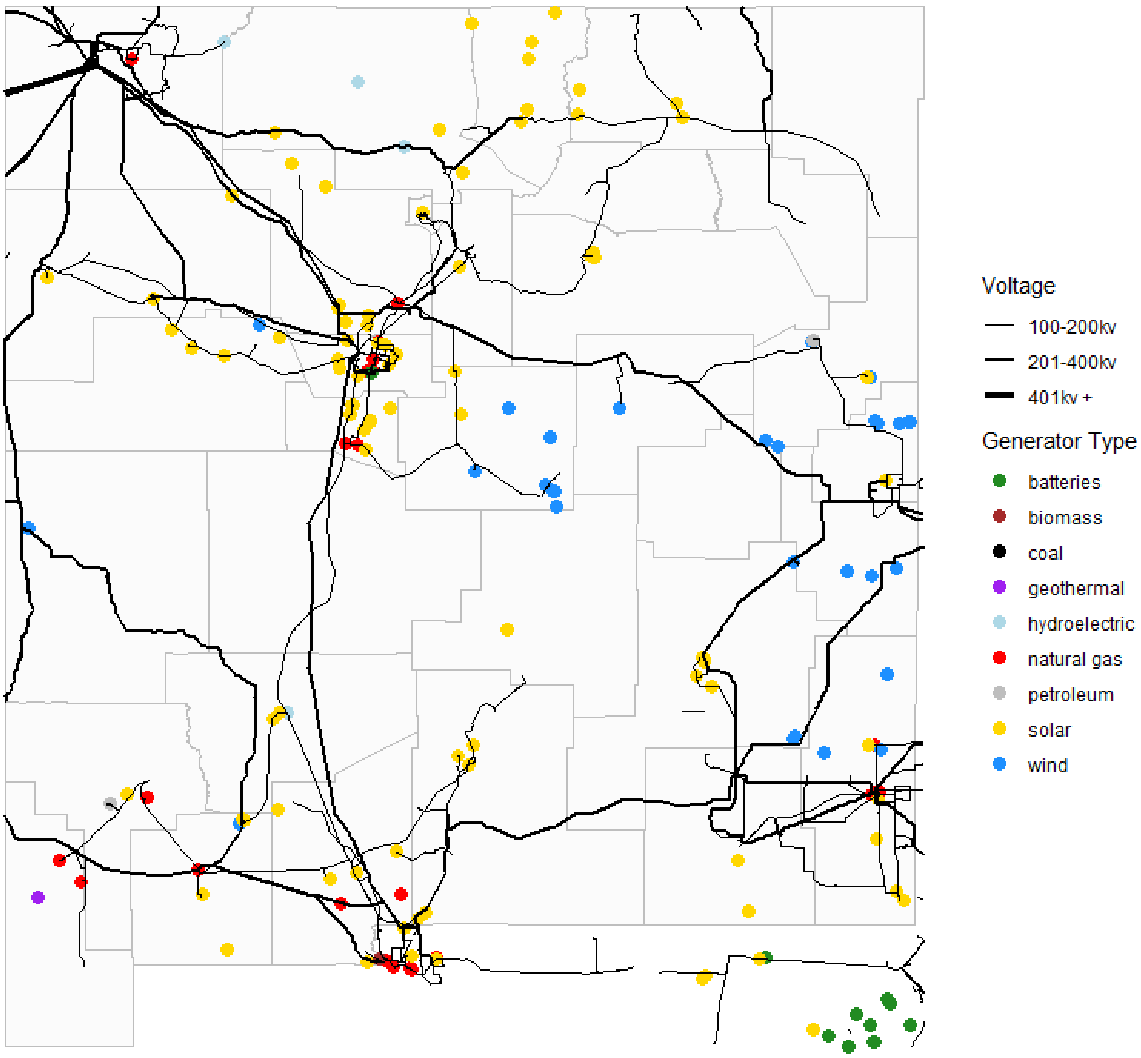
Utility Name	Ownership Type	Customer Count	Share of State Customers	Total Sales (MWh)
Public Service Co of NM	Investor-owned	548,019	53%	9,667,016
Southwestern Public Service Co	Investor-owned	126,926	12%	10,006,995
El Paso Electric Co	Investor-owned	106,493	10%	1,807,513
Central New Mexico El Coop, Inc	Cooperative	18,991	2%	251,439
Central Valley Elec Coop, Inc	Cooperative	14,945	1%	858,566
Continental Divide El Coop Inc	Cooperative	23,468	2%	576,328
Farmers Electric Coop	Cooperative	13,598	1%	386,707
City of Farmington - (NM)	Cooperative	44,935	4%	909,139
Jemez Mountains Elec Coop, Inc	Cooperative	31,616	3%	364,381
Kit Carson Electric Coop, Inc	Cooperative	30,420	3%	287,442
Lea County Electric Coop	Cooperative	11,244	1%	720,560
Los Alamos County	Cooperative	9,275	1%	480,239

Navajo Tribal Utility Authority	Cooperative	11,051	1%	126,640
Navopache Electric Coop, Inc	Cooperative	1,705	0%	10,928
Otero County Electric Coop Inc	Cooperative	20,530	2%	201,014
Rio Grande Electric Coop, Inc	Cooperative	316	0%	3,064
Southwestern Electric Coop Inc	Cooperative	2,277	0%	295,858
Springer Electric Coop, Inc	Cooperative	3,086	0%	218,919
Tri-County Electric Coop, Inc (OK)	Cooperative	6	0%	13
Roosevelt County Elec Coop Inc	Cooperative	6,118	1%	153,942

Data Source: U.S. Energy Information Administration EIA-861, 2023

Supply

Utility-Scale Generators and Transmission Lines
New Mexico



Data Source: U.S. Energy Information Administration, EIA-860, EIA-923, 2023.

Conventional (Fossil) Energy Generation

New Mexico relies on fast-ramping natural gas generation facilities (known as peaker plants) to balance demand with intermittent renewable generation. The state is also home to combined-cycle natural gas plants and the Four Corners Coal Plant which serve base demand.

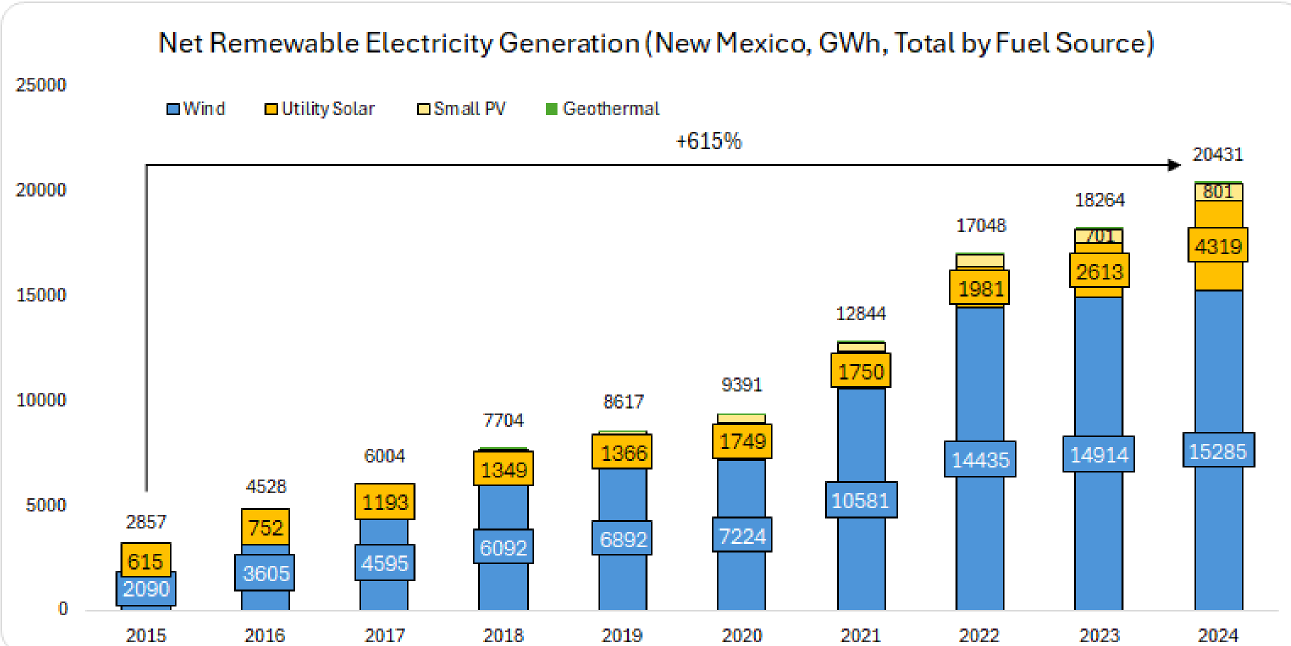
Coal Assets in New Mexico

Plant Name	Utility Name	County	Total MW
Four Corners Generating Station	Arizona Public Service	San Juan	1,540

Natural Gas Assets in New Mexico

Plant Name	Utility Name	County	Total MW
Afton Generating Station	PNM Resources	Dona Ana	287
Algodones Generating Station	PNM Resources	Sandoval	45
Bluffview Generating Station	City of Farmington	San Juan	67
Chino Mines Generating Station	Freeport Mines	Grant	54
Cunningham Generating Station	Southwest Public Service	Lea	444.2
Ford Utilities Center	University of New Mexico	Bernalillo	13.7
Hobbs Generating Station	Lea Power Partners LLC	Lea	681.5
La Luz Energy Center	PNM Resources	Valencia	42.3
LCEC Generation LLVC	Western Farmers EC	Lea	46.5
Lordsburg Generating Station	PNM Resources	Hidalgo	88
Luna Energy Facility	PNM Resources	Luna	650
Maddox Generating Station	Southwest Public Service	Lea	212
New Mexico State University	N.M. State University	Dona Ana	4.7
Pyramid Generating Station	Tri-State G and T	Hidalgo	186
Reeves Generating Station	PNM Resources	Bernalillo	154
Rio Bravo Generating Station	PNM Resources	Bernalillo	150
Rio Grande Generating Station	El Paso Electric	Dona Ana	398.3
Valencia Energy Facility	Valencia Power LLC	Valencia	159.5

Renewable Energy Generation



New Mexico is rich in renewable energy resources, including solar, wind, and geothermal. According to the US Energy Information Administration (EIA), in 2024, renewable resources supplied approximately half of New Mexico's in-state electricity net generation. Total in-state renewable generation in 2024 was more than double that of 2020.

After Nevada and Arizona, New Mexico ranks third in the nation in solar energy potential. Utility-scale solar photovoltaic (PV) facilities provided roughly 11% of New Mexico's total in-state net generation in 2024, and small-scale, customer-sited solar PV installations supplied about 2%. According to the Solar Energy Industries Association, as of 2025, there are 71 solar companies operating in New Mexico, and the state is 15th in the nation for total installed solar capacity. Additionally, New Mexico is home to Sandia National Laboratories, headquartered in Albuquerque, and its National Solar Thermal Testing Facility that provides data for the design, construction, and operation of components used in solar thermal power plants.

New Mexico is among the top states in wind energy potential and deployment, and significant production takes place on the high plains in the eastern half of the state. In 2024, wind energy contributed 75% of New Mexico's renewable generation and provided the largest share of the state's total in-state generation at 37%. Western Spirit (not captured in EIA data above) is the largest wind farm in the state at 1.3 GW. It came online in November of 2021 and is owned by Pattern Energy. Sagamore Wind in Roosevelt County is the second-largest farm statewide. It is a 522-megawatt wind facility operated by Southwestern Public Service Company. The facility came online in December 2020, more than 1,700 megawatts of capacity were added in 2021, and another 145 megawatts in 2022.

Identified as having the sixth-largest geothermal energy potential in the nation, New Mexico's southwestern and north-central regions have significant potential capability. Geothermal energy is currently used in the state to heat greenhouses, and for space heating, district heating, and at spas. The state's first and only utility-scale geothermal power plant came online in southwestern New Mexico in December 2013. The plant added a new generating unit that increased capacity from four megawatts to approximately 19 megawatts in 2018.

In addition, New Mexico hosts some biomass and hydroelectric capabilities. Roughly 6% of households in the state are heated with wood. There are four sites that generate hydroelectric power. The following charts detail renewable energy assets in the state.

Solar Assets in New Mexico

The following utility scale solar assets (>20 MWs of capacity) in New Mexico are derived from EIA Form EIA-860.

Plant Name	Owner Name	County	Total MW
Alta Luna	TPE Alta Luna LLC	Luna	28.1
Arroyo Solar Energy Storage Hybrid	Arroyo Solar	Mckinley	300
Atrisco Solar LLC	Atrisco Solar	Bernalillo	300
Britton Solar Energy Center	Exus NM	Torrance	50
Buena Vista Energy Center	Buena Vista Energy LLC	Otero	120
Caprock Solar 1 LLC	Duke Energy Renewables	Quay	25
Chaves County Solar I	Chaves Solar LLC	Chaves	30
Chaves County Solar II	Chaves Solar LLC	Chaves	70
Cimarron Solar Facility	Southern Power Company	Colfax	30
Encino Solar Energy Center	Exus NM	Sandoval	53
Escalante (NM)	OE ESCL	Mckinley	200
Jicarilla Solar 1 LLC	Repsol Renewables	Rio Arriba	50
Jicarilla Solar 2 LLC	Repsol Renewables	Rio Arriba	50
Macho Springs	Southern Power Company	Luna	50
NMRD Data Center III, LLC	Exus NM	Sandoval	55
Roadrunner Solar	NRG Solar	Dona Ana	50

Plant Name	Owner Name	County	Total MW
Roswell Solar, LLC	Roswell Solar LLC	Chaves	20
Route 66 Energy Center, LLC	Route 66 Energy LLC	Cibola	70
San Juan Solar I	San Juan Solar LLC	San Juan	200
Sky Ranch Solar	Sky Ranch Solar and Storage	Valencia	190

Wind Assets in New Mexico

The following wind assets in New Mexico are derived from 2025 EIA Form EIA-860.

Plant Name	Operator	County	Nameplate Capacity (MW)
Sagamore Wind	Southwestern Public Service Co	Roosevelt	522.0
Red Cloud Wind LLC	Pattern Operators LP	Lincoln	350.0
Clines Corners Wind Farm LLC	Pattern Operators LP	Torrance	325.0
El Cabo Wind	Avangrid Renewables LLC	Torrance	298.0
Tecolote Wind LLC	Pattern Operators LP	Lincoln	272.0
Roosevelt County	EDF Renewable Asset Holdings, Inc.	Roosevelt	250.0
Grady Wind Energy Center, LLC	Pattern Operators LP	Curry	220.5
Oso Grande Wind Farm	Tucson Electric Power Co	Lea	216.0
New Mexico Wind Energy Center	FPL Energy New Mexico Wind LLC	Quay	204.0
Broadview Energy JN, LLC	Pattern Operators LP	Curry	181.7
La Joya 1	Avangrid	Torrance	165
La Joya 2	Avangrid	Torrance	141
Duran Mesa	Pattern Operators LP	Lincoln	105

Hydro Assets in New Mexico

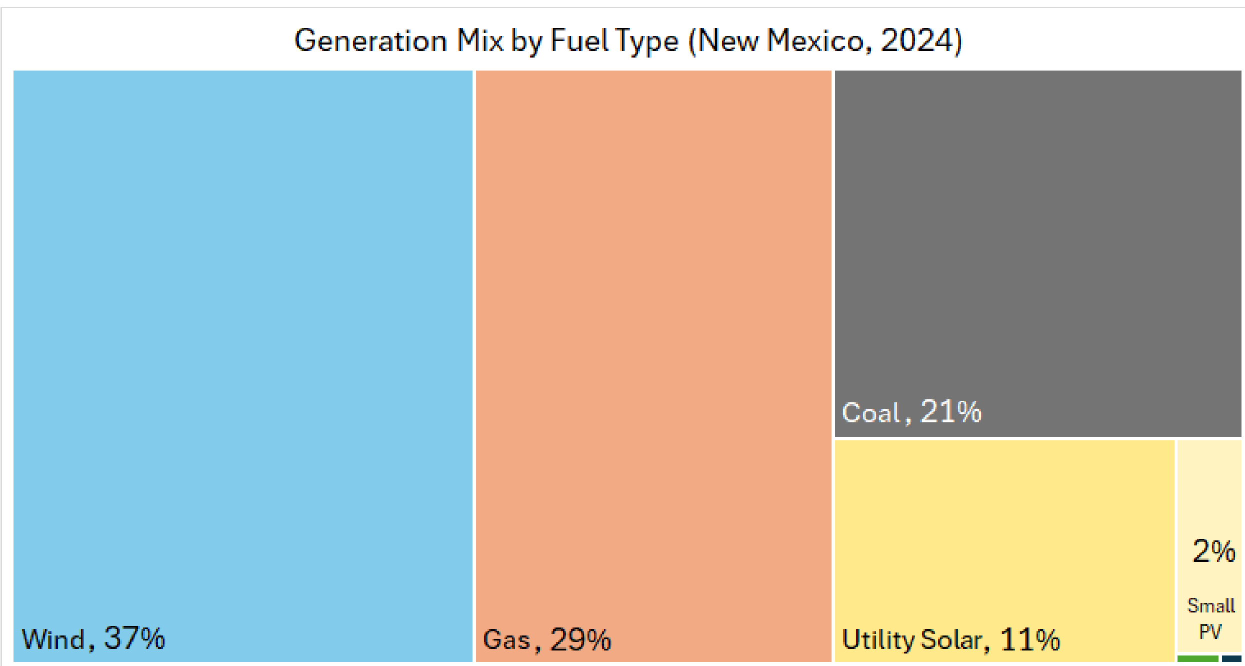
The following hydro assets in New Mexico are derived from EIA Form EIA-860 and EIA-860M.

Plant Name	Operator	County	MW
Navajo	City of Farmington	Farmington	30
Elephant Butte	U.S Bureau of Reclamation	Sierra	27.90
Abiquiu	Los Alamos Utilities	Rio Arriba	16.80
El Vado	Los Alamos Utilities	Rio Arriba	8.0

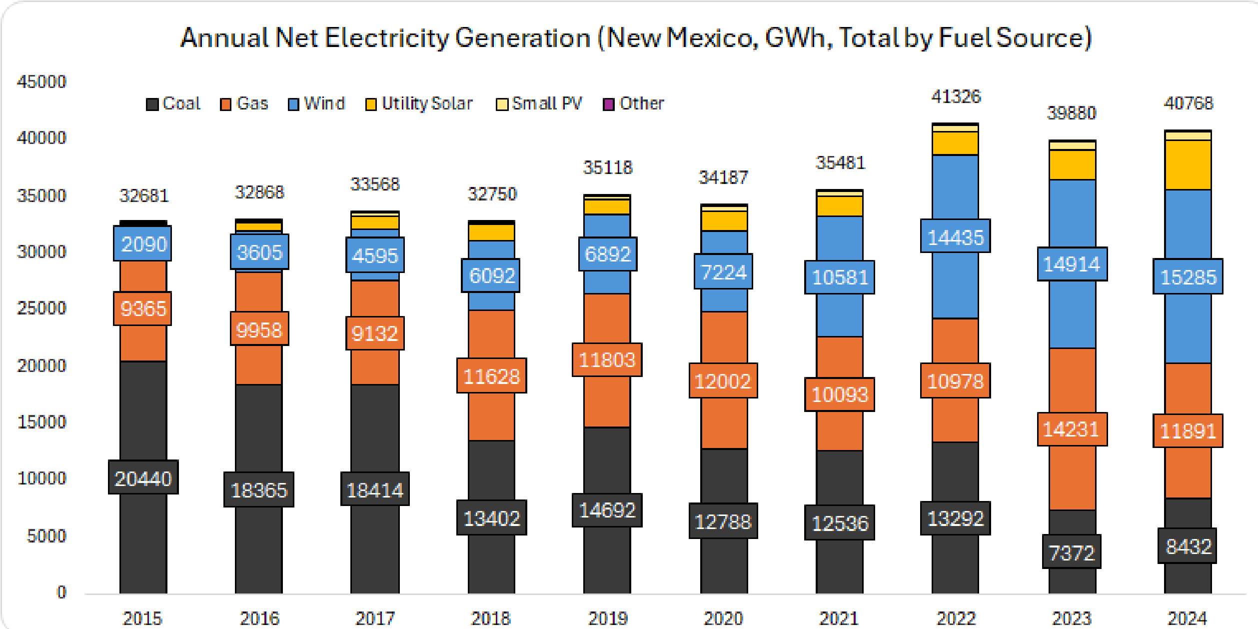
Assessment of Net Importer or Exporter of Electricity

New Mexico's net electricity generation in 2024 was 40,768 gigawatt hours (GWh), making the state the 39th largest electricity producer in the country. New Mexico's electricity sales in 2021 totaled 30,344 GWh. The state generated over 10,000 GWh of surplus electricity in the same year, indicating that New Mexico is a net electricity exporter.

In-State Generation Mix by Fuel Type



Data Source: U.S. Energy Information Administration, EIA Form 923.



Data Source: U.S. Energy Information Administration, EIA Form 923.

Despite exporting more electricity than it imports on net, New Mexico is still dependent on resources and transmission networks in neighboring states for firm and dispatchable resources (see electric utility resource mixes below). The flexibility offered by these resources is important as New Mexico continues to reduce its reliance on coal (shown above).

Important Out of State Resources

Plant Name	Utility Name	County	Total MW
Palo Verde Nuclear Generating Station	Arizona Public Service	Maricopa County Arizona	3,300
Glen Canyon Powerplant	US Bureau of Reclamation	Coconino County, Arizona	1,320

Key Balancing Authorities

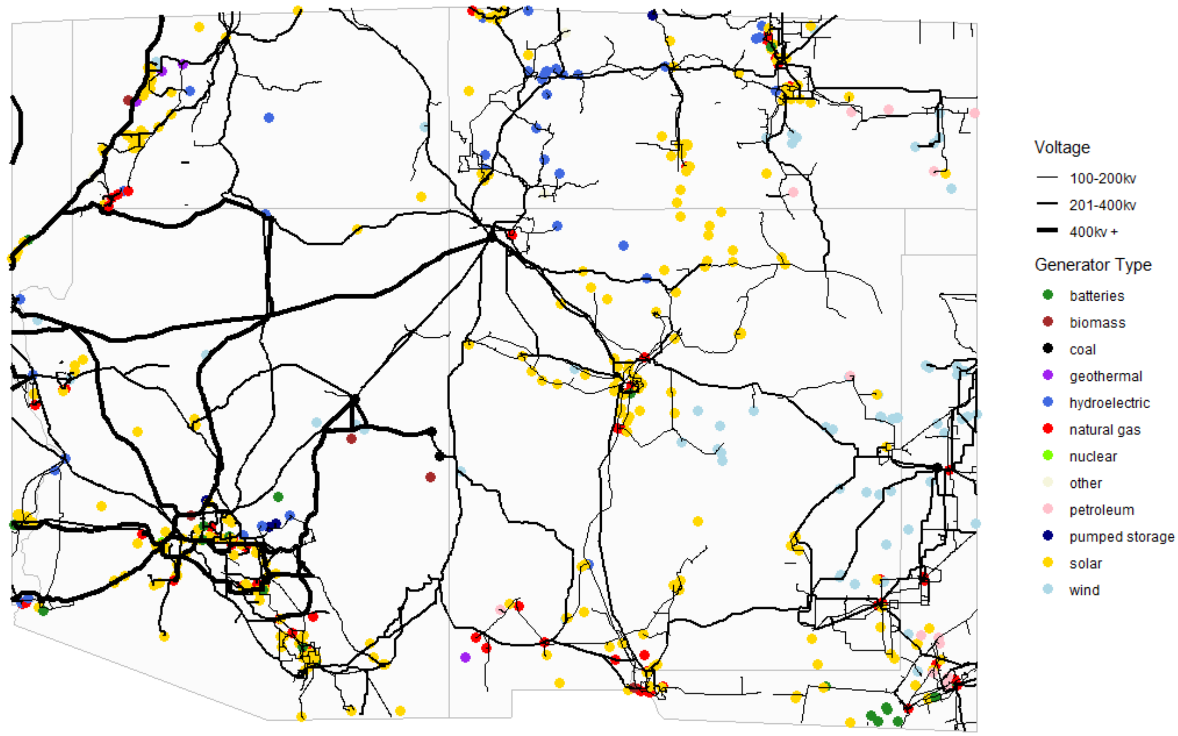
Nationwide, local electricity grids are interconnected to form networks for reliability and commercial purposes. The United States power system in the Lower 48 states is made up of three main interconnections, the Eastern Interconnection, Western Interconnection, and the Electric Reliability Council of Texas (ERCOT), which operate largely independently from each other with only limited transfers of power between them. The network structure of the interconnections helps maintain the reliability of the power system by providing multiple routes for power to flow and by allowing generators to supply electricity to many load centers. This redundancy helps prevent transmission line or power plant failures from causing interruptions in service.

Regional interconnections describe the physical system of the grid. The actual operation of the electric system is managed by entities called balancing authorities. Most, but not all, balancing authorities are electric utilities or independent operators that have taken on the balancing responsibilities for a specific portion of the power system. Balancing authorities ensure that power supply and demand are balanced to maintain reliability of the power system and are required to maintain operating conditions that adhere to mandatory reliability standards established by the North American Electric Reliability Corporation (NERC) and approved by the Federal Energy Regulatory Commission (FERC).

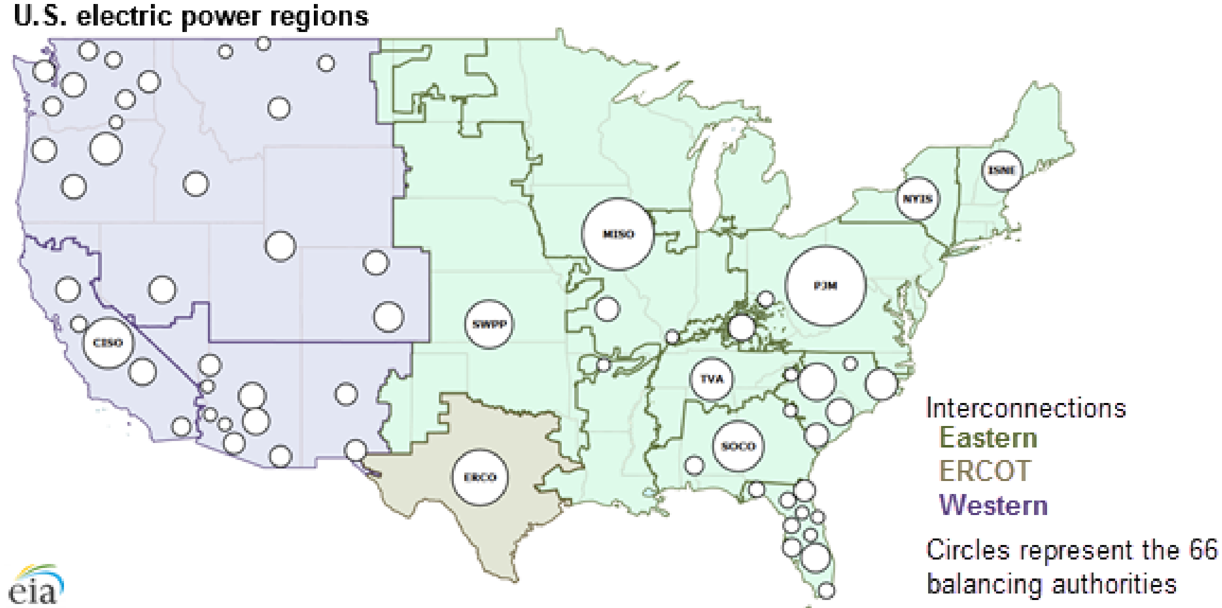
New Mexico is part of both the Eastern Interconnection and the Western Interconnection of the North American power transmission grid.[6] Most of the state is part of the Western Interconnection and is balanced by the Public Service Company of New Mexico with further support from El Paso Electric Company and Tri-State Generation and Transmission Association. The easternmost portions of the state are part of the Eastern Interconnection balanced by Southwestern Public Service Company with further support from Western Farmers Electric Cooperative. Further information regarding New Mexico's balancing authorities may be found below.

[6] U.S. Energy Information Administration (2016, July 20). *U.S. Electric system is made up of interconnections and balancing authorities*. https://www.eia.gov/todayinenergy/detail.php?id=27152

Utility-Scale Generators and Transmission Lines
western states



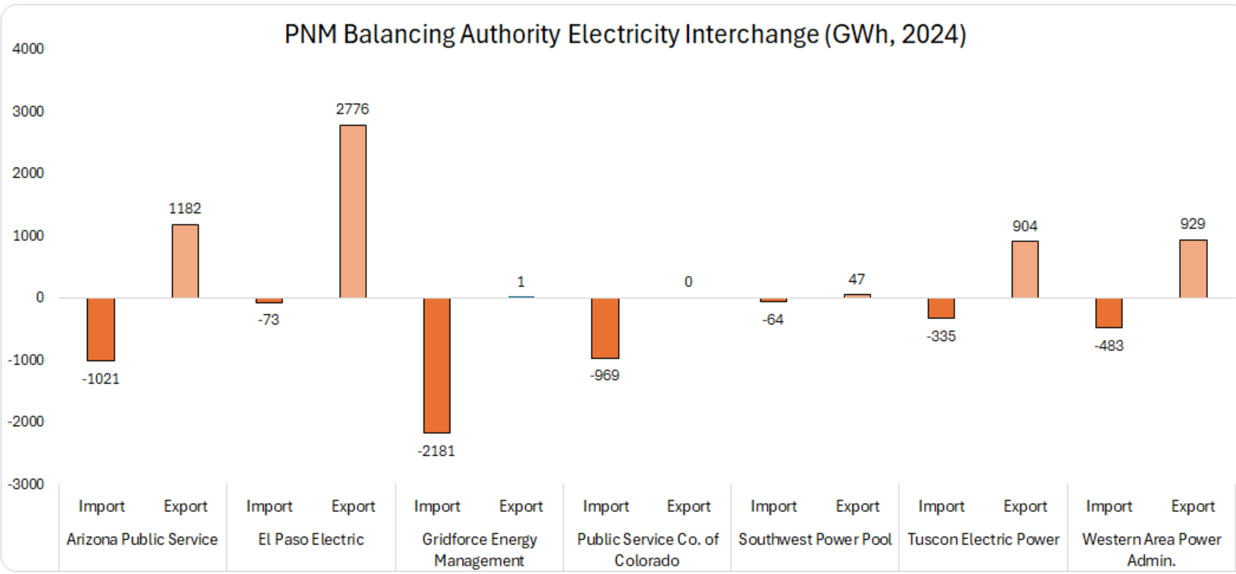
U.S. electric power regions



PUBLIC SERVICE COMPANY OF NEW MEXICO BALANCING AUTHORITY

The Public Service Company of New Mexico (PNM) is the state's largest balancing authority. PNM Balancing Authority imported over 5,100 GWh of electricity in 2024 while exporting over 5,800 GWh to neighboring grid operators.

Electricity Exports and Imports



Data Source: U.S. Energy Information Administration, EIA Form 930.

Electricity Providers in New Mexico

The following lists identify all electricity providers in New Mexico. Electricity providers in the state operate in two markets, those that are regulated by the state and federal government and those regulated by the federal government only. In the state-regulated market, utilities must comply with consumer rate-setting requirements established by NM PRC in addition to seeking NM PRC approval for investments in new utility infrastructure. Utilities in the state that are regulated by NM PRC include three investor-owned utilities (IOUs) and, to some extent, 16 electric cooperatives. Utilities that are not regulated by NM PRC include three tribal and seven municipal utilities.

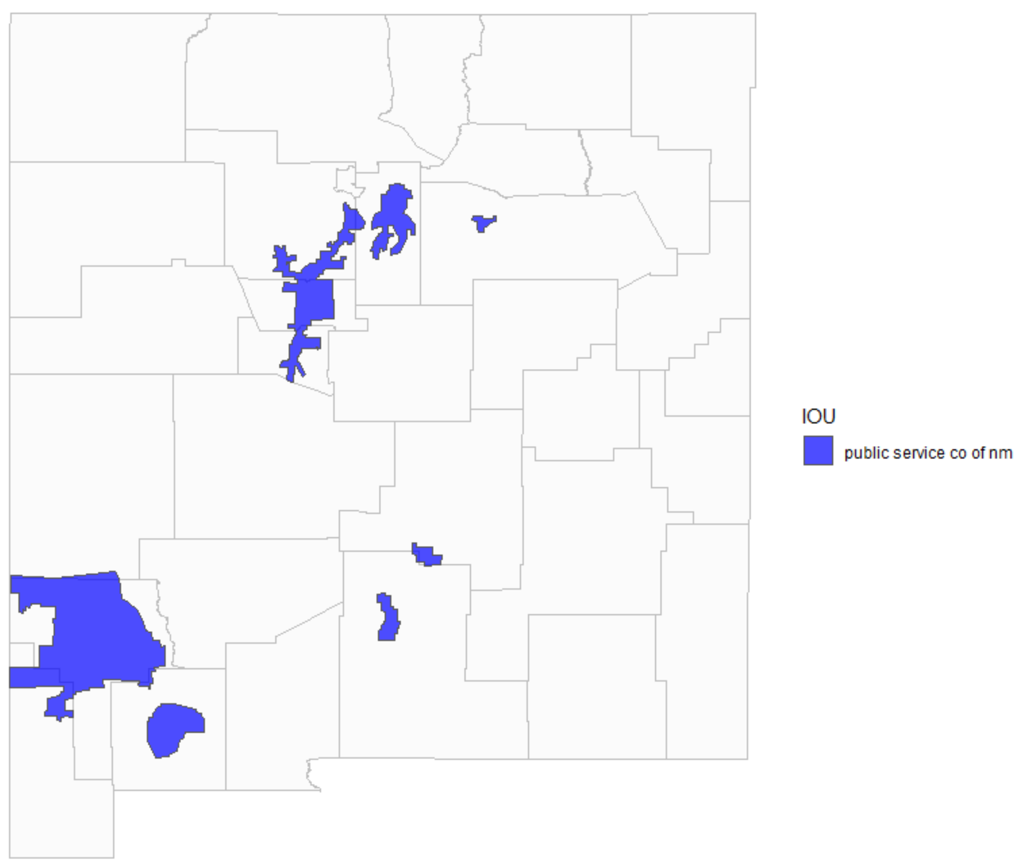
IOUS

Utility Name	Owner
El Paso Electric	Infrastructure Investment Fund, J.P. Morgan
Public Service Company of New Mexico	Public Service Company of New Mexico
Xcel Energy	Xcel Energy

Public Service Company of New Mexico Service Areas

PNM serves more than 500,000 residents and businesses and is the largest electricity provider in the state in terms of customer base.

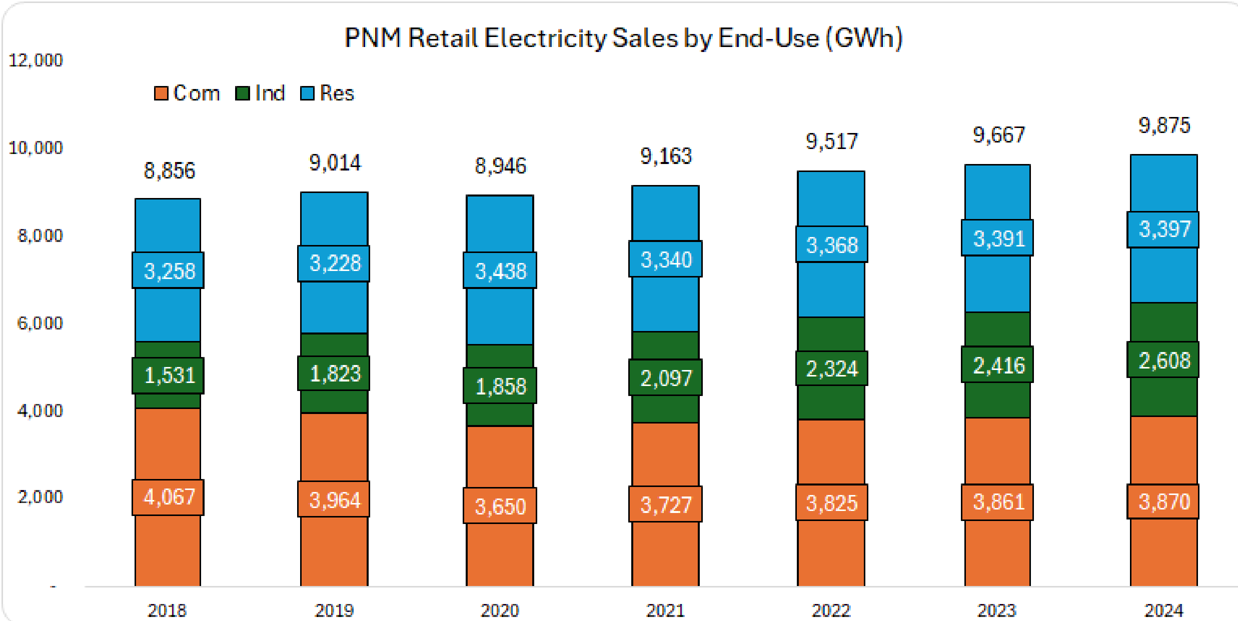
PNM Service Territory



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

PNM Electricity Overview

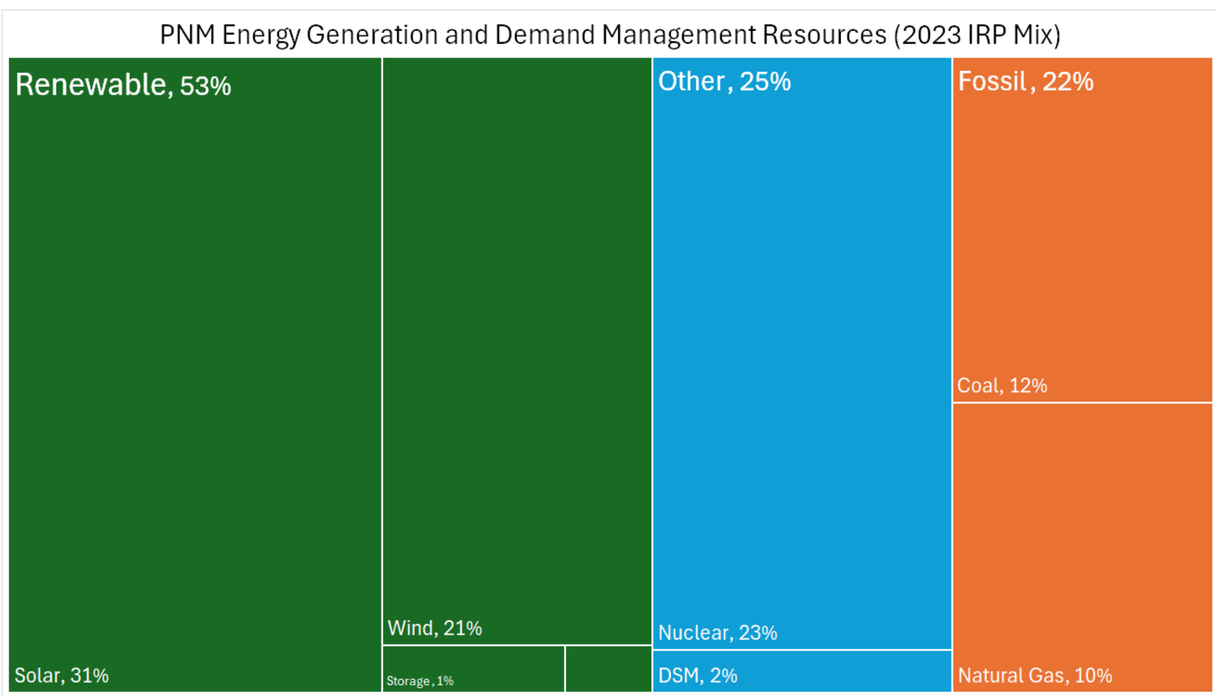
PNM served over 9,800 GWh of electricity demand in 2024. Electricity demand at the state's largest investor-owned utility has grown +12% since 2018, with industrial demand driving the increase with +70% growth over the same period. Industrial demand within PNM's service territory is largely the result of new data center customers and the electrification of manufacturing.



Data Source: U.S. Energy Information Administration, EIA Form 861.

Electricity Generation by Source

According to its 2023 IRP, PNM sourced 53% percent of its electricity from renewable resources, mainly utility scale solar and wind. PNM is also highly dependent on nuclear from the Palo Verde Nuclear Generating Station, sourcing nearly one fourth of its electricity from the plant. PNM sources the remaining 22% of its electricity from coal and gas.

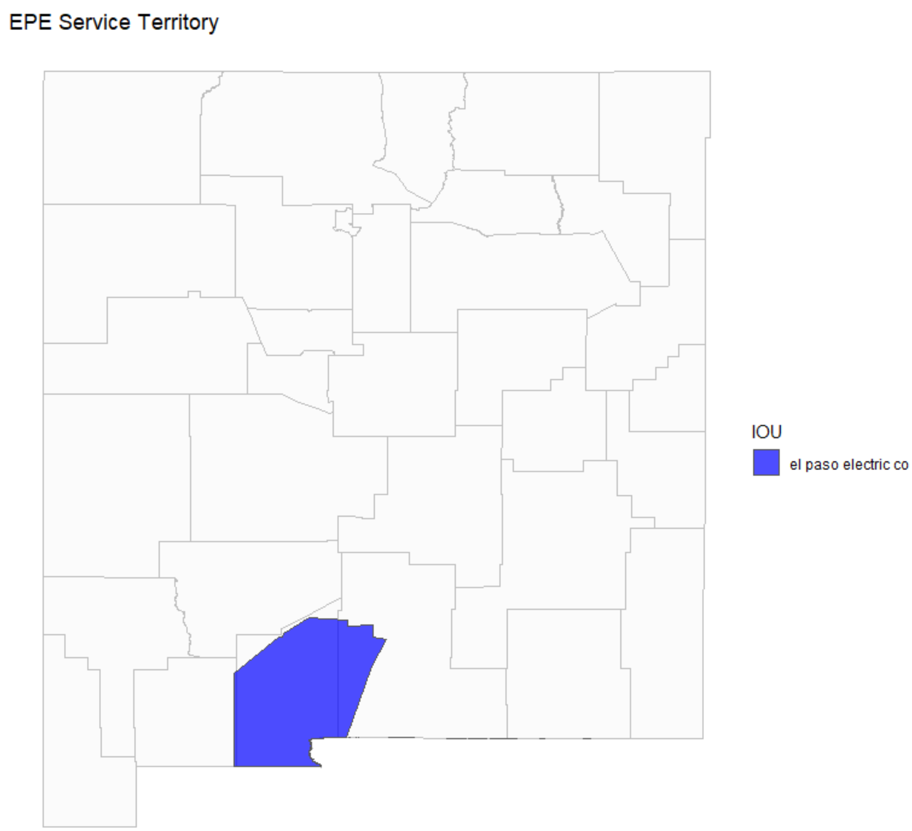


Data Source: 2023 PNM Integrated Resource Plan Filing with New Mexico PRC.

EL PASO ELECTRIC COMPANY

El Paso Electric Company Service Areas

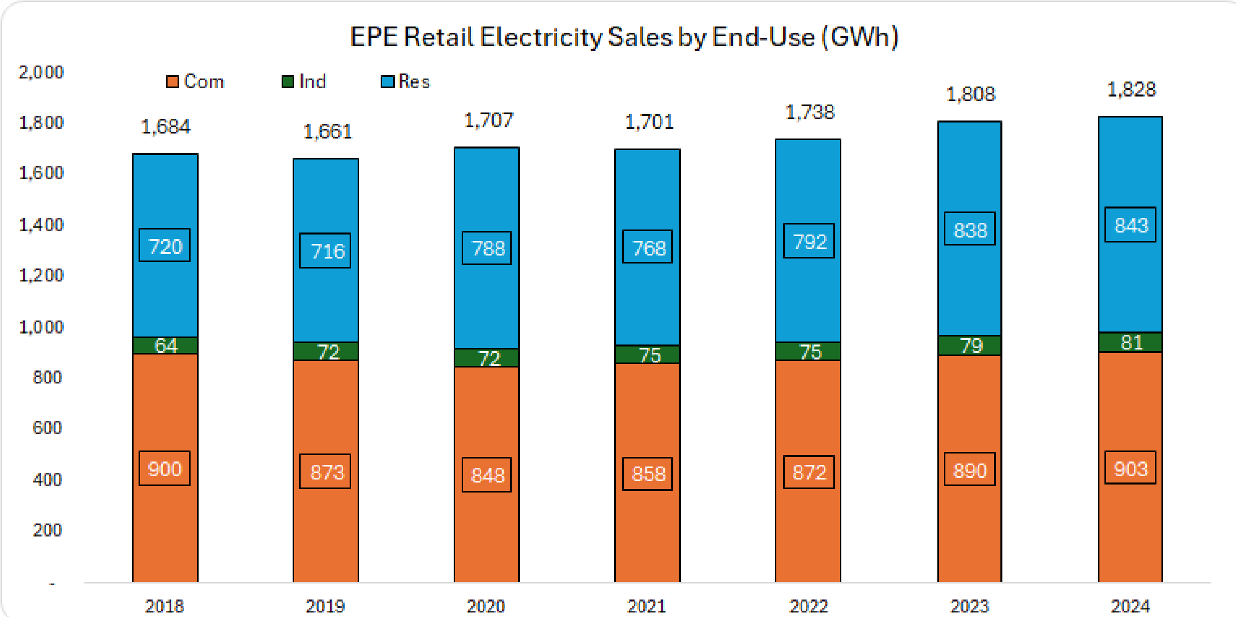
The El Paso Electric Company (EPE) serves 460,000 customers over a 10,000 square mile service area in Texas and New Mexico. Approximately 103,000 of total customers reside in New Mexico.



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

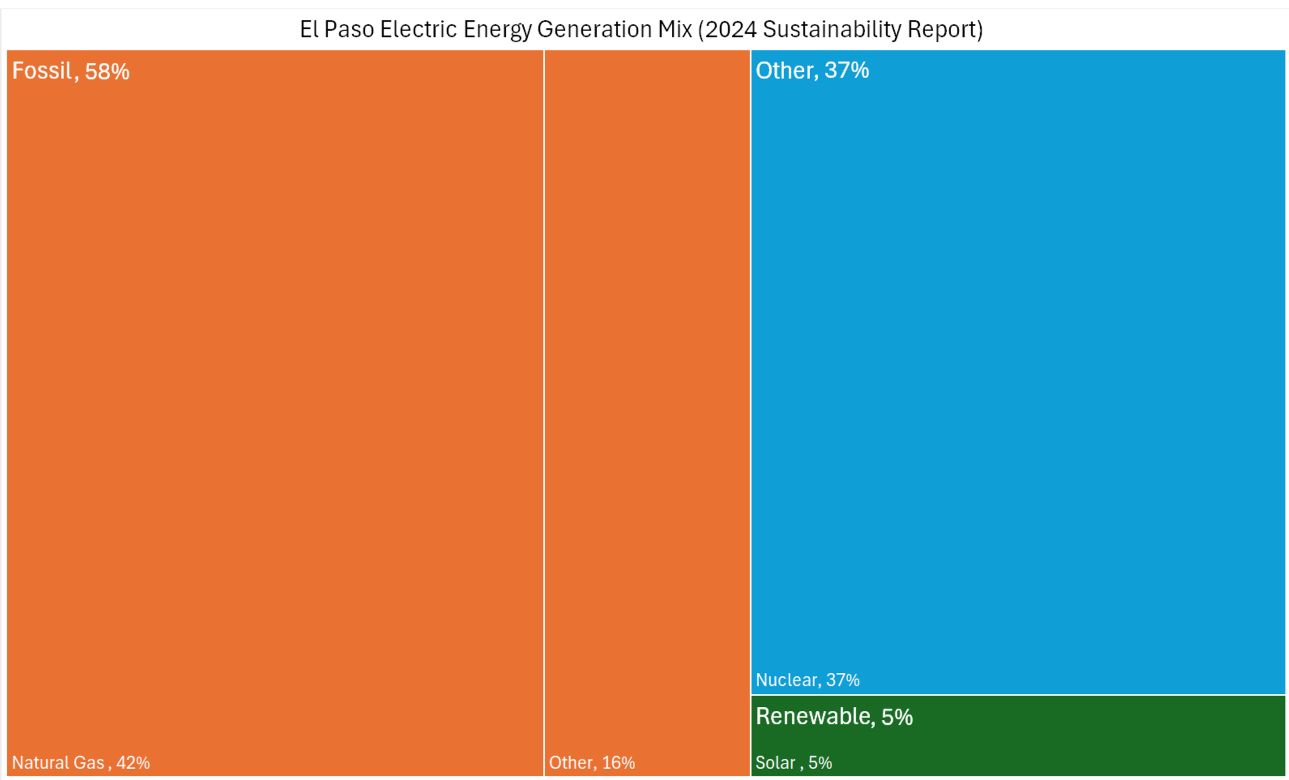
EPE Electricity Overview

EPE served over 1,800 GWh of electricity demand in 2024. Electricity demand at EPE has increased +9% since 2018 thanks to industrial and residential demand growth over the same period (+27% and +17%, respectively). Increasing residential demand within EPE's service territory is largely the result of population growth in the Las Cruces-El Paso metro area.



Electricity Generation by Source

According to its 2024 Sustainability Report, EPE sourced 58% percent of its electricity from fossil resources, mainly natural gas. EPE is also highly dependent on nuclear from the Palo Verde Nuclear Generating Station, sourcing nearly 40% of its electricity from the plant. EPE sources the remaining 5% of its electricity from utility scale solar.

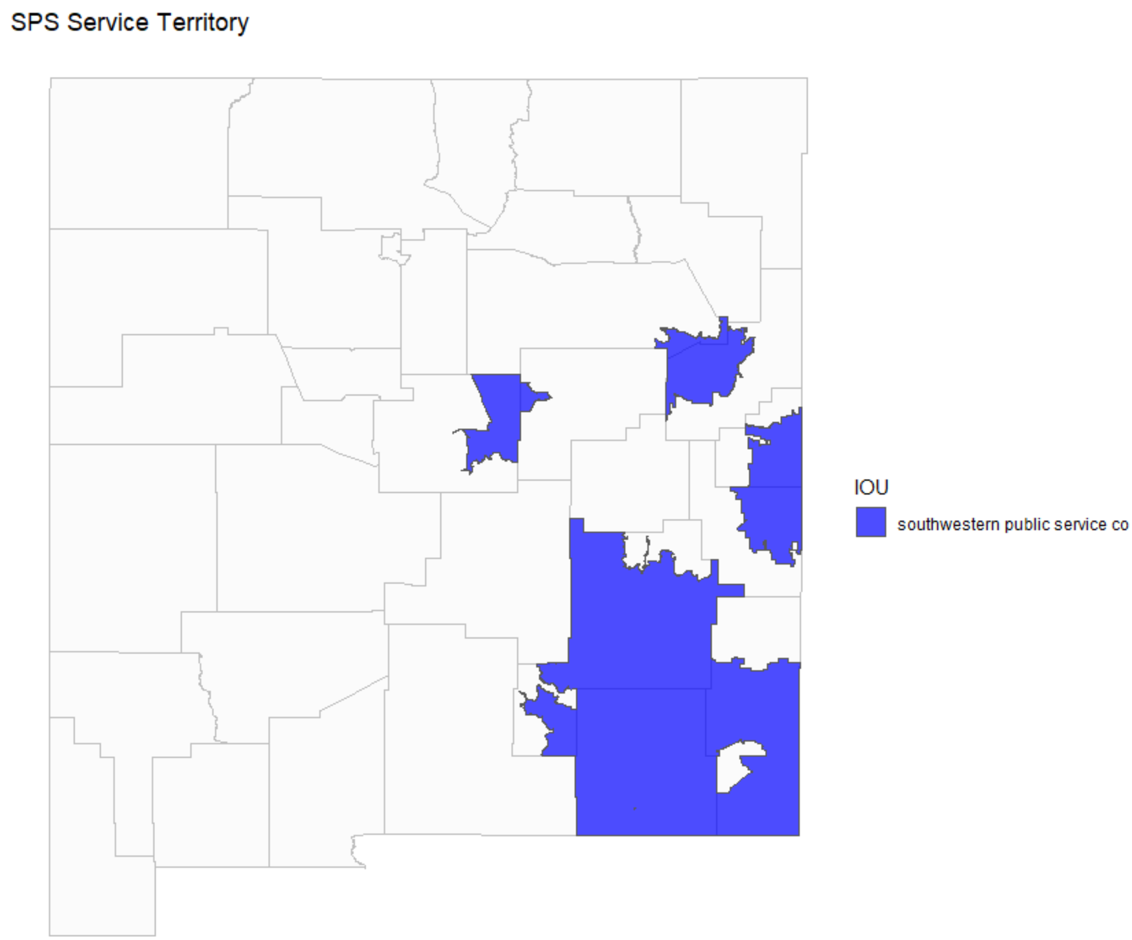


Data Source: 2023 sustainability report FERC

SOUTHWESTERN PUBLIC SERVICE COMPANY (SPS)

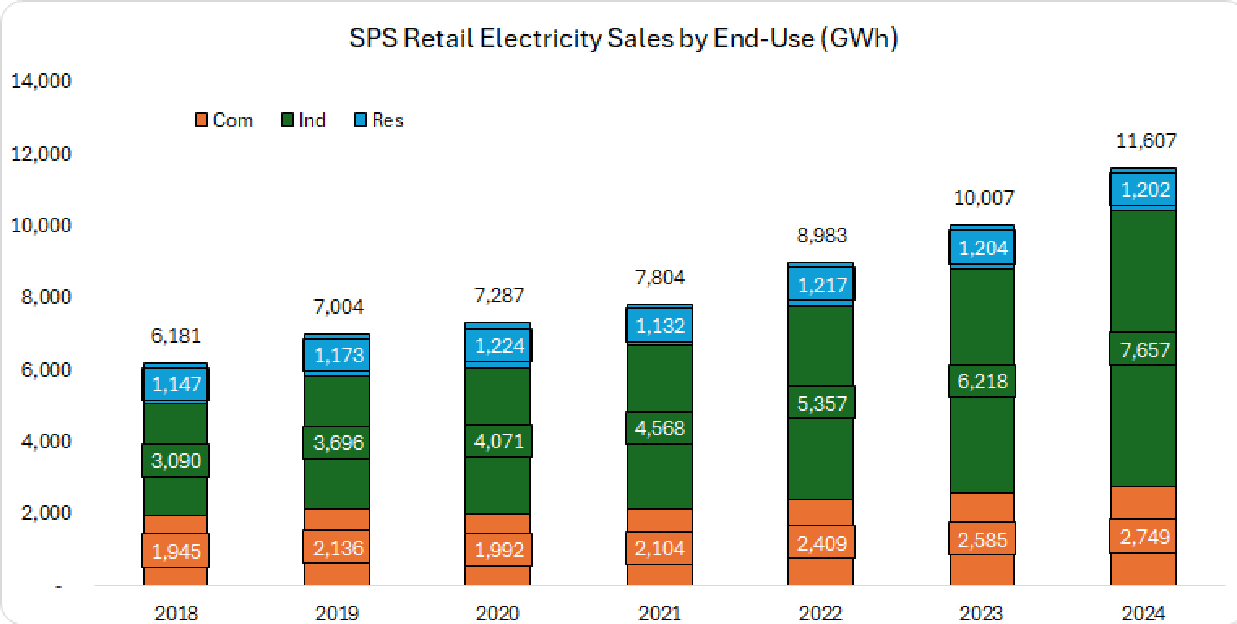
Southwestern Public Service Company (SPS) is a subsidiary of Xcel Energy. SPS services customers in the southeastern and eastern portion of New Mexico, including Carlsbad, Artesia, Clovis, and Roswell.

SPS Service Areas



SPS Retail Sales

SPS served over 11,600 GWh of electricity demand in 2024, the most of the state's three investor-owned utilities. Electricity demand at SPS has increased +88% since 2018 thanks to +148% industrial demand growth over the same period. Increasing industrial demand within SPS' service territory is largely the result of oil field electrification.

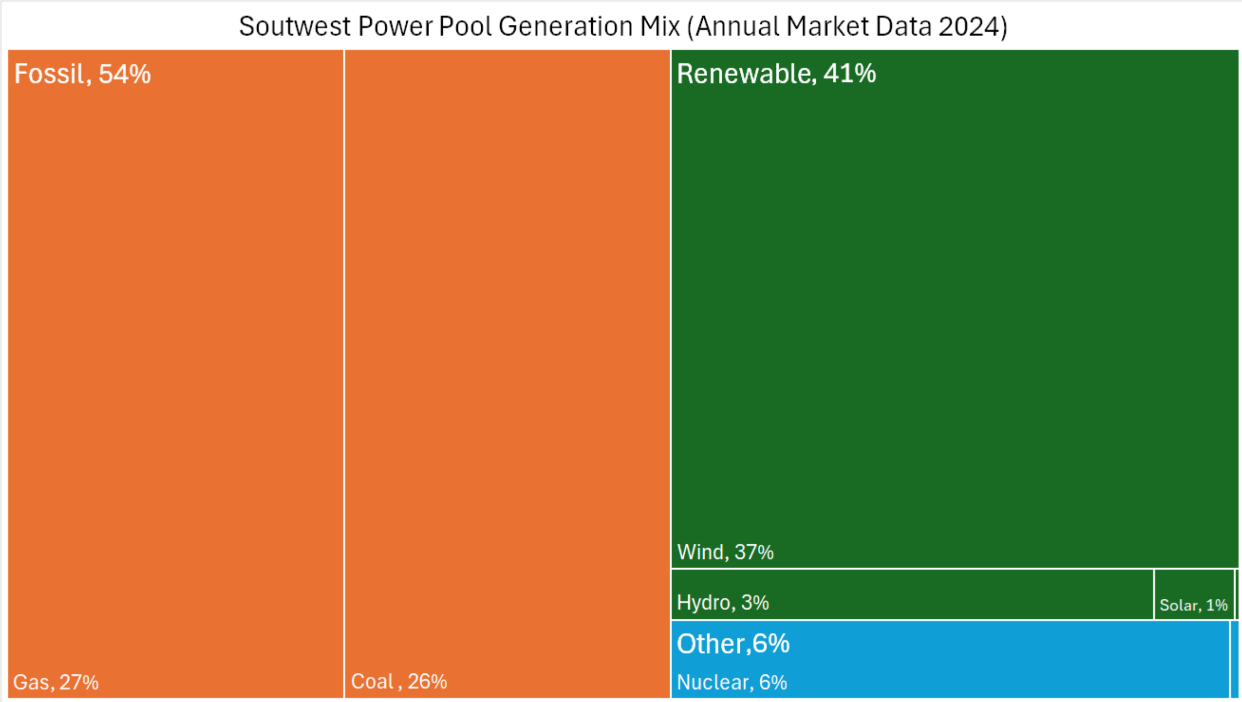


Data Source: EIA Form 861 2024

SPS Generation by Source (Southwest Power Pool)

SPS participates in the Southwest Power Pool (SPP) which is a regional transmission organization (RTO) that operates a wholesale market where merchant generators sell electricity to retail service providers like SPS. This market spans much of the central United States from New Mexico up to North Dakota's border with Canada.

According to market data from the Southwest Power Pool, 54% percent of market demand was served from fossil resources, mainly natural gas and coal. SPP also has a high renewable energy mix, sourcing nearly 40% of its electricity from wind. Finally, nuclear powers 6% of the market's baseload demand.



Data Source: EIA Form 930 2024

ELECTRIC COOPERATIVES

Utility Name	Counties Served
Central New Mexico Electric Co-op	Bernalillo, Chaves, De Baca, Guadalupe, Lincoln, San Miguel, Sandoval, Santa Fe, Socorro, Torrance, Valencia
Central Valley Electric Co-op	Chaves, Eddy, Lea, Otero
Columbus Electric Co-op	Grant, Hidalgo, Luna
Continental Divide Electric Co-op	Bernalillo, Cibola, McKinley, Sandoval, Valencia
Duncan Valley Electric Co-op	Grant, Hidalgo
Farmers Electric Co-op	Curry, De Baca, Guadalupe, Harding, Quay, Roosevelt, San Miguel
Jemez Mountains Electric Co-op	McKinley, Rio, Arriba, San Juan, Sandoval, Santa Fe
Kit Carson Electric Co-op	Taos, Colfax, Rio Arriba
Lea County Electric Co-op	Chavez, Eddy, Lea
Mora-San Miguel Electric Co-op	Guadalupe, Mora, San Miguel, Santa Fe
Navopache Electric Co-op	Catron
Northern Rio Arriba Electric Co-op	Rio Arriba
Otero County Electric Co-op	Chaves, Lincoln, Otero, Socorro
Rio Grande Electric Co-op	Eddy, Otero

Utility Name	Counties Served
Roosevelt County Electric Co-op	Chaves, Curry, De Baca, Roosevelt
Sierra Electric Co-op	Catron, Luna, Sierra, Socorro
Socorro Electric Co-op	Catron, Cibola, Sierra, Socorro, Valencia
Southwestern Electric Co-op	Harding, Quay, Union
Springer Electric Co-op	Colfax, Harding, Mora, San Miguel, Union
Tri-State Generation and Transmission Association, Inc.	Hidalgo, Grant, Luna, Dona Ana, Sierra, Catron, Socorro, Cibola, McKinley, San Juan, Rio Arriba, Sandoval, Santa Fe, Colfax, Union, Mora, Harding, San Miguel, Guadalupe, Torrance, Valencia, Bernalillo, De Baca, Chaves, Lincoln, Otero, Quay
Western Farmers Electric Co-op	Eddy, Chaves, Lea, Roosevelt, Curry, De Baca, Quay, San Miguel, Guadalupe, Harding

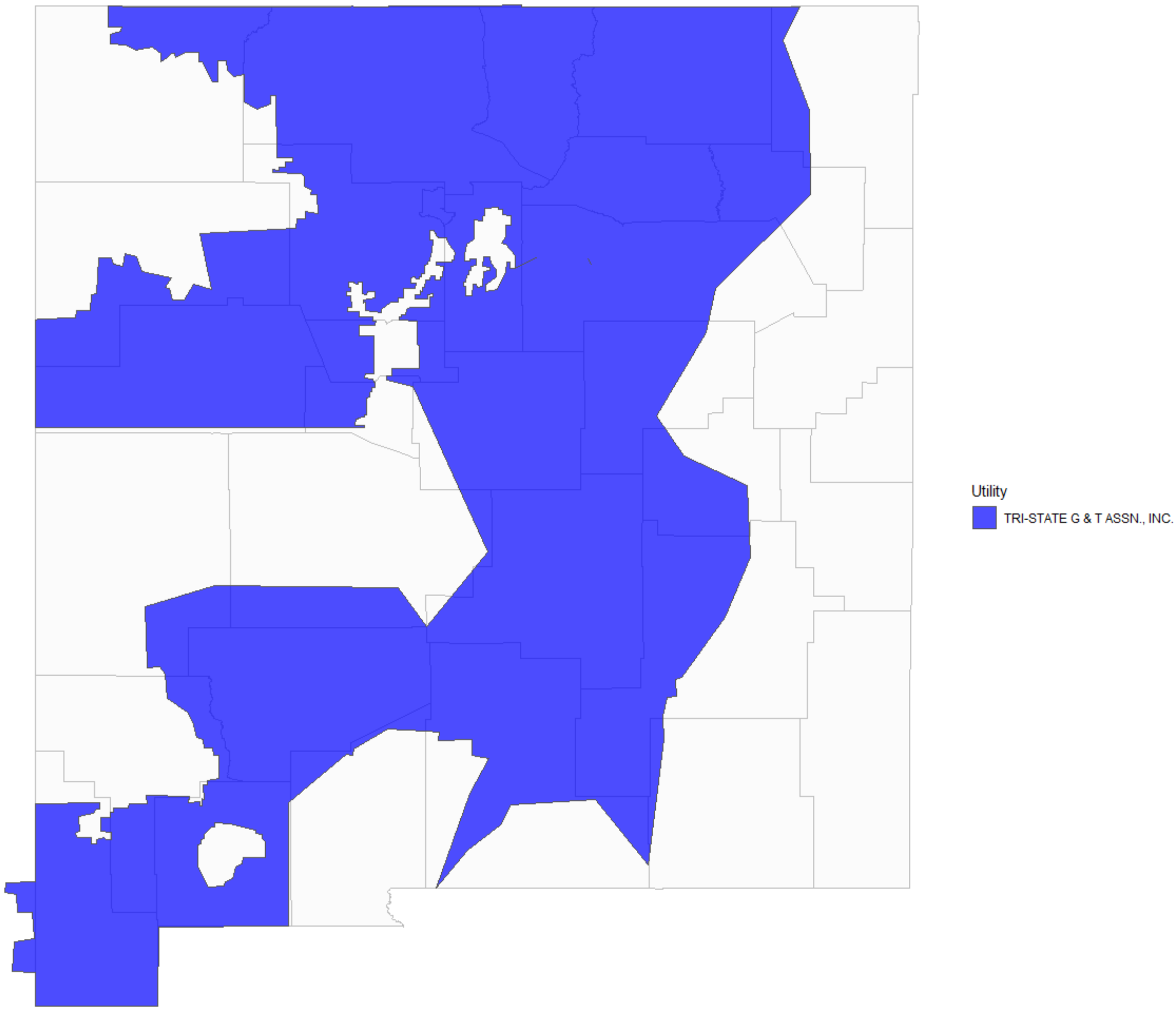
TRI-STATE GENERATION

Tri-State Generation Service Areas

Tri-State Generation and Transmission Association is a non-for-profit electric power supplier to 11 out of 19 electricity distribution cooperatives in New Mexico. The cooperatives are outlined in the following table.

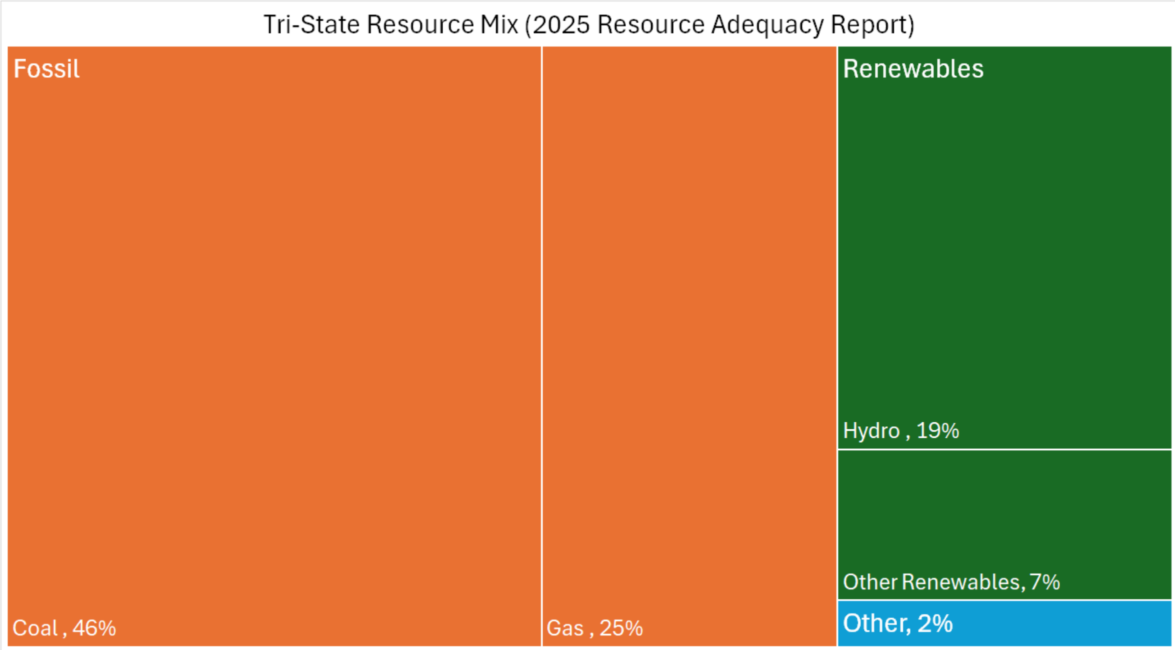
Tri-State Generation Supplied Cooperatives	
Central New Mexico Electric Cooperative	Columbus Electric Cooperative
Continental Divide Electric Cooperative	Jemez Mountains Electric Cooperative
Mora-San Miguel Electric Cooperative	Northern Rio Arriba Electric Cooperative
Otero County Electric Cooperative	Sierra Electric Cooperative
Socorro Electric Cooperative	Southwestern Electric Cooperative
Springer Electric Cooperative	

Tri-State Member Coop Territories



Tri-State Generation by Source

According to its 2025 Resource Adequacy Report, Tri-State generated roughly 70% of the electricity it supplied to its member coops from fossil resources (46% from coal and 25% from natural gas). Tri-state is also heavily reliant on federal hydropower from the Western Area Power Administration, with nearly one fifth of its generation mix coming from federal Colorado River Storage Project contracts.



Data Source: Tri-State G and T Cooperative Resource Adequacy Report 2025

TRIBAL UTILITIES

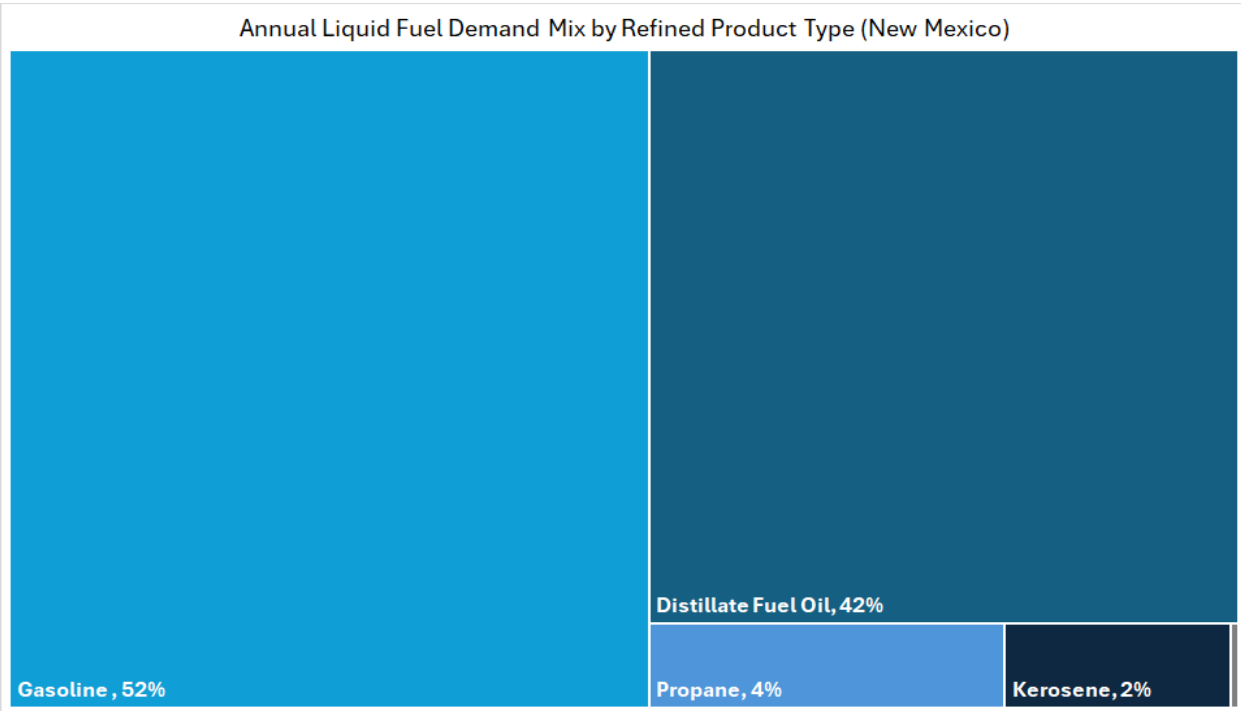
Utility Name
Pueblo of Acoma
Navajo Tribal Utility Authority
Jicarilla Apache Nation Power Authority

MUNICIPAL UTILITIES

Utility Name
City of Aztec
City of Farmington
City of Gallup
City of Truth or Consequences
Los Alamos Utilities
Raton Utilities
Town of Springer

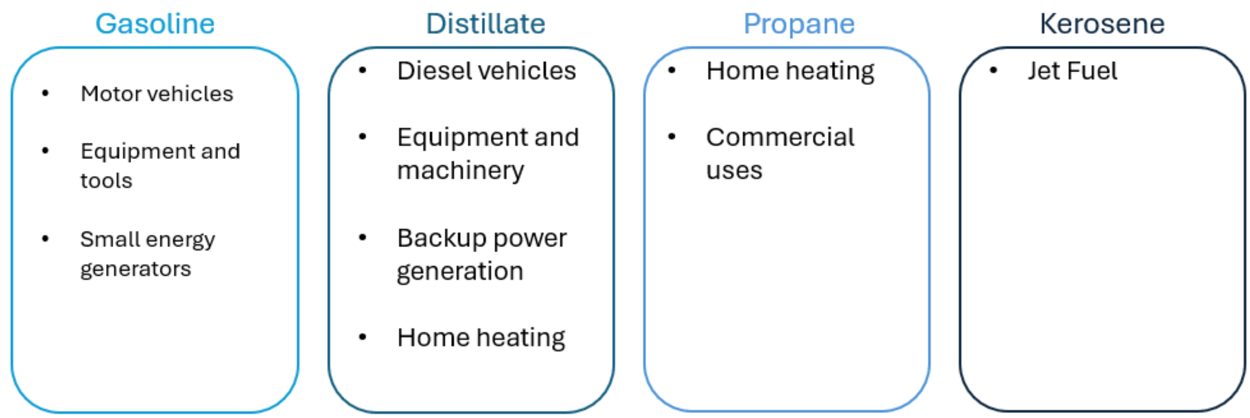
Liquid Fuels

New Mexico's petroleum product supply and demand, including gasoline, distillate, jet fuel, kerosene, residual fuel oil, propane, and crude oil are described in this section. These descriptions are sourced from EIA-782C: Monthly Report of Prime Supplier Sales of Petroleum Products Sold for Local Consumption. Each liquid petroleum fuel has diverse use cases listed below.



Data Source: EIA Form 782C

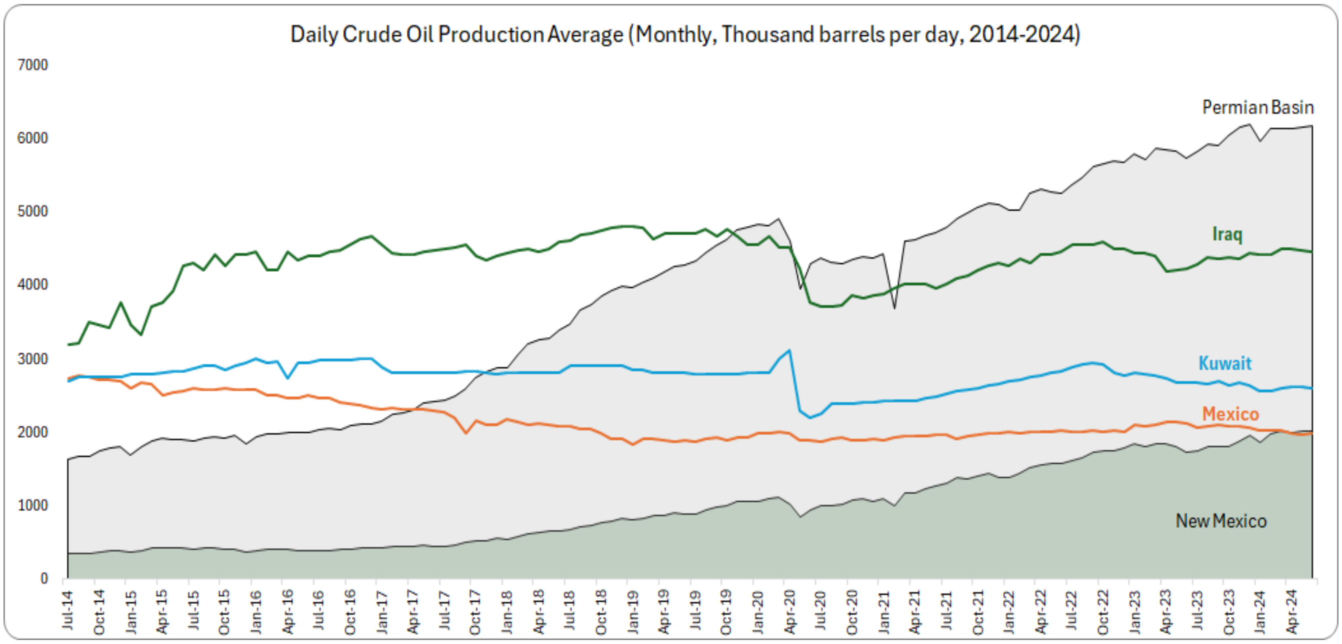
PETROLEUM PRODUCT USE CASES BY FUEL TYPE



Crude Oil

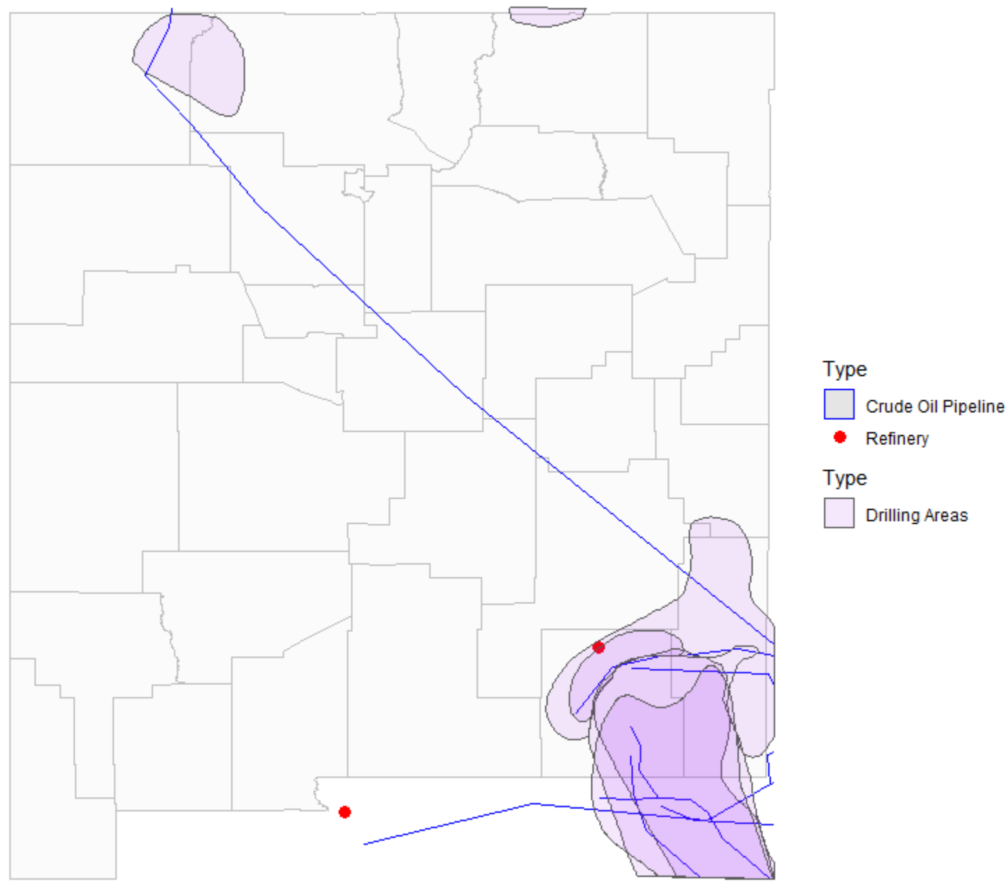
CRUDE OIL PRODUCTION

New Mexico produced more than 2 million barrels of crude oil per day on average in 2024, establishing it as the second largest onshore crude oil producing state in the country. New Mexico produced 14% of all crude oil in the country the same year. Crude oil production in New Mexico has increased +88% since 2020. 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. Permian Basin output has outpaced that of major oil producing nations such as Iraq (the world's 6th largest producer) since 2020. Crude oil production in New Mexico surpassed that of Mexico (the world's 12th largest producer) in mid-2024.



CRUDE OIL AND GAS MAP

Crude Oil Infrastructure in New Mexico

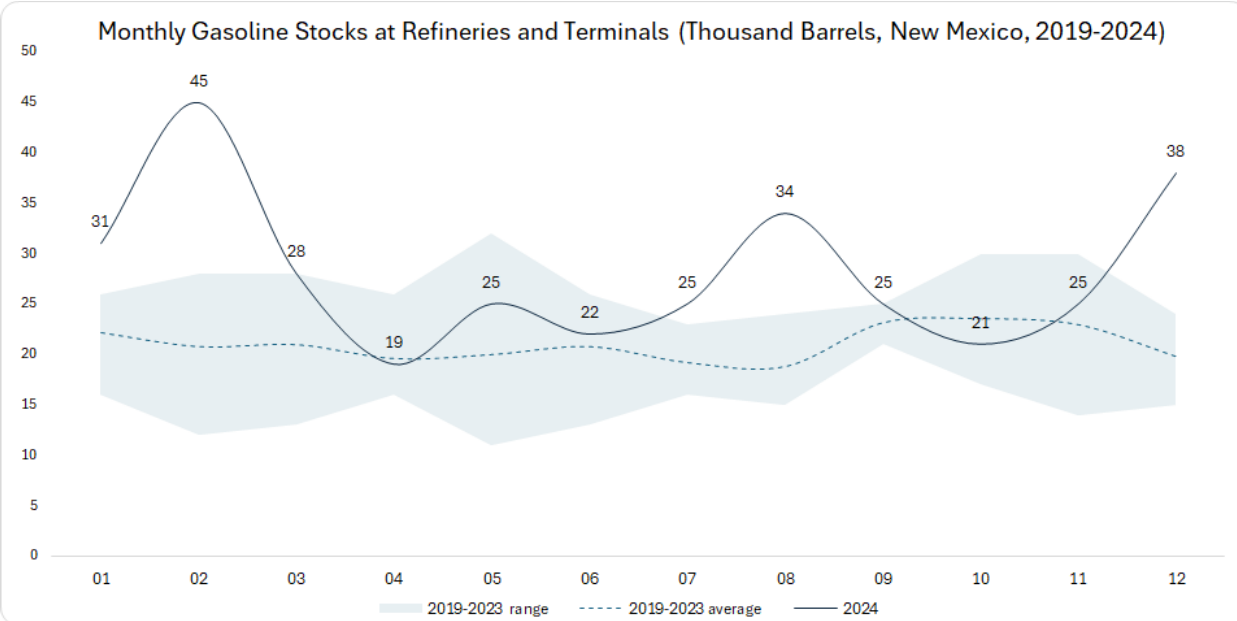


Data Source: U.S. Energy Information Administration, EIA Energy Atlas, 2023

Petroleum Products Supply

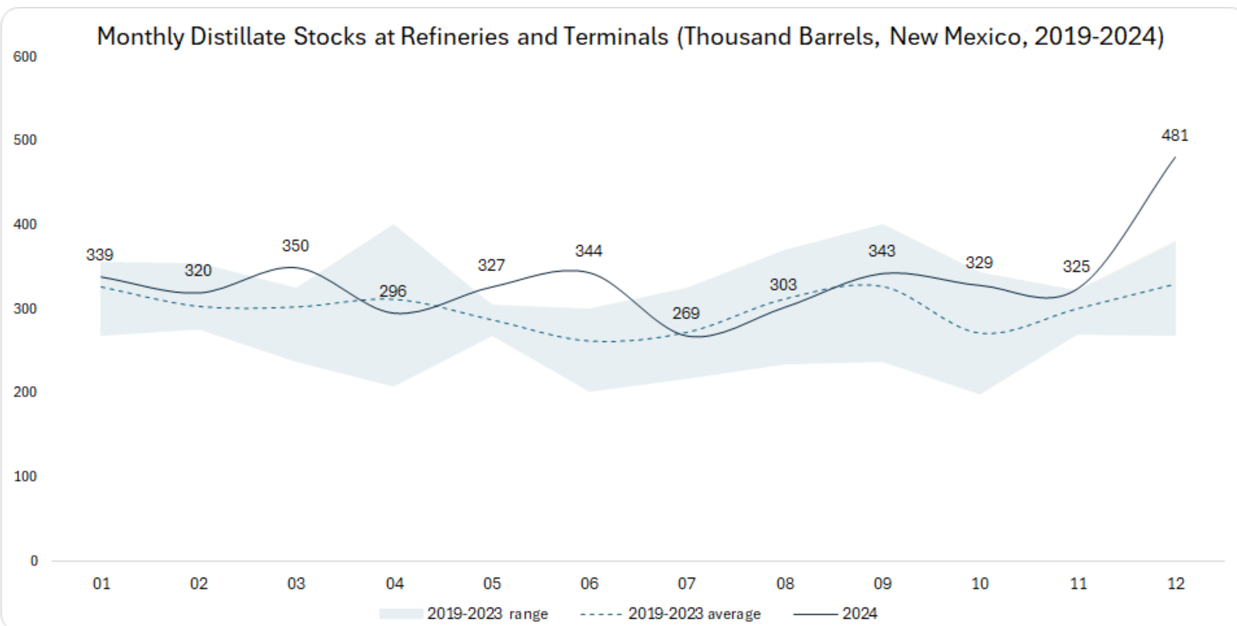
The charts below show monthly petroleum stocks for various petroleum products. Month over month reductions in the states fuel inventory indicate seasonal periods of high demand whereas sequential increases signal inventory builds. Seasonal inventory trends may indicate potential periods of elevated shortage risk or aid in resiliency planning.

GASOLINE



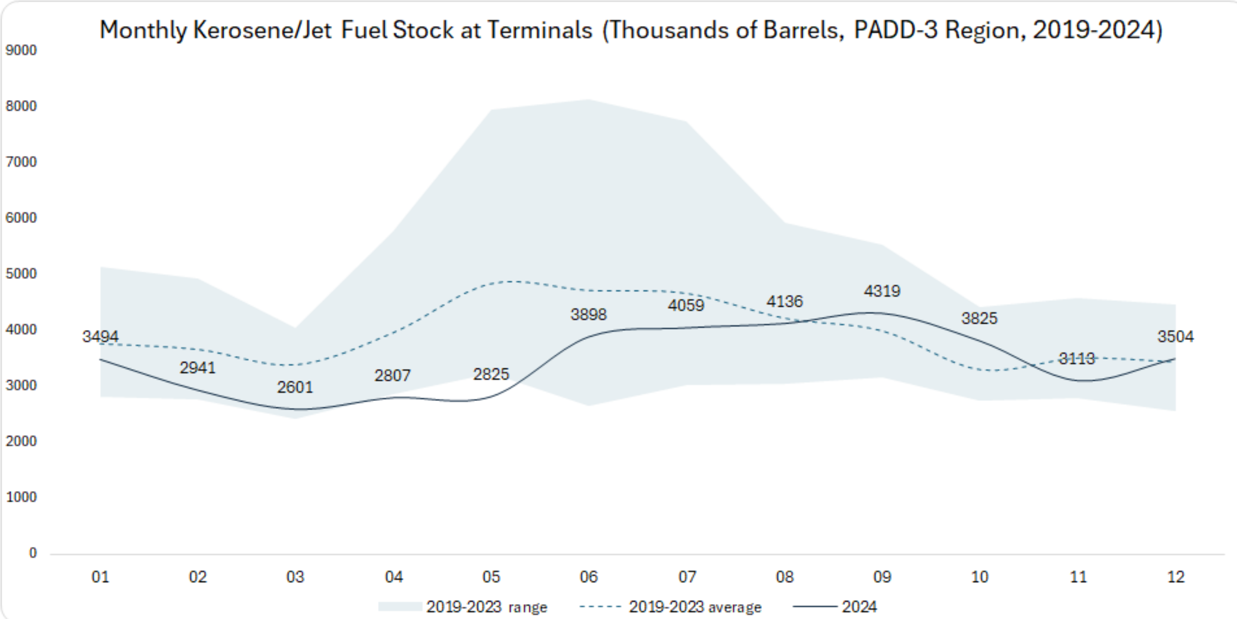
Data Source: U.S. Energy Information Administration, EIA Prime Supplier Sales, 2019-2024

DISTILLATE



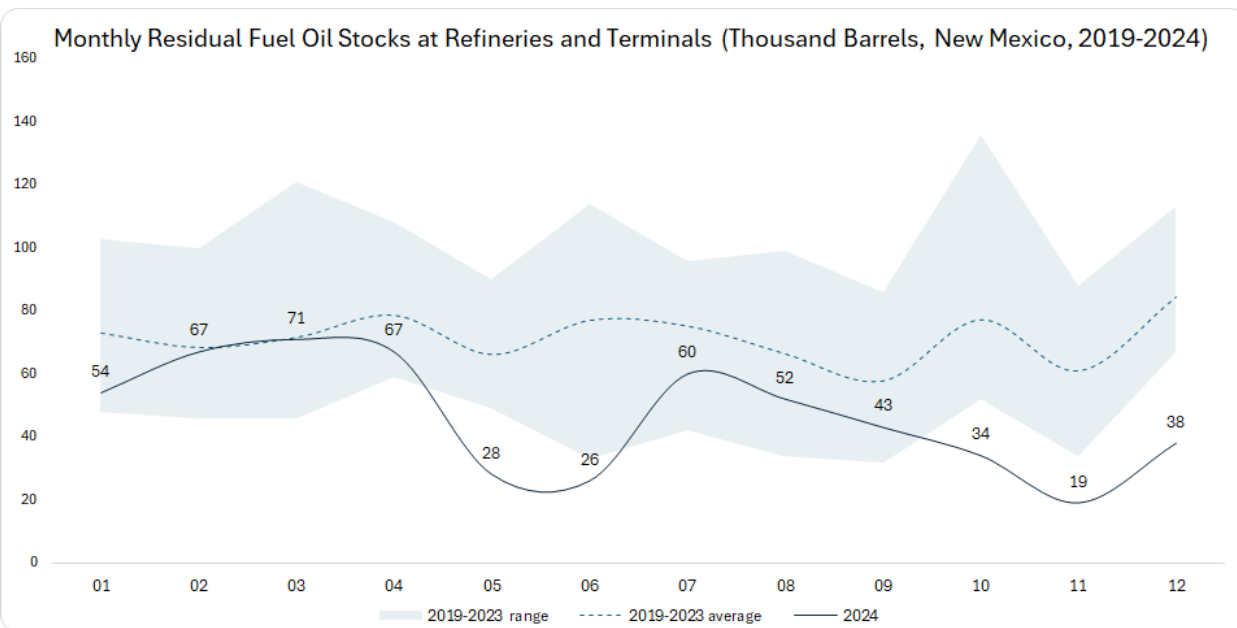
Data Source: U.S. Energy Information Administration, EIA Prime Supplier Sales, 2019-2024

JET FUEL / KEROSENE



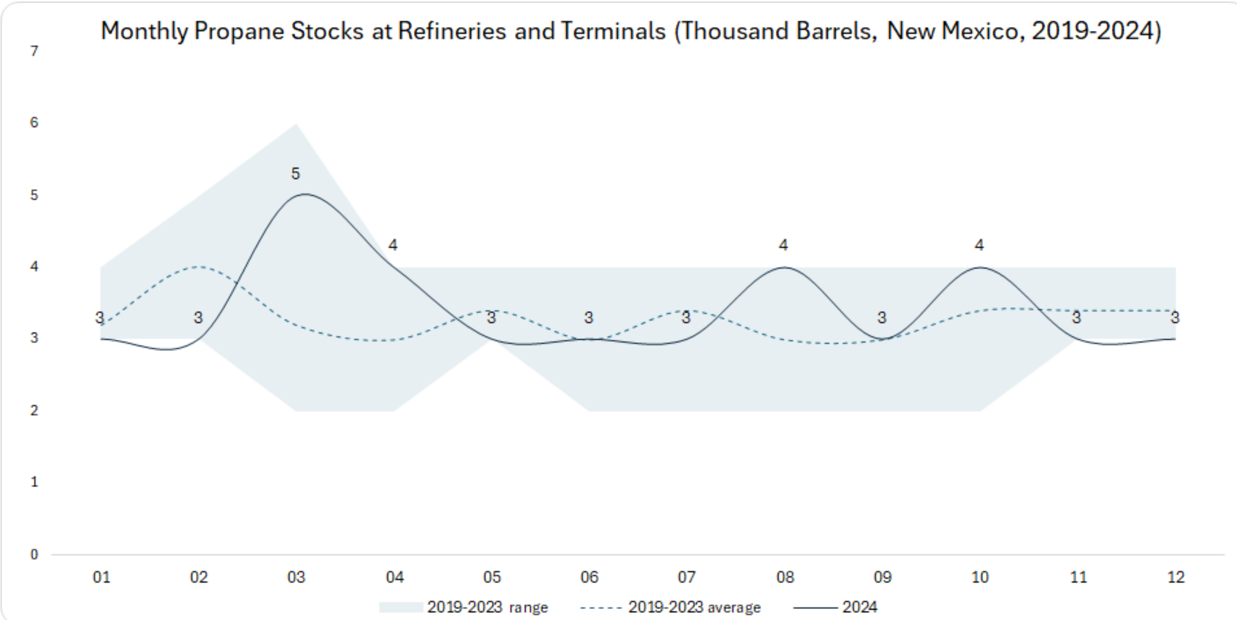
Data Source: U.S. Energy Information Administration, EIA Prime Supplier Sales, 2021.

RESIDUAL FUEL OIL



Data Source: U.S. Energy Information Administration, EIA Prime Supplier Sales, 2019-2024

PROPANE



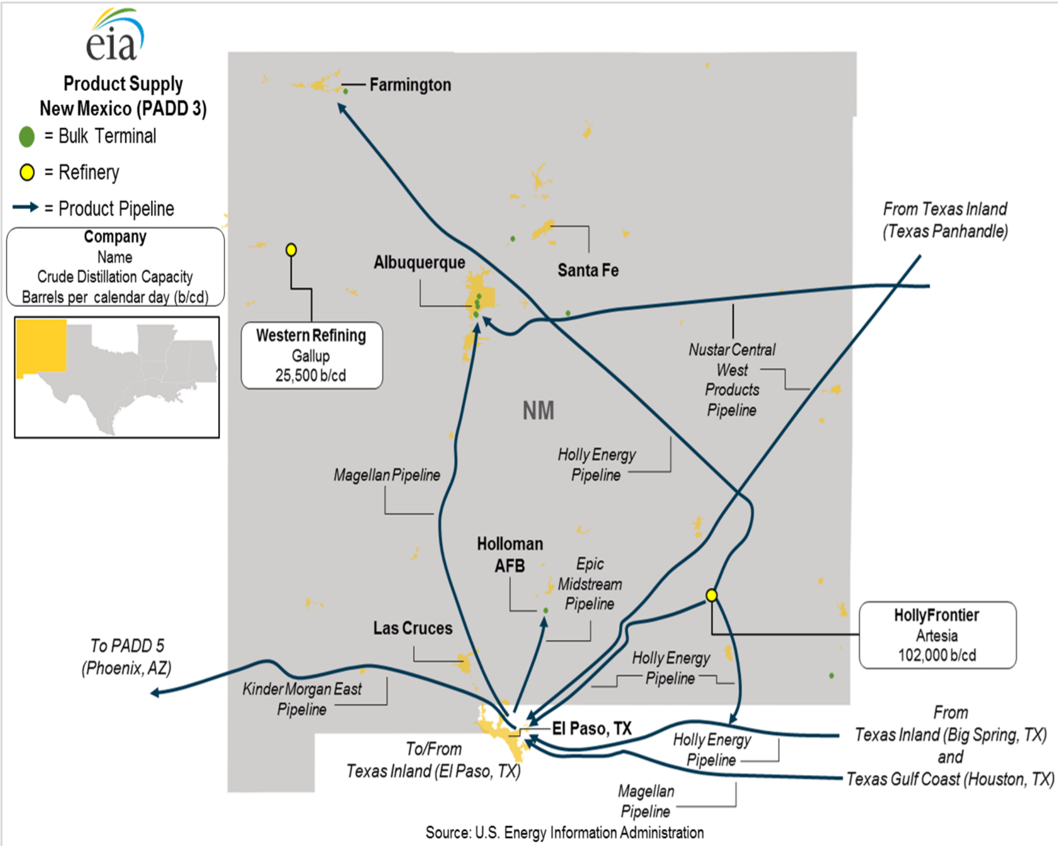
Data Source: U.S. Energy Information Administration, EIA Prime Supplier Sales, 2019-2024

State Fuel Specifications

The State of New Mexico Administrative Codes (NMAC) Title 20 – Environmental Protection, Chapter 2 – Air Quality (20.2) addresses Air Quality standards and provisions. Petitioners requesting waivers from air quality standards should review NMAC codes 20.2.1 – 20.2.350 for appropriate information regarding waivers of NMAC codes.[7] A fuel waiver is a temporary waiver of certain controls or prohibitions on the use of a fuel or a fuel additive. In the event of a fuel supply emergency, requirements may be waived temporarily by the Secretary of the New Mexico Environment Department, if doing so will alleviate a fuel supply emergency and is in the public interest.

[7] New Mexico Commission of Public Records. 2021. *CHAPTER 2 – AIR QUALITY (STATEWIDE)*

TRANSPORTATION FUELS STUDY REGIONAL INFRASTRUCTURE MAP

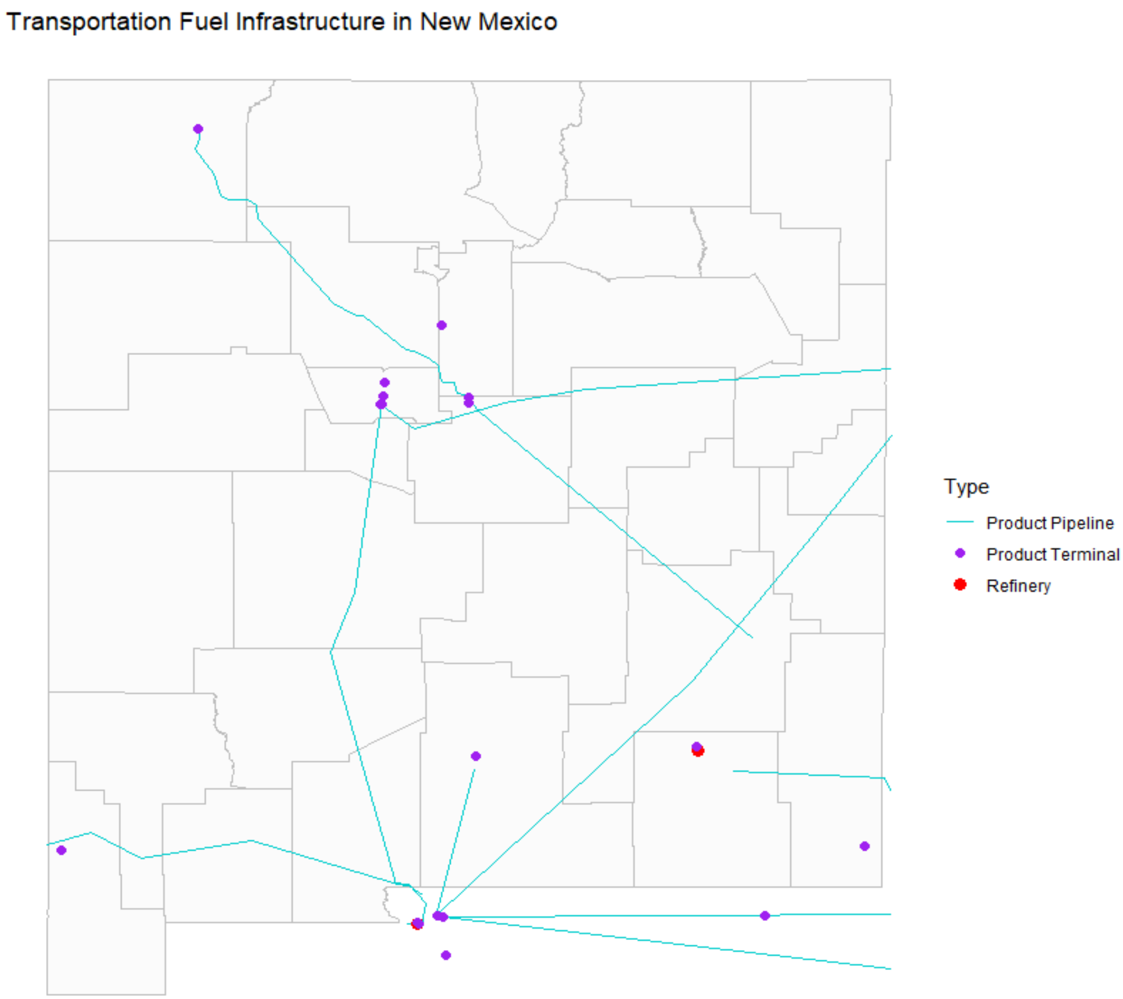


REFINERIES

Owner	Location	Crude Oil Capacity (b/cd)	Crude Pipelines Feeding	Product Takeaway Pipelines
HollyFrontier Corporation	Artesia, NM	110,000	Holly Energy Pipeline	Holly Energy Pipeline

Data Source: U.S. Energy Information Administration, EIA Refinery Capacity Report, 2021.

MAP OF TRANSPORTATION FUEL INFRASTRUCTURE



Data Source: U.S. Energy Information Administration, EIA Energy Atlas, 2022

KEY REFINED PRODUCT PIPELINES

Owner	Line Name	Products	Origin	Destination
Kinder Morgan	Kinder Morgan East Pipeline	Natural Gas, Petroleum	Big Spring, TX	Phoenix, AZ
Magellan Midstream Partners, L.P.	Magellan Pipeline	Refined Petroleum Products	Houston, TX	Albuquerque, NM
NuStar	NuStar Central West Products Pipeline	Crude Oil	Amarillo, TX	Albuquerque, NM; El Paso, TX

Epic Midstream	Epic Midstream Pipeline	Crude Oil, Natural Gas	El Paso, TX	Holloman Air Force Base, NM
Holly Frontier	Holly Energy Pipeline	Crude Oil	Artesia, NM	El Paso, TX; Farmington, NM

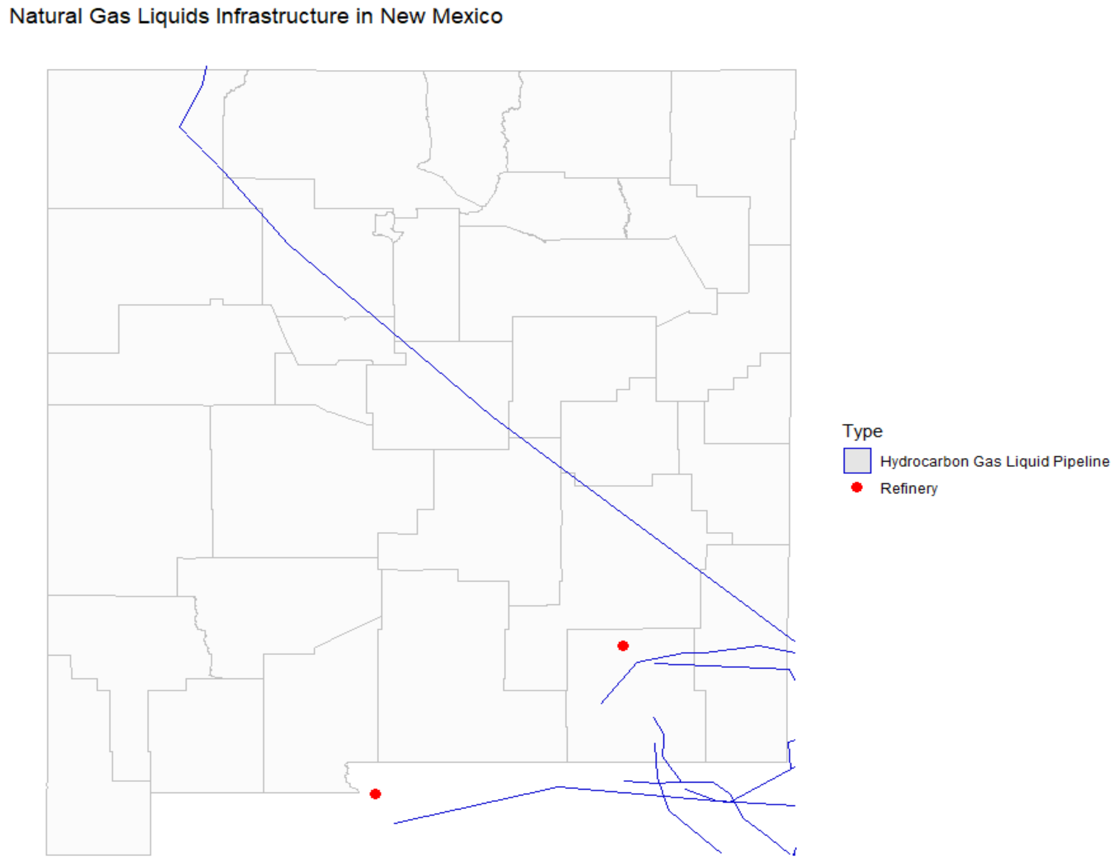
Data Source: U.S. Energy Information Administration, EIA Transportation Fuels Markets Reports, 2021.

KEY TERMINALS

Owner	City
Andeavor Logistics	Bloomfield, Wingate, Albuquerque, Lea County
NuStar Energy	Rosario, Albuquerque
Holly Energy	Moriarty
NK Asphalt Partners	Albuquerque, Artesia
Phillips 66 Pipeline LLC	Albuquerque
South Florida Materials Corporation	Albuquerque
Dansk Wholesale	Road Forks
IMTT EPIC LLC	Alamogordo

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

MAP OF NATURAL GAS LIQUIDS INFRASTRUCTURE



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

TABLE OF KEY NATURAL GAS LIQUIDS PIPELINES

Owner	Line Name	Products	Origin	Destination
Enterprise Products	HGL Pipeline	Natural Gas Liquids	Martin, TX	Rock Springs, WY

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

Liquid Fuels Providers

The following list identifies all liquid fuel providers in New Mexico. The NM PRC Pipeline Safety Bureau is responsible for administering federal regulations on the safe, reliable, and environmentally sound transportation of energy and other hazardous materials established by the U.S. Pipeline and Hazardous Materials Safety Administration (PHMSA). NM PRC Is responsible for licensing crude oil, natural gas, and oil and gas product pipelines as well as conducting periodic inspections of intrastate energy provider integrity management plans to confirm compliance procedures are identified and followed. Additionally, the Pipeline Safety Bureau reviews energy operator emergency operations plans and receives real-time updates on reportable incidents and accidents. The Pipeline Safety Bureau partners with the 811 Call Center that serves as a communication hub and location coordinating service for all companies and individuals planning ground-disturbing operations. In New Mexico, energy operators are required to notify the 811 Call Center two-days in advance of any ground-disturbing construction to indicate where the construction will occur.

Providers	
3 Nights Operating LLC	Harvard Petroleum Company, INC
801 LLC	Hilcorp Energy Company
Abo Empire, LLC	Judah Oil
Acacia Operating Company, LLC	KEM Ventures, LP
Action Oil CO Inc	Marathon Oil Permian LLC
Addington, LLC	Matador Production Company
Ameredev Operating, LLC	Maverick Operating, LLC
Americo Energy Resources LLC	McGowan Working Partners, LLC
Amtex Energy Inc	MorningStar Operating LLC
Apache Corporation	Moss Petroleum Co
Armstrong Energy Corp	Murchison Oil and Gas, LLC
Aspen Oil Inc	Occidental Permian LTD
Benson-Montin-Greer Drilling Corp	Phoenix Hydrocarbons Operating Corp.
Burnett Oil Company	Pitts Energy Co
Cambrian Management LTD	Redwood Operating LLC
Catena Resources Operating, LLC	Rim Operating Inc
Cattle LLC	Sagebrush Oil Inc
CFM Oil, LLC	San Juan Resources, Inc
Cimarex Energy Co.	Saxet Oil Corporation
CML Exploration, LLC	Schalk Development Co
C O Fulton	SCO Permian, LLC
Contango Resources, LLC	Seguro Oil and Gas, LLC
Cross Border Resources, INC.	Shackelford Oil Co
Cross Timbers Energy, LLC	SIMCOE LLC
Devon Energy Production Company, LP	Southwest Royalties Inc
Dinero Operating Co	Sozo Natural Resources Inc
DJR Operating, LLC	Spur Energy Partners LLC
DKD Production, LLC	Stevenson Oil Company
D Operating Inc	Sundown Energy LP

Driftwood Oil, LLC	Sunlight Exploration, Inc.
Eastland Oil CO	Tandem Energy Corporation
Enerdyne, LLC	Texland Petroleum-Hobbs, LLC
EOG Resources Inc	Texon Oil Company, Inc.
Fae II Operating LLC	Vintage Drilling, LLC
Forty Acres Energy, LLC	Warren American Oil
Four Corners Exploration Co	Watts Inc
Franklin Mountain Energy LLC	Whiting Oil and Gas Corporation
Grand Banks Energy CO	Yarbrough Oil LP
Gulf Exploration	Yates Energy Corp
Harlow Enterprises INC	Yates Industries LLC

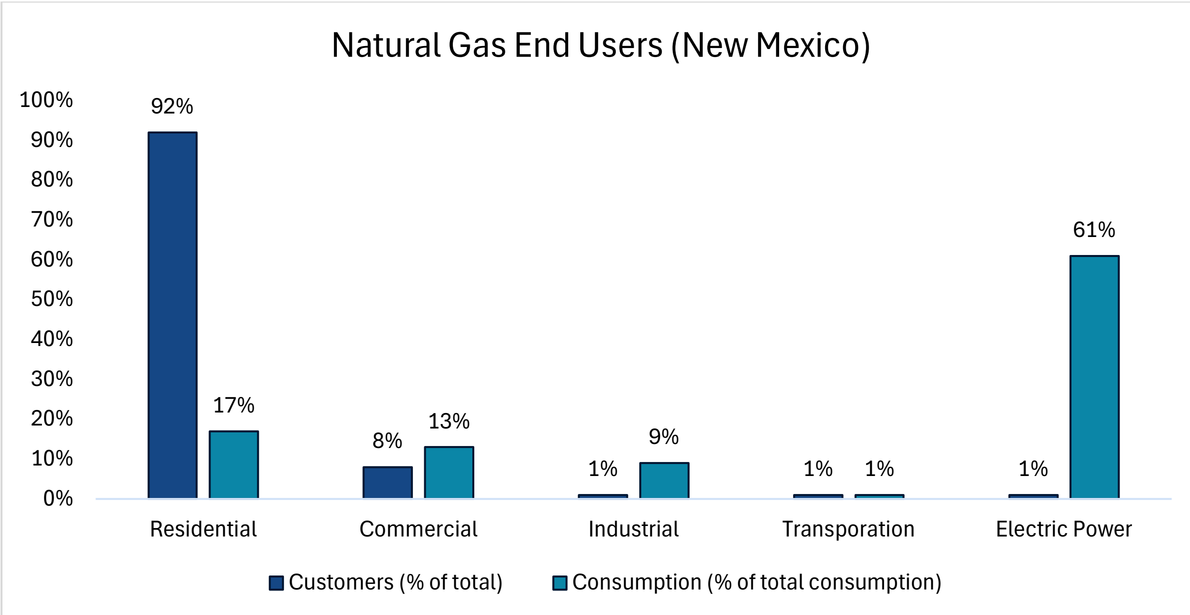
Natural Gas

New Mexico is the fifth largest natural gas producing state in the U.S. and contains 7% of the nation's proven natural gas reserves. From 2018 - 2022, New Mexico produced over 1.5 million cubic feet of dry natural gas on average and utilized an average of under 268,000 cubic feet of that production per year.[8] New Mexico is a net producer of natural gas, utilizing under 17% of the natural gas it produces on average, and exporting over 1.3 million cubic feet of dry natural gas each year.

Consumption

Within the natural gas sector, 92% of customers are residential, 8% are commercial, and less than one percent are industrial, transportation, and electric power. In terms of consumption, 61% of natural gas sold in New Mexico is consumed by electric power, 17% by residential, 13% by commercial, 9% by industrial, and less than one percent by transportation.

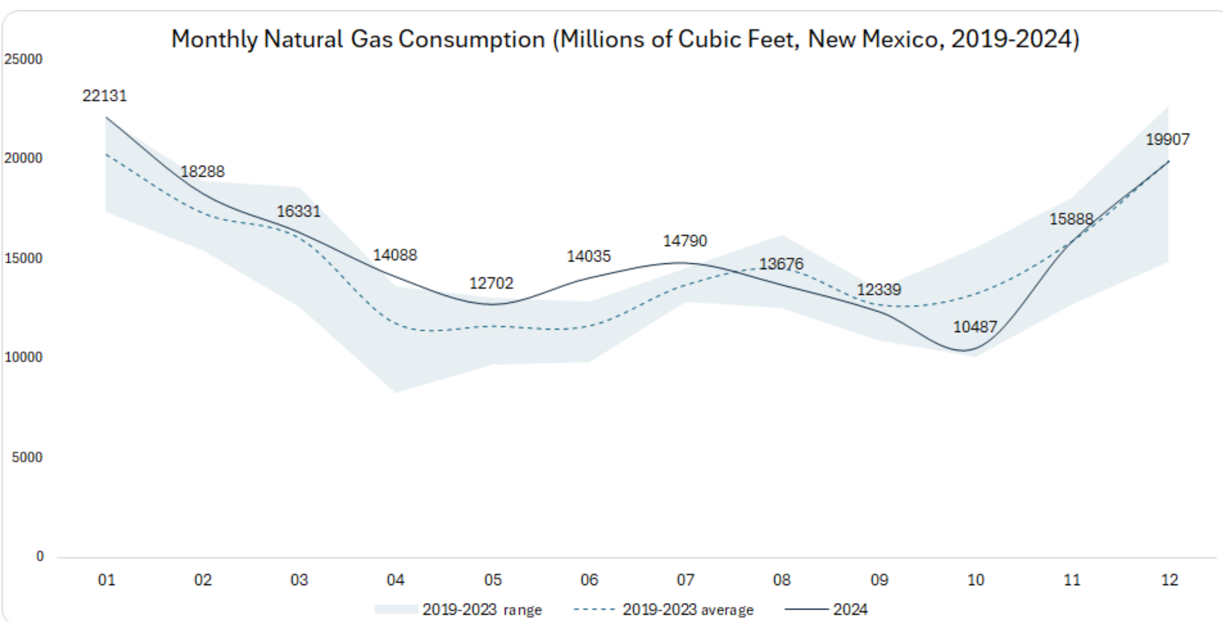
[8] U.S. Energy Information Administration, 2022. Form EIA-914 "Monthly Natural Gas Production Report". https://www.eia.gov/dnav/ng/ng_prod_sum_a_EPG0_FPD_mmcf_a.htm



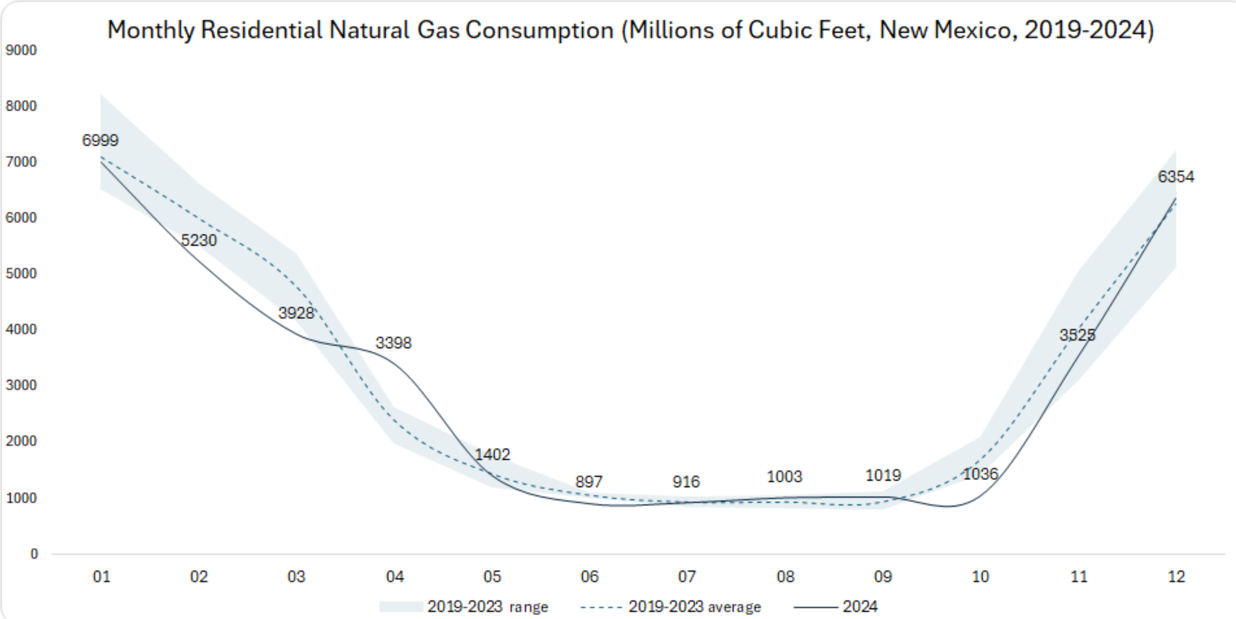
Data Source: U.S. Energy Information Administration , EIA Natural Gas Consumption by End Use

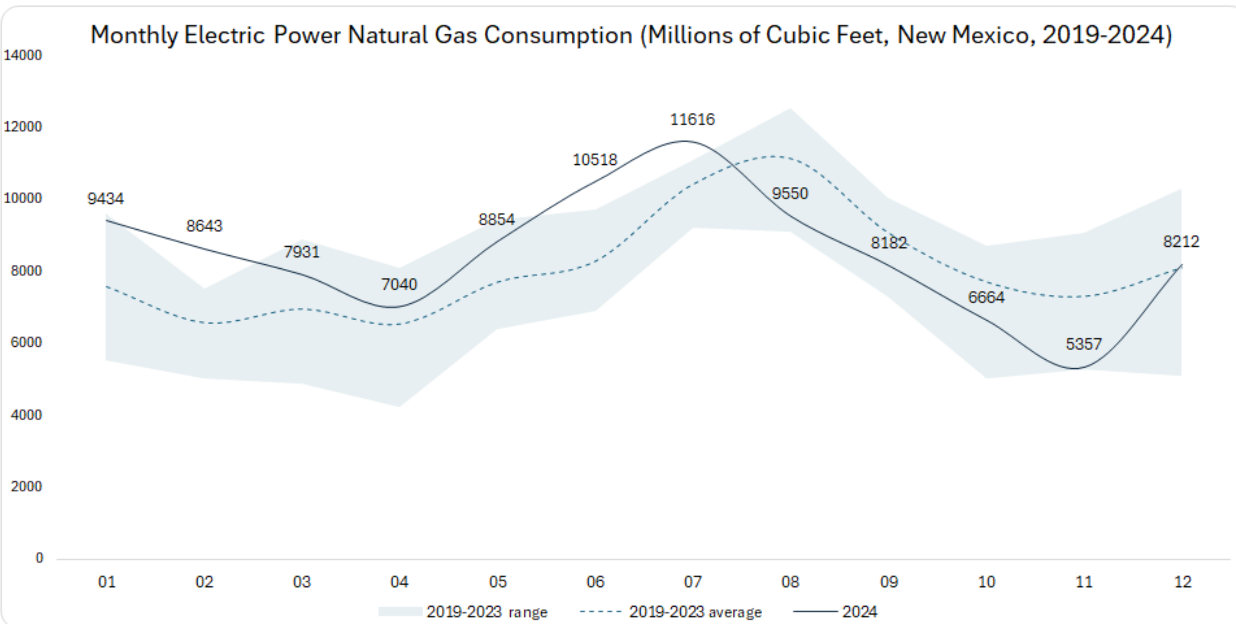
Total Market Natural Gas Demand Seasonality

Like electricity, natural gas demand also follows seasonal trends. Consumption peaks in the winter (when residential heating demand is the highest). There is also a secondary peak in the summer when natural gas power plants are operating to meet peak electricity demand.



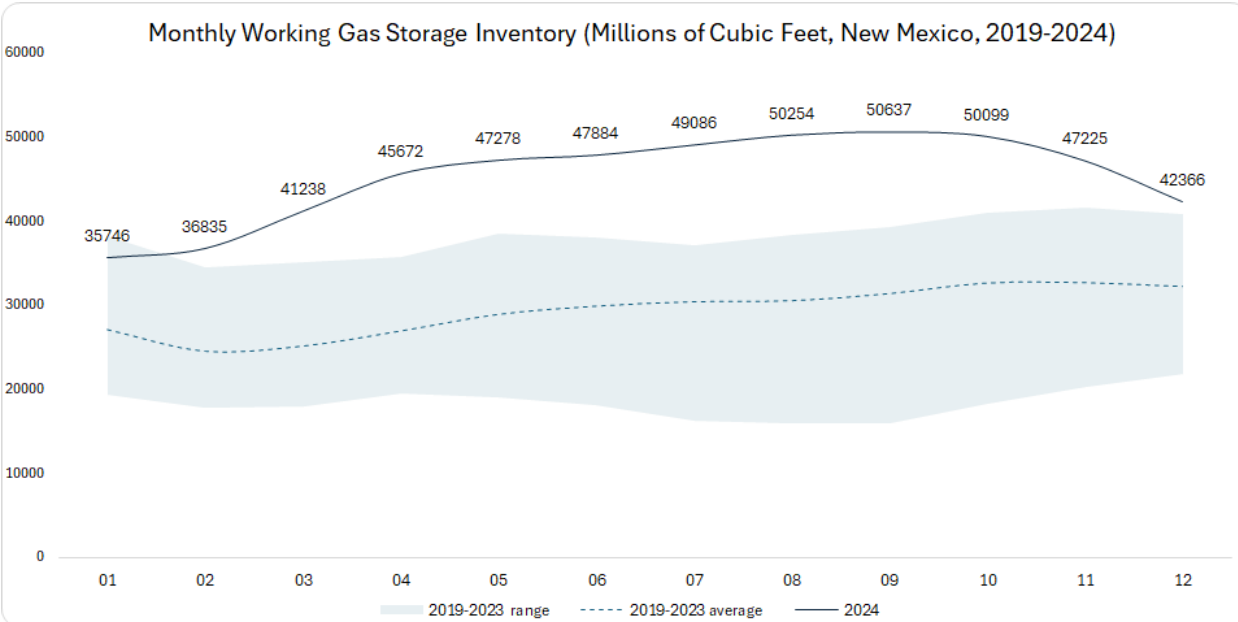
Data Source: U.S. Energy Information Administration, EIA Natural Gas Consumption by End , 2019-2024.





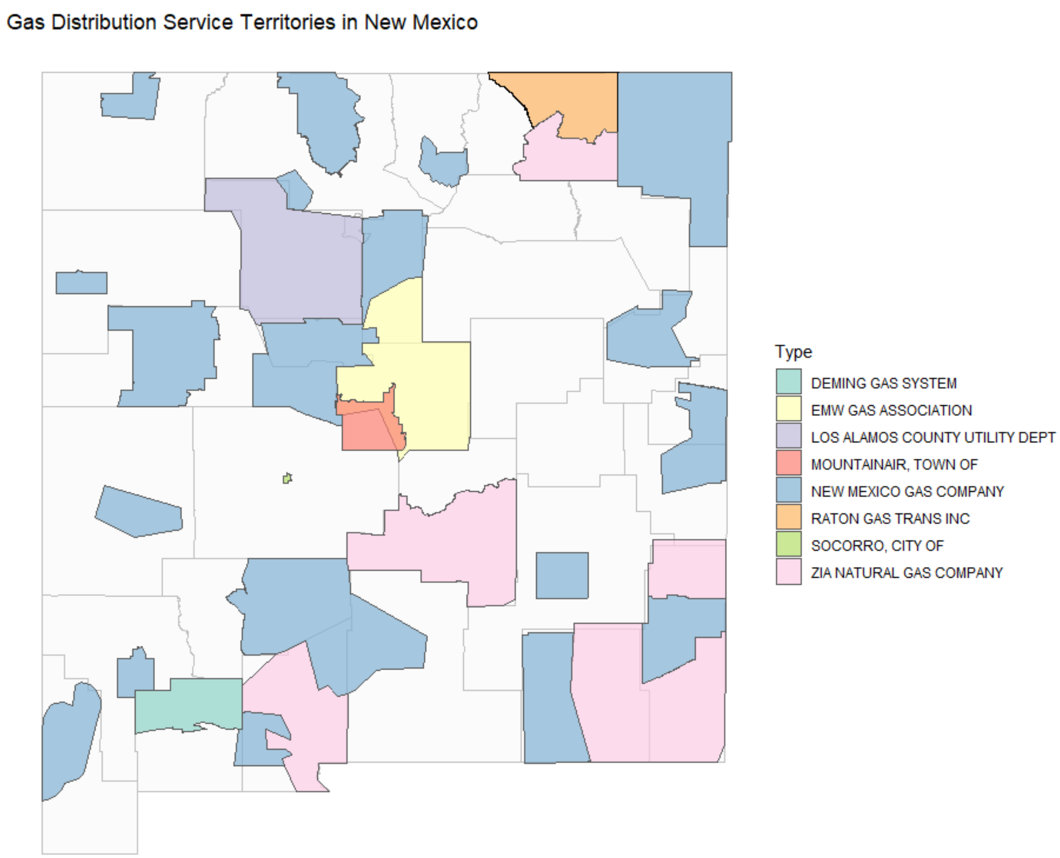
Natural Gas Inventory Trends

Annual working gas stocks are normally built through the fall and depleted in winter to meet residential heating demand. In 2024, New Mexico's natural gas inventory build surpassed prior trends due to a federal pause on liquified natural gas (LNG) exports. Produced gas that otherwise would have been shipped abroad increased supply in domestic markets such as New Mexico.



Data Source: U.S. Energy Information Administration, EIA Natural Gas Storage, 2019-2024.

Map of Major Natural Gas Distribution Utilities



Data Source: U.S. Energy Information Administration, EIA Energy Atlas, 2025.

Natural Gas Distribution Companies

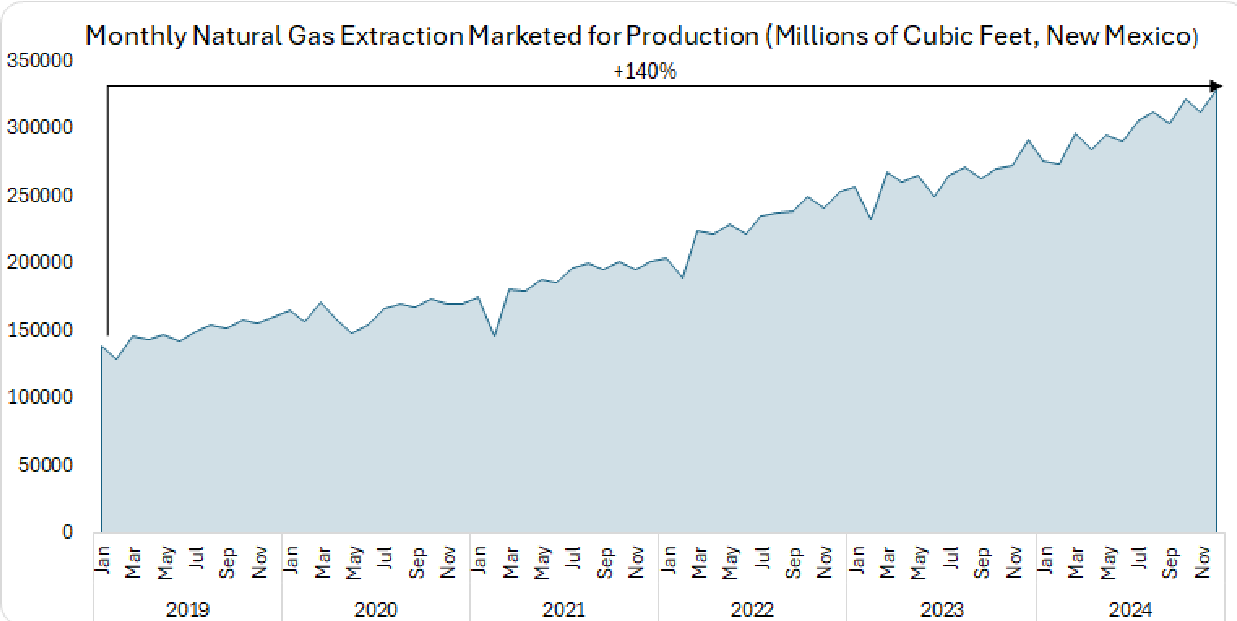
Gas Distribution Company	Delivery Volume (MMcf/d)
Clean Energy	106,293
Corona Village	9,338
Deming Gas System	490,111
Eastern New Mexico Natural Gas	84,842
El Paso Natural Gas Company LLC	65,413,823
EMW Gas Association	499,147
Las Cruces Municipal Gas	3,213,578
Las Vegas Natural Gas Department	612,386
City of Lordsburg	58,879
City of Los Alamos	803,398
Markwest New Mexico	46,661,944
Town of Mountainair	29,524
Natural Gas PL Company of America LLC	3,170
Navajo Tribal Utility Authority	1,702,130
New Mexico Gas Company	75,616,142
Raton Natural Gas	326,061
City of Socorro	329,736
Transwestern Pipeline Company	3,568,587
Wagon Mound Gas System	8,408
Zia Natural Gas	3,023,087

Data Source: U.S. Energy Information Administration, EIA-176, 2022.

Supply

NATURAL GAS PRODUCTION

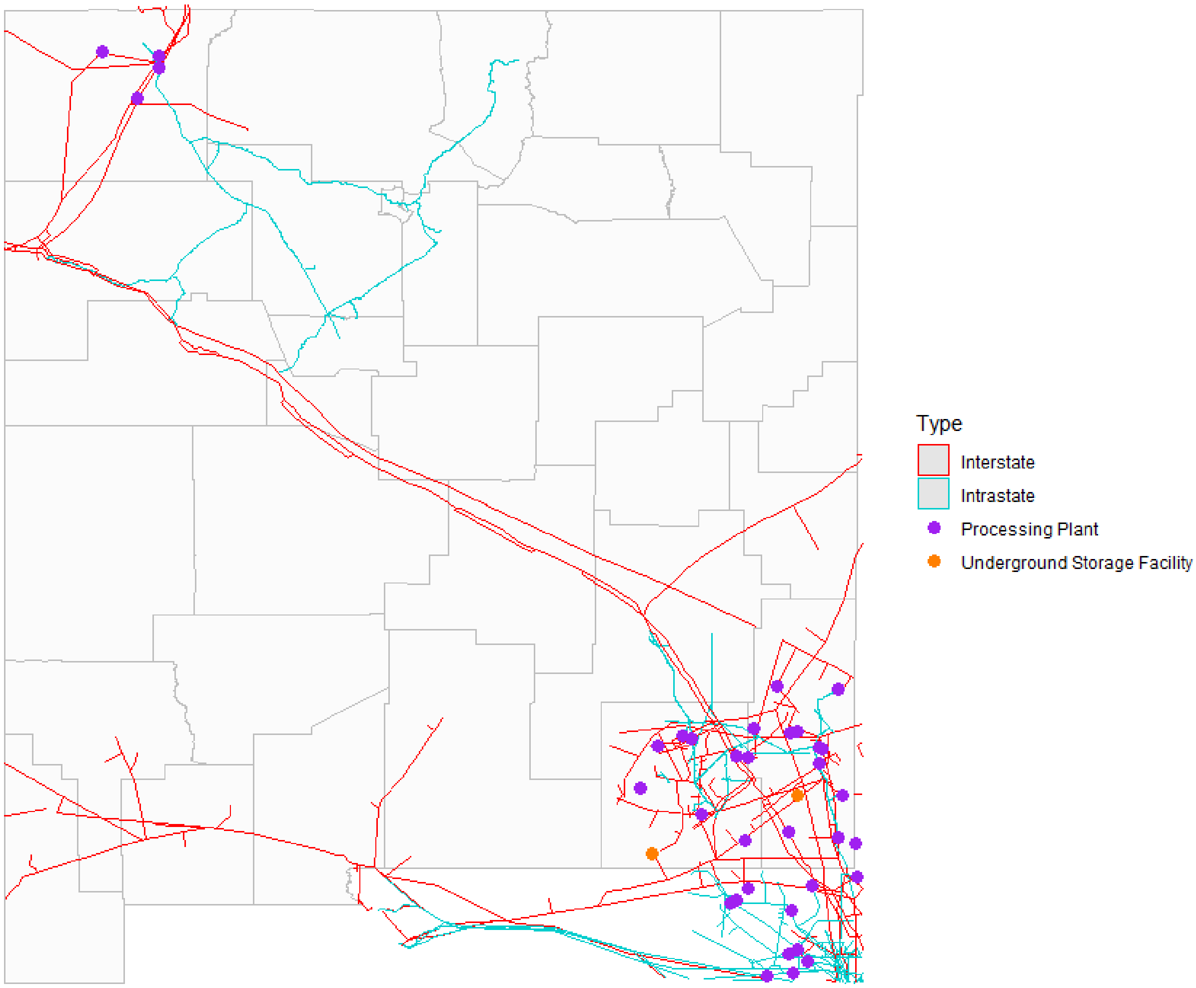
Monthly natural gas extraction has increased +140% since 2019. Natural gas withdrawals marketed for production averaged 3.6 trillion cubic feet in 2024.



Data Source: U.S. Energy Information Administration, EIA Natural Gas Gross Withdrawals and Production, 2022.

NATURAL GAS MAP

Natural Gas Infrastructure in New Mexico



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

KEY NATURAL GAS PIPELINES

Pipeline	Owner	Owner Location	Capacity (MMcf/d)
El Paso Natural Gas Company	Kinder Morgan	Houston, TX	4,919
Double E Pipeline	Summit Midstream Partners	Houston, TX	1,350
Transwestern Pipeline	Energy Transfer Partners	Dallas, TX	1,226

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

STORAGE FACILITIES

Company Name	Reservoir Name	County	Working Gas Capacity (Mcf)	Maximum Daily Delivery (Mcf/d)

El Paso Natural Gas Company	Morrow	Eddy	44,038,000	250,000
Enstor Grama Ridge Storage and Transportation	Morrow	Lea	15,700,000	200,000

PROCESSING PLANTS

Plant Name	Owner	County	Plant Capacity (MMcf/d)	Storage Capacity (MMcF)
Artesia	DCP Midstream	Eddy	90	2,573
Buckeye CO2 Plant	Chevron USA, Inc.	Lea	55	700
Chaco Gas Plant	Enterprise Field Services LLC	San Juan	600	12,113
Denton Gas Plant	Davis Gas Processing Inc	Lea	20	750
East Vacuum Liquid Recovery Plant	ConocoPhillips	Lea	45	1,355
Eunice	DCP Operating Company, LP	Lea	105	4,000
Hobbs Cryogenics Plant	DCP Operating Company, LP	Lea	42	80
Indian Basin Gas Plant	OXY USA WTP LP	Eddy	300	5,000
Jal #3 Plant	ETC Field Services LLC	Lea	110	6,680
Kutz Gas Plant	Williams	San Juan	230	4,285
Linam Ranch	DCP Operating Company, LP	Lea	225	1,400
Maljamar Gas Plant	Frontier Field Services	Lea	150	1,143
Monument Plant	Targa Midstream Services LLC	Lea	85	5357
San Juan Gas Plant	Hilcorp San Juan, LLC.	San Juan	550	4000
Saunders Plant	Targa Midstream Services, LLC	Lea	70	2286
South Carlsbad Dew Point Plant	Enterprise Field Services LLC	Eddy	200	1200
Targa Midstream Services, LLC	Targa Midstream Services, LLC	Lea	115	713

Plant Name	Owner	County	Plant Capacity (MMcf/d)	Storage Capacity (MMcF)
Zia II Plant	DCP Operating Company, LP	Lea	220	3950

Data Source: U.S. Energy Information Administration, EIA-757, 2019

Natural Gas Pipeline Operators in New Mexico

The following list identifies all natural gas providers in New Mexico. In addition to liquid fuels, the NM PRC Pipeline Safety Bureau administers federal regulations on the transportation of natural gas established by PHMSA. NM PRC Is responsible for licensing natural gas product pipelines and conducts periodic inspections of intrastate provider integrity management plans to confirm compliance procedures are identified and followed. Additionally, the Pipeline Safety Bureau reviews energy operator emergency operations plans and receives real-time updates on reportable incidents and accidents. The Pipeline Safety Bureau partners with the 811 Call Center that serves as a communication hub and location coordinating service for all companies and individuals planning ground-disturbing operations. In New Mexico, energy operators are required to notify the 811 Call Center two-days in advance of any ground-disturbing construction to indicate where the construction will occur.

Name	
3 Bear Delaware LLC	Navajo Tribal Utility Authority
City of Las Cruces	New Mexico Gas Company
City of Lordsburg	Northern Natural Gas Company*
DCP Midstream	Oktex Pipeline Company, LLC*
Deming Gas System	Petroleum Fuels Company
EMW Gas Association	Raton Gas Company
Eastern New Mexico Gas Association	SIMCOE LLC
El Paso Gas Company	Socorro Natural Gas Company
Energy Transfer Company	SPC Resources, LLC
EnLink Permian, LLC	Summit Midstream Permian 2 LLC
Enterprise Products Operating LLC	Targa Resources Operating LLC
Frontier Field Services LLC	Town of Mountainair
Grama Ridge Storage and Transportation, LLC	Transcolorado Gas Transmission Company*

Name	
Harvest Midstream Company	Transwestern Pipeline Company*
Hilcorp Energy Company	Village of Wagon Mound Gas System
Holly Energy Partners Operating L.P	SPC Resources, LLC
IACX Roswell LLC	West Texas Gas Utility LLC*
Las Vegas Natural Gas System	Western Midstream Partners, LP*
Longwood RB Pipeline, LLC	Western Refining Logistics, LP*
Los Alamos County Utilities	WWM Operating, LLC*
Luci Energy Delaware	Zia Natural Gas Company
Markwest New Mexico, LLC*	Western Refining Logistics, LP*
Merrion Oil and Gas	WWM Operating, LLC*
Natural Gas Pipeline Co of America (KMI)*	Zia Natural Gas Company

Energy on Tribal Lands

New Mexico is home to 23 federally recognized Tribal governments that, combined, represent more than 10% of the state's land area. The state's two largest Tribal reservations are the Jicarilla Apache Nation and the Navajo Nation. Both are located in the Four Corners region in the northwest corner of the state. This area also includes the San Juan Basin, a region of abundant natural gas and crude oil resources.

The 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.

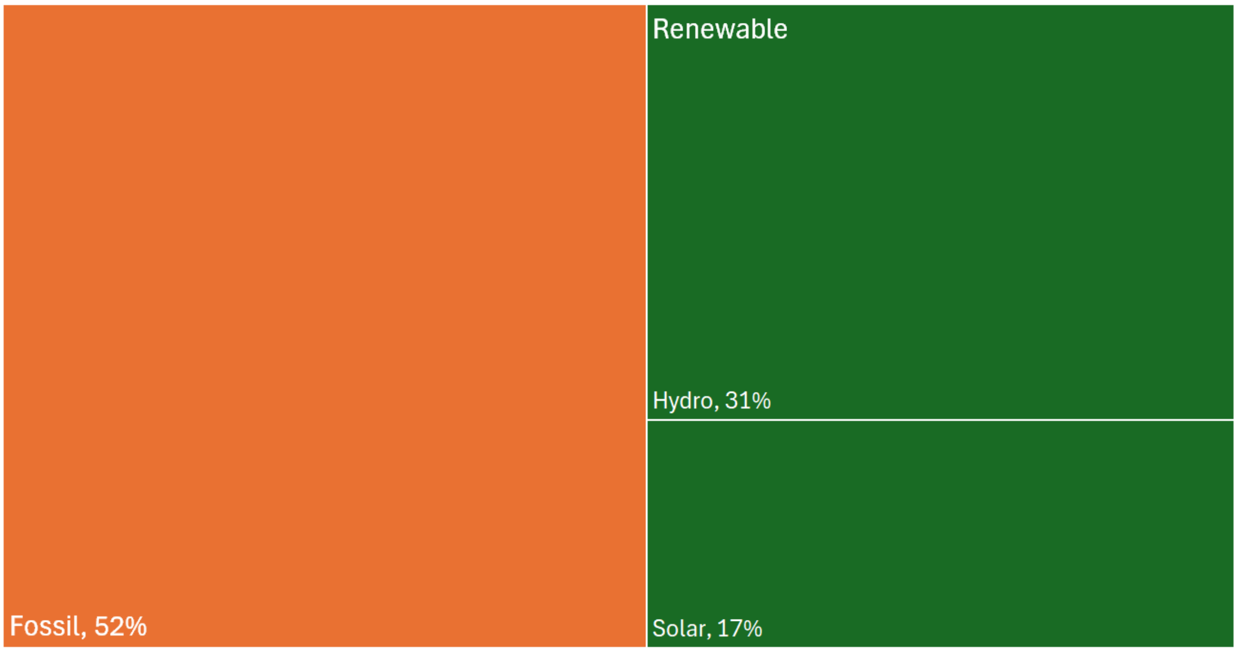
The Navajo Nation spans portions of New Mexico, Arizona, and Utah and owns and operates a crude oil pipeline between New Mexico and Utah as well as the Navajo Mine located in the San Juan Basin. Four Corners Generating Station, the largest power plant in New Mexico, sources its coal from the Navajo Mine.

Navajo Tribal Utility Authority

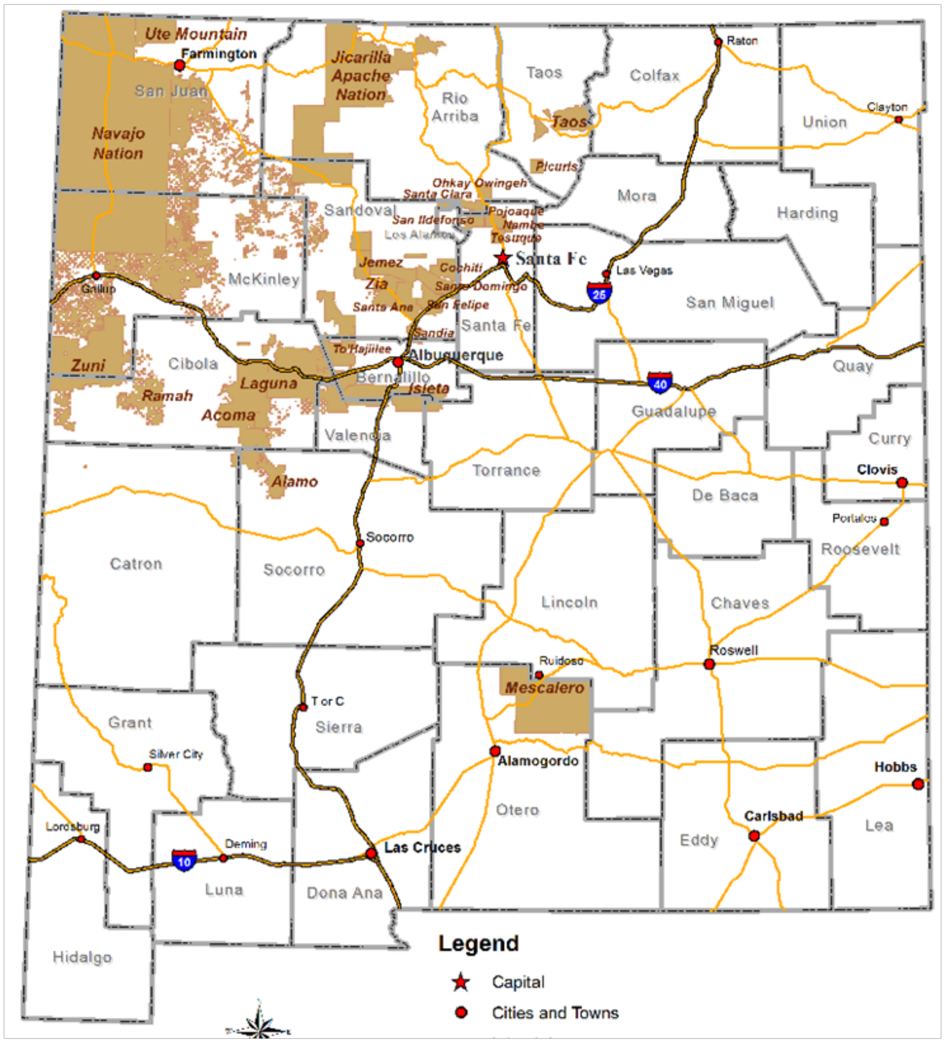
The Navajo Nation operates the Navajo Tribal Utility Authority (NTUA), providing electricity, communications, natural gas, and water service to roughly 30,000 customers across a service territory that spans over 27,000 square miles. Due to the vast expanse of the Navajo Nation, roughly 13,000 remote households remain unconnected to electricity service in 2025.

The Navajo Tribal Utility Authority generates 52% of its electricity from fossil-based resources including coal. Almost a third of NTUA electricity is federal hydropower from the Glen Canyon Dam.

Navajo Tribal Utility Authority Generation Mix (2024 Progress Report)



Map of Tribal Areas of 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

Threats and Vulnerabilities Inventory

Executive Summary

The Threats and Vulnerabilities Inventory identifies threats and vulnerabilities to New Mexico's energy infrastructure and considers the dynamic and evolving energy landscape in the state and region, changing climate conditions, and New Mexico's renewable energy transition. US DOE CESER defines threat as anything that can expose a vulnerability and damage, destroy, or disrupt energy systems, including natural, technological, manmade or physical, and cybersecurity. Vulnerability is defined as weakness within infrastructure, processes, and systems, or the degree of susceptibility to various threats. US DOE CESER published an Energy Sector Risk Profile for the State of New Mexico in March 2021.[9]

Natural Threats

WEATHER EVENTS

While the National Weather Service identifies the most common weather hazards in New Mexico[10] as severe thunderstorms and tornadoes, extreme heat, wildfire, and winter weather also significantly impact the energy sector. Between 2009 and 2019, the natural hazards that caused the greatest property damage statewide include winter storms and extreme cold ($39 million annually), wildfire ($7 million annually), thunderstorms and lightning ($6 million annually), flood ($6 million annually), and tornadoes ($1 million annually).

All 33 counties in the state experience thunderstorms producing high winds, large hail, deadly lightning, and heavy rains at some time during the year. During the spring, 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 during the North American Monsoon. Hail with flash flooding becomes a threat for central and western New Mexico between June and September.

Tornadoes have been verified in most New Mexico counties. 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.

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[9] United States Department of Energy Office of Cybersecurity, Energy Security, and Emergency Response. 2021. "New Mexico Energy Sector Risk Profile." *State of New Mexico Energy Sector Risk Profile*.https://www.energy.gov/sites/default/files/202109/New%20Mexico%20Energy%20Sector%20Risk%20Profile.pdf Henceforth referred to as "DOE Risk Profile".

[10] National Weather Service. NM Weather Hazards. https://www.weather.gov/abq/prephazards

CLIMATE CHANGE

Climate change poses an ongoing and increasing risk to the energy sector. Extreme heat and drought have become more frequent over the past decades as the climate warms, and New Mexico is at risk for impacts from these events. Within the state, urban areas such as Albuquerque, Santa Fe, and Las Cruces, face the highest exposure to extreme heat. Extreme heat drives excess demand on energy systems, placing heavy strain on electric systems, particularly those in high density locations. In 2022, high temperatures through the summer months pushed portions of New Mexico's electric grid close to requiring rolling blackouts.[11] [12] While blackouts were not ultimately needed, operators became reliant on reserves from other parts of the region and country to support the increased energy demand.

Winter weather events in New Mexico often have widespread cascading impacts and frequently result in temporary closures of roadways and railways. The impacts diminish the state's overall ability to move and provide energy resources and force additional strain on energy infrastructure. In February 2011, the Groundhog Day Blizzard created two feet of snow throughout New Mexico and resulted in a State of Emergency due to the failure of the El Paso Electric Company's power grid. In 2021, Winter Storm Uri brought heavy snow, bitter cold, and blizzard conditions to the majority of New Mexico. Snow and ice along Interstate 40 near Albuquerque forced hours-long closures of the interstate due to unsafe conditions and multiple crashes.

WILDFIRE

According to historical wildfire incident location data from the National Interagency Fire Center NIFC, fires have occurred in every electric service territory since 2014. Wildfire causes are generally linked to lightning strikes, human-caused events, and to an extent, downed power lines. From January 1, 2023, to December 31, 2024, the New Mexico State Forestry Division recorded 293 fires that were started by downed power lines, costing the state an estimated nearly $8.8 million. While climate change is not a direct cause of wildfires, increased drought, stronger winds, and more frequent lightning associated with higher temperatures directly correlate to the increased potential of wildfire and greater threat from post fire issues such as flooding, hazardous trees, and debris flows to energy infrastructure through destabilization of transmission lines and roadways. Financial strain

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[11] NERC. 2022. 2022 Summer Reliability Assessment. https://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_SRA_2022.pdf

[12] Rushton, Griffin. PNM Warns of Potential Blackouts in New Mexico. March 2022. https://www.kob.com/archive/pnm-warns-of-potential-blackouts-in-new-mexico-this-summer/

in the state and region is also a concern. The long-term impact to natural resources, ecosystem recovery and water quantity and quality are also of concern.

According to the Southwest Coordination Center, the 2022 wildfire season in New Mexico included 40 significant wildfires that burned a total of 904,000 acres, including the Hermits Peak-Calf Canyon fire, which is the largest fire on record since New Mexico became a state. The 2022 New Mexico wildfire season was especially costly and Forestry Division notes that the main impact (and persistent cost) will be from post fire flooding and hazard tree effects (i.e., damage from falling, structurally unsound trees).

According to the National Interagency Coordination Centers 2024 Wildland Fire Summary and Statistics Annual Report, wildland fires burned a total of 82, 531acres. Of those wildland fires the South Fork and Salt Fires started on Mescalero Apache Lands on June 17, 2024, and spread onto the Smokey Bear Ranger District burning a total of 17,066 and 7,688 acres, including 5,843 acres of National Forest System lands. The South Fork and Salt Fires resulted in a Presidential Disaster Declaration DR-4795-NM. The Southfork and Salt Fires had an estimated cost damage of 1.8 billion dollars.

PUBLIC SAFETY POWER SHUTOFFS (PSPS)

Public Safety Power Shutoffs (PSPS) refer to the intentional de-energization of power lines by electric utilities in order to reduce the risk of wildfire ignition during periods of elevated fire weather conditions. PSPS may be implemented in response to forecasts of high winds, low humidity, dry vegetation, or other environmental factors that increase the likelihood of wildfire. This strategy was first developed in states with high wildfire risk, such as California, and has since been adopted in other parts of the western Unites States.

While PSPS is a relatively new operational tool in New Mexico, it has been incorporated into utility wildfire mitigation planning. Investor-owned utilities in the state have begun to include PSPS protocols in their internal procedures. These plans outline criteria under which a PSPS may be considered, the process for evaluating fire weather conditions, and approaches for notifying customers and emergency management partners.

New Mexico does not currently have regulations specific to the implementation of Public Safety Power Shutoffs. However, utilities operating in the state have begun incorporating PSPS protocols into their wildfire mitigation plans submitted to the New Mexico Public Regulation Commission (NM PRC). These plans generally outline internal criteria for de-energization, processes for evaluating wildfire risk, and methods for notifying affected stakeholders. While formal regulatory frameworks related to PSPS are still emerging, oversight by the PRC provides a mechanism for reviewing and acknowledging utility planning efforts. As the use of PSPS becomes more established in New Mexico, regulatory approaches may continue to evolve.

The use of PSPS requires coordination between utilities and a range of stakeholders, including state agencies, tribal governments, local emergency management offices, and critical infrastructure operators. Communication and information-sharing are essential to ensure that potential impacts are understood and that response and continuity planning can be activated if needed.

PHYSICAL THREATS

Intentional attacks on energy infrastructure are a concern in New Mexico and nationwide. According to US DOE CESER's Electric Emergency and Disturbance Report, attacks and suspicious activity at power stations reached a decade-long high in 2022 with more than 100 reported incidents in the first eight months.[13] Since then, there have been publicly reported attacks or potential attacks on substations and power plants in Florida, North Carolina, Oregon, South Carolina, and Washington. In New Mexico, in April 2022, the Western Electricity Coordinating Council (WECC) reported a threat of suspicious activity at a facility in San Juan County.

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. Assuring the operation of energy assets is critical for energy security.

CYBERSECURITY THREATS

Energy systems within New Mexico rely on 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.

OT systems include industrial control systems (ICS) that consist of purpose-built hardware, software, and data networks developed specifically for industrial customers. These systems are designed and built using tools and technology created prior to the Internet and technology boom of the late 1990s. While older systems remain in use, they have evolved and adopted newer technologies, including IT technologies that allow for connection to the internet.

Today the energy sector is becoming more technology driven. For example, as the electric grid is modernized to accommodate more clean energy resources, technologies

[13] United States Department of Energy Office of Cybersecurity, Energy Security, and Emergency Response. 2022. Electric Disturbance Events (OE-417) Annual Summaries. https://www.oe.netl.doe.gov/OE417_annual_summary.aspx.

like advanced metering infrastructure have become more common. These changes have benefits including improvements to efficiency, resiliency, and flexibility. However, these technologies also come with more complex cybersecurity vulnerabilities at the same time as the capabilities of malicious actors have become more sophisticated. Cyber threats are not limited to personally motivated individuals. Threats also stem from well-financed criminal and nation-state groups focused on profit, political gain, or power. The skill level and ability of these groups to compromise Internet-connected, Internet-adjacent, and traditional ICS assets designed to connect to the internet continues to grow.

Technologies

OT systems interact with the physical environment or manage devices that interact with the physical environment. These systems monitor or control physical devices, processes, and events. Examples include:

- Energy Management Systems and Supervisory Control and Data Acquisition (SCADA);
- Oil refinery, gas processing and electricity generation distributed control systems (DCS);
- Pipeline pump/compressor stations and electrical substations; and
- General industrial control systems used in energy processes.

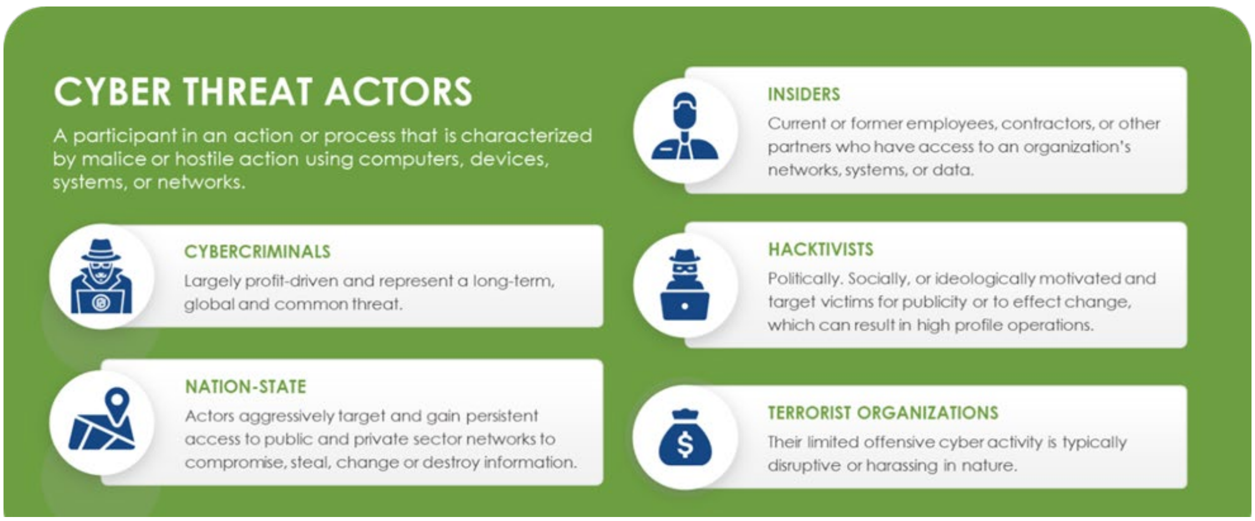
A distinction between IT and OT systems is that a cyber incident within energy OT systems can result in a physical consequence in addition to potential losses of data or damage to an organization's reputation. Differences in the possible consequences of an attack on an IT system compared to an OT system are described in the table below.

	Information Technology	Operational Technology
Impacts	• Brand damage/ loss of confidence in company • Loss of personally identifiable information (PII) • Loss of business data • Customer/supplier payment issues	• Operator loses visibility into operations • Operator forced to switch to manual operations mode • Supply fails to meet demand • Disruption to basic daily activities – loss of power or access to fuel. • Health, safety, and economic impacts • Impacts from prolonged disruptions can cascade into larger consequences

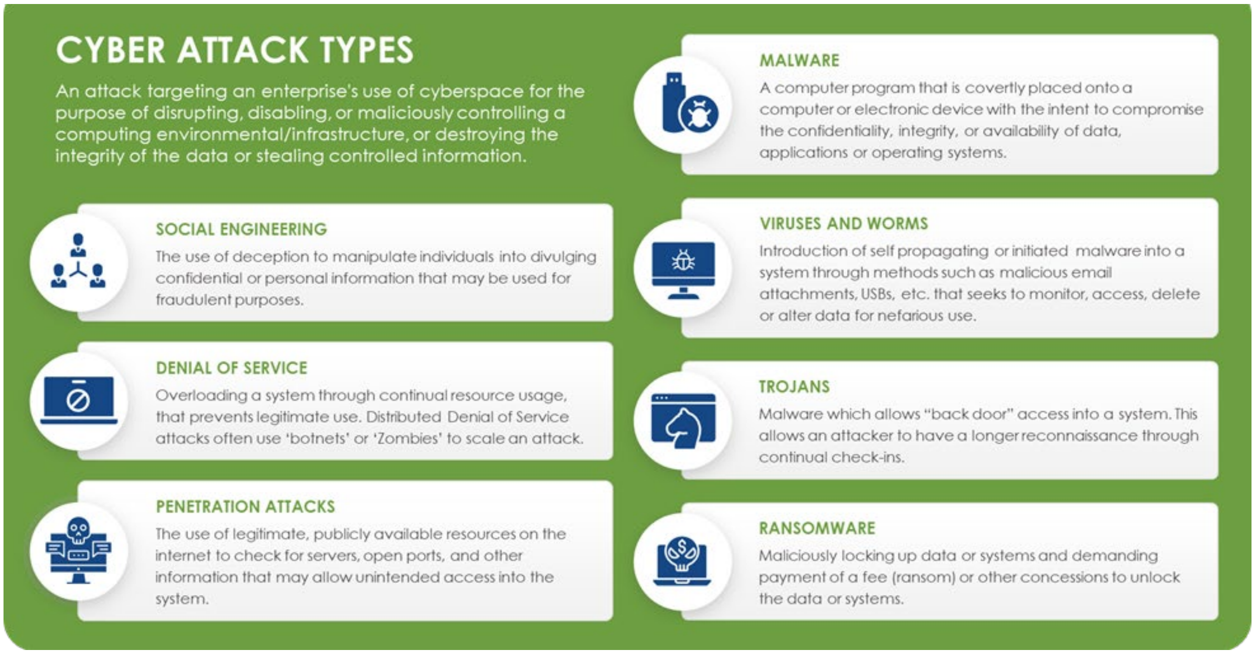
A cyber event can cause loss of power or access to fuel, initiate prolonged cascading impacts, create potential risks to health and safety, and result in economic impacts to not just the company but also the people and businesses that rely on energy.

Cyber Threat Actors and Techniques

The Annual Threat Assessment that the Office of the Director of National Intelligence (ODNI) released in 2022 emphasizes, as it has in the past, that cyber threats from nation states remain acute.[14] ODNI's concerns are focused on Russia, China, Iran, and North Korea, all of whom currently possess the ability to remotely damage infrastructure in the United States or compromise supply chains. Adversaries, whether politically, socially, or financially motivated, are targeting our nation's energy infrastructure and the digital supply chain. The first graphic below shows categories of threat actors, and the second graphic shows cyber-attacks used by attackers.



[14] Office of the Director of National Intelligence. 2022. *2022 ANNUAL THREAT ASSESSMENT OF THE U.S. INTELLIGENCE COMMUNITY*. https://www.dni.gov/index.php/newsroom/reports-publications/reports-publications-2022/item/2279-2022-annual-threat-assessment-of-the-u-s-intelligence-community.



The energy sector is uniquely critical because all other critical infrastructure sectors depend on power and fuel to operate. Unfortunately, this makes the nation's energy infrastructure an attractive target for cyber-attacks. All energy systems have vulnerabilities to cyber threats and 100% security is not possible. However, many steps can be taken to harden OT systems to mitigate these threats.

Understanding the current and evolving threat landscape, as well as possible consequences of a cyber-physical event, can assist state officials and energy owners and operators understand the risks. Knowledge about risks can be used to prioritize investments, such as purchases, staff resources, and training, based on the kinds of threats and vulnerabilities that pose the greatest risks to an organization. Investments can focus on areas that mitigate the highest risks. The National Infrastructure Protection Plan recognizes that public-private partnerships are vital to keeping critical infrastructure safe and secure, including from cyber-attacks.

Federal And State Cyber Information Sharing

Cybersecurity information sharing is vital and ideally is bi-directional. This includes sharing 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.

Robust, timely, and actionable information is crucial to all partners because each has a unique role to play in protecting critical infrastructure against cybersecurity threats as well as participating in a coordinated response should a cyber incident occur.

New Mexico engages in information sharing by:

- Actively monitoring announcements and alerts from Information Sharing and Analysis Centers, or "ISACs;" See the table below for more descriptive information and links.
- Testing cyber information sharing mechanisms through exercises;
- Facilitating and attending threat briefings (unclassified or classified);
- Fusion Center practices for bi-directional information sharing with the sector, briefings, or other outreach;
- Promoting US DHS's "See something, say something" campaign;
- Supporting Suspicious Activity Reporting (SAR) processes; and
- Distributing actionable indicators or detection signatures of malicious activity, vulnerability information, courses of action (to proactively defend or to stop and remediate an attack), and cyber threat intelligence.

Detailed Information for ISACs

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,

Resource	Members	Description
		including vulnerability and threat activity specific to ICS and SCADA systems.

Resources for Assessing Cyber Maturity

Energy associations supporting the energy industry have established resources for assessing and improving cyber maturity.

The US DOE's Cybersecurity Capability Maturity Model (C2M2) enables organizations to voluntarily measure the maturity of their cybersecurity capabilities in a consistent manner through a publicly available tool.

The American Public Power Association has created the Public Power Cybersecurity Scorecard, an online self-assessment tool for municipal utilities to evaluate their cybersecurity programs and overall posture.

The National Rural Electric Cooperative Association has established the Rural Cooperative Cybersecurity Capabilities (RC3) Program Cybersecurity Self-Assessment. The assessment is 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.

The National Association of Regulatory Utility Commissioners has developed the 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.

The Edison Electric Institute, representing all US investor-owned electric companies, has established the Electricity Subsector Coordinating Council, a coordinating entity between federal agencies and electric companies to bolster defense against cyber and physical security threats.

Vulnerabilities

In addition to threats, vulnerabilities (weaknesses within infrastructure, processes, and systems, or the degree of their susceptibility to various threats) are evaluated below. Personnel and human error, asset health, transportation, and telecommunications are key considerations.

Personnel and Human Error

Insufficient staff who are trained to fulfill required roles may adversely impact energy production and delivery and result in human error. Workplace accidents cause personal injury and short-and long-term physical damage to infrastructure. In New Mexico, between 2008 and 2017, faulty equipment and human error accounted for 27% of reported outage incidents in the electricity sector.[15] Between 1984 and 2019, the incorrect operation of natural gas transmission and distribution lines cost an annual average of $9,000 and $44,000, respectively. Between 1986 and 2019, the incorrect operation of petroleum transport by truck cost an annual average of $21,000, the incorrect operation of crude oil pipelines cost an annual average of $33,000, and the incorrect operation of product pipelines cost an annual average of $2,000.[16]

An aging workforce and the ability to recruit new personnel are considerations for the energy sector. Additionally, weather events have the potential to prevent personnel from reporting to worksites to perform key functions due to transportation and safety concerns.

Asset Health

Maintenance and health of energy infrastructure in New Mexico is a consideration for the electricity, natural gas, and liquid fuel sectors.

Within the natural gas sector, approximately 69% of the state's 6,440 miles of natural gas transmission pipelines, and 42% of the state's 14,347 miles of natural gas distribution pipelines were constructed prior to 1970 or in an unknown year.[17] Between 1984 and 2019, New Mexico's natural gas supply was most affected by corrosion of transmission lines costing more than $3 million on average per year. During the same timeframe, equipment failure of natural gas transmission lines cost an average of $73,000 per year.[18]

Similarly, 45% of New Mexico's 2,055 miles of crude oil pipelines and 2,164 miles of refined product pipelines were constructed prior to 1970 or in an unknown year.[19] Between 1986 and 2019, the state's petroleum supply was most affected by material failures when transported by rail, costing an annual average of $333,000, and equipment failures when transported by crude oil pipelines, costing an annual average of $78,000. The impact of corrosion to product pipelines and crude oil pipelines costs an average of $165,000 and $48,000 per year, respectively.[20]

[15] DOE Risk Profile
[16] DOE Risk Profile
[17] DOE Risk Profile
[18] DOE Risk Profile
[19] DOE Risk Profile
[20] DOE Risk Profile

Transportation

Transportation constraints, including damage to roadways and railways, car crashes, and train derailments, impact the movement of energy. Since 1986, outside influences and collisions to trucks transporting liquid fuels have netted an average loss of $2.96 million annually in New Mexico. [21]

Telecommunications

Downed power lines due to pole failure resulting from natural hazards and physical accidents may cause cascading interruptions to telecommunications. The impact to radio, telephone, and Internet access directly affects the operations at or between worksites and the stability of energy sector.

Energy Infrastructure and Cross-Sector Interdependencies

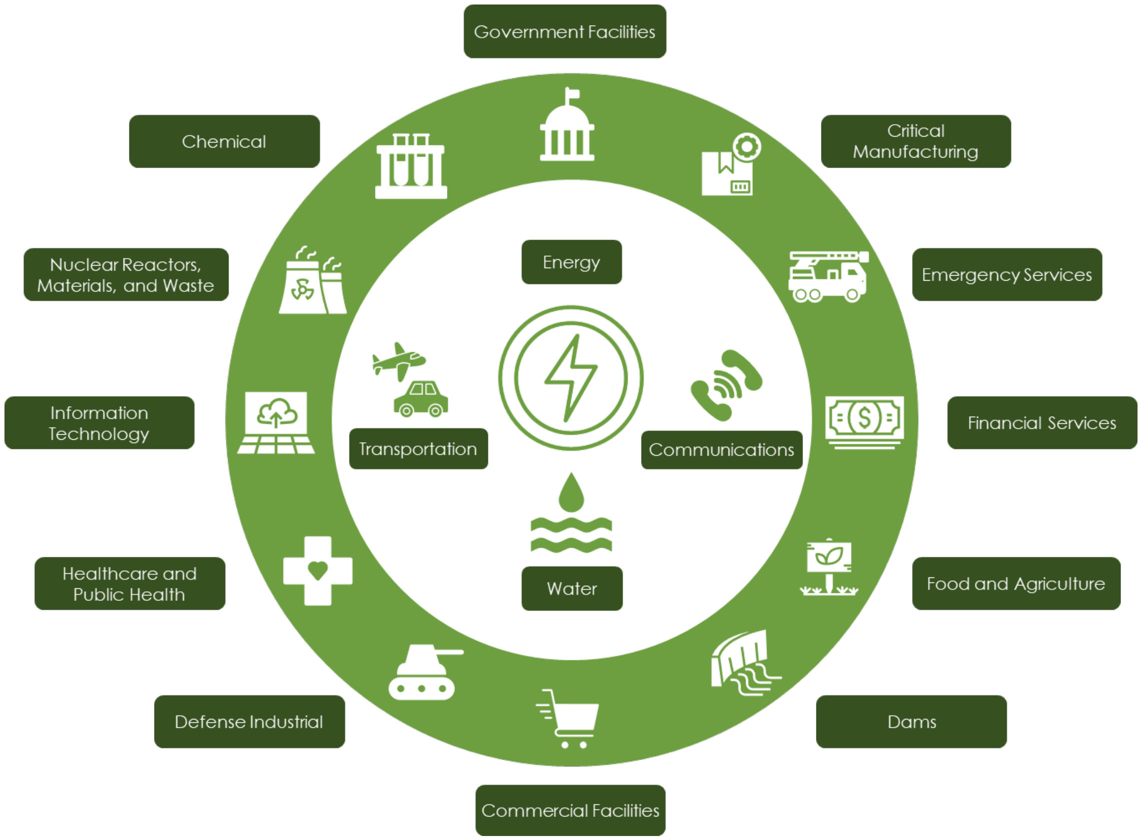
Critical Infrastructure

The U.S. Department of Homeland Security's (DHS) Critical Infrastructure Security Agency (CISA) outlines 16 critical infrastructure sectors, including energy, whose assets, systems, and networks, whether physical or virtual, are considered so vital to the United States that their incapacitation or destruction would have a debilitating effect on national security, economic security, national public health or safety, or any combination thereof. [22] Presidential Policy Directive 21 (PPD-21): Critical Infrastructure Security and Resilience advances a national policy to strengthen and maintain secure, functioning, and resilient critical infrastructure. The same definition can be applied to state assets, systems and networks that are considered vital to New Mexico.

While all energy infrastructure is important, critical energy infrastructure can be defined as physical or virtual energy systems and assets so vital that the incapacity or destruction of such systems and assets would have a debilitating impact on national security, economic security, public health or safety, or any combination of those matters. Critical energy infrastructure consists of energy generation and production, transmission, and distribution systems that power hospitals, wastewater treatment plants, communications towers, food distribution facilities, residential communities, and defense installations. Energy is the backbone of all other critical infrastructure systems, meaning that an energy supply failure could have cascading effects on other critical sectors. The following

[21] DOE Risk Profile
[22] Cybersecurity and Infrastructure Security Agency. 2023. *Critical Infrastructure Sectors*. https://www.cisa.gov/topics/critical-infrastructure-security-and-resilience/critical-infrastructure-sectors.

graphic illustrates interdependencies between the energy sector and 15 additional critical infrastructure sectors.

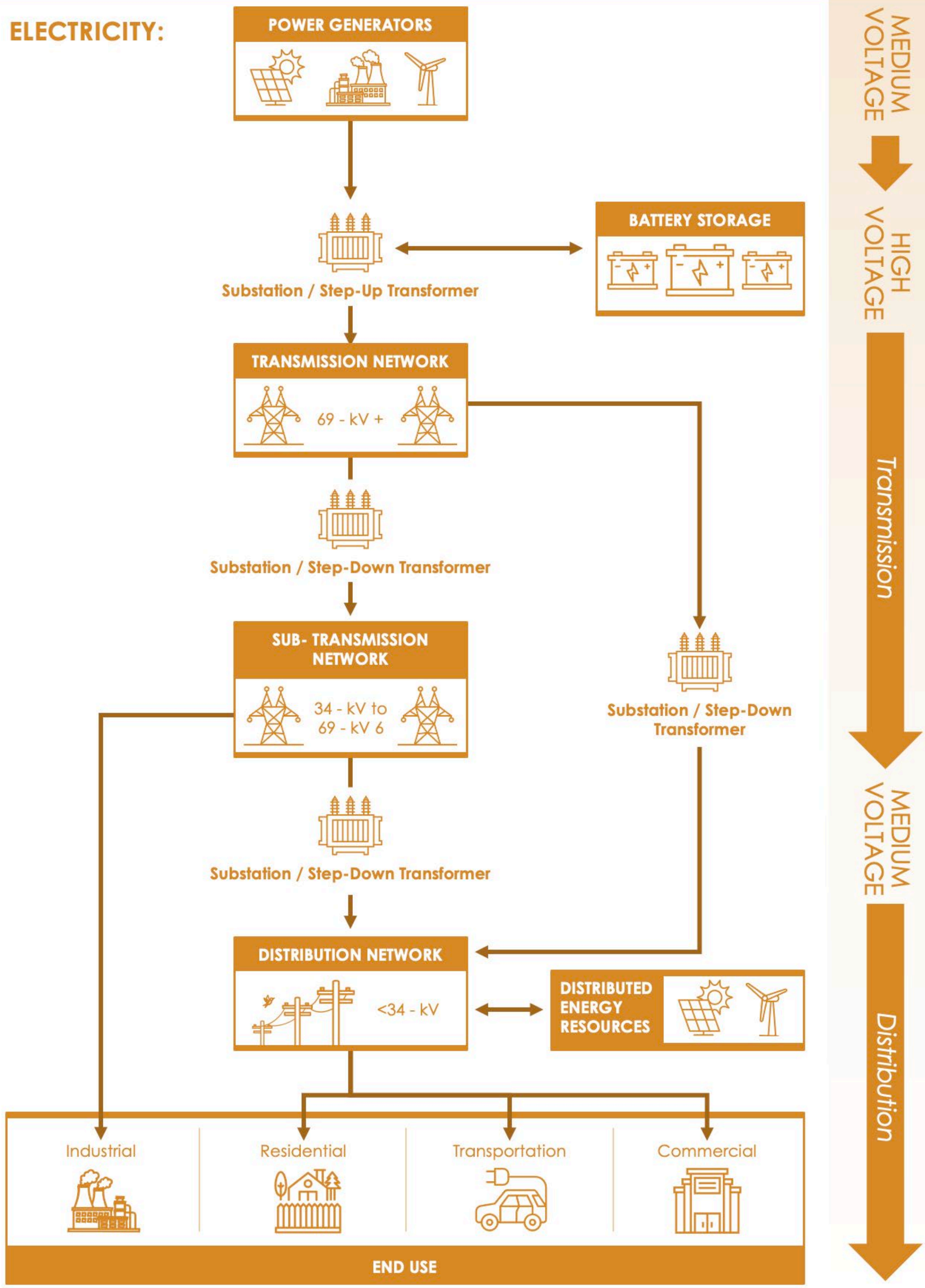


Risk Assessment of Critical Infrastructure

Risk is defined as the potential for loss, damage, or destruction of key resources or energy system assets resulting from exposure to a threat. Risk assessments consider the consequence of an asset's loss, the vulnerability of an asset to specific threats, and the likelihood that an asset will be exposed to a specific threat. Certain energy infrastructure assets may be especially important to ensuring energy infrastructure continuity. Being able to identify the assets that are most critical to the infrastructure or that provide significant support to other critical infrastructure systems helps to determine overall risk and prioritize mitigation strategies more effectively. The following sections identify critical infrastructure, threats, and vulnerabilities to New Mexico's electricity, liquid fuels, and natural gas sectors.

Electricity Sector

The electricity sector is comprised of three segments: generation facilities, transmission facilities, and distribution assets. Electric service providers, also referred to as electric utilities, may own and operate all or part of their electricity delivery infrastructure. Each segment and electric utility maintain a listing of critical energy infrastructure assets to ensure secure and reliable delivery. The following graphic outlines electricity critical infrastructure and supply chain.



Distributed energy resources located behind-the-meter (e.g., solar and energy storage) can feed power back onto the distribution grid…

Identification of critical generation assets is important. The loss of any large generation unit could cause undervoltage or underfrequency conditions that adversely impact electric grid stability and cause cascading system failures. Utility emergency response plans include actions necessary during the loss of a certain amount of base power generation to maintain grid stability.

Operating systems within generation facilities are considered critical systems if their failure causes the shutdown of a generation unit. Within critical systems, components that cause failure of a critical system are categorized as critical components. Critical systems and components must be analyzed for risk of failure and consequence of failure to develop proper prevention and mitigation measures. In addition to this critical system analysis, vulnerabilities in interdependent industries must also be analyzed. For example, the fuel utilized for electric generation is analyzed for vulnerabilities as fuel sources vary in reliability.

NERC establishes the transmission threshold for bulk electric systems at 100 kilovolts or higher. Sub transmission and distribution systems support lower thresholds. These assets convert power from one voltage to another and are critical elements of the electrical system. Long lead times for delivery of equipment to support transmission and distribution currently exist due to supply chain issues and it is expensive to retain spare assets. Moreover, transmission and distribution systems do not follow specified parameters and custom manufacturing may occur. To proactively address supply chain issues, the electric utilities industry has adopted successful mutual aid protocols that foster the sharing of essential equipment between utilities, including personnel. Challenges may arise with transport depending on the size of equipment.

Within electricity assets, remote access control systems and switches may be subject to failure and vulnerable to cyber-attack unless they are built and operate under strong information security protocols. If a utility receives intelligence that a threat is imminent, steps may be taken to disconnect remote access control systems and operate equipment manually to avoid disruption.

Electricity providers in New Mexico include three investor-owned electric utilities, seven municipal utilities, three tribal utilities, and sixteen electric cooperatives. While there are many providers, electric cooperatives maintain responsibility for service territories which may include rural areas where electricity is transported long distances creating vulnerabilities in delivery to the communities served. Moreover, within rural communities, smaller populations equate to less resources to support the cost of modernizing and updating infrastructure.

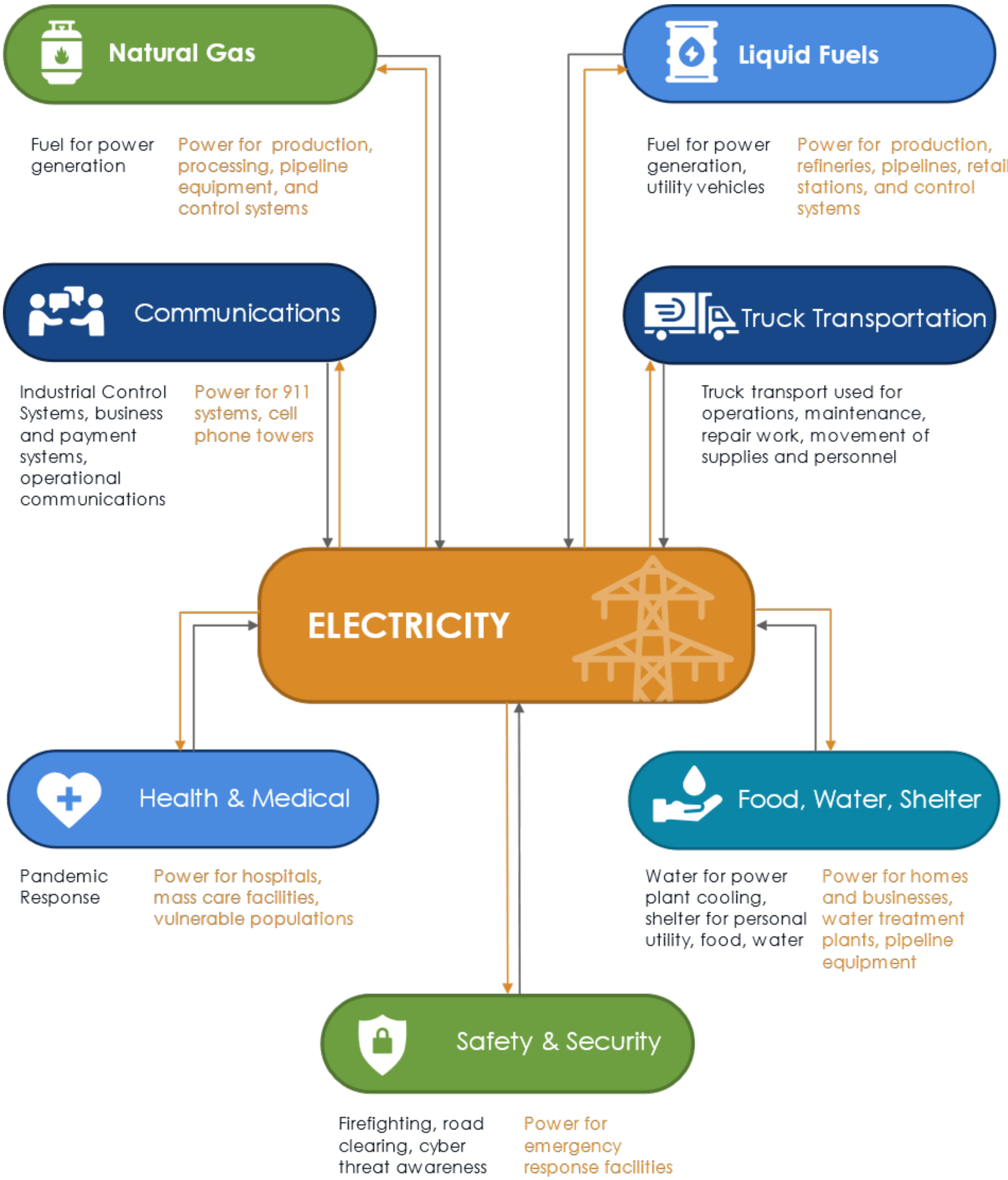
The overall statewide distribution of providers reduces the vulnerability of total system failure from cyber-attack or single failure mechanisms; however, the highly distributed nature requires integration and coordination at all levels of government. Each provider is vulnerable to cyber-attack due to their dependency on information technology for billing, metering, system control and monitoring functions, which are ubiquitous on the electricity delivery system. The risks and impacts of disruptions are variable due to system designs and how the service is constructed and organized.

Severe weather and increasing numbers and severity of wildfires are the largest natural threats to electricity security in New Mexico. Approximately 31% of New Mexico's power outages are due to high winds or falling trees from high winds or icing. Both hot and cold weather places high strain on the state's grid with heat waves pushing air conditioning demand high, and cold weather pushing the demand for heat. Compound these residential demands with the demands of energy providers, such as the need to cool generators or ice-compromised power lines, and the pressure on the grid becomes apparent. Climate change continues to drive summer temperatures higher for longer periods, forcing additional long-term stress on the grid. Cold weather storms, particularly those with heavy ice, pose major risks to electric infrastructure, with lines becoming heavy with ice, trees falling, and physical accidents damaging poles and facilities. In January 2022, the WECC reported an unexpected transmission loss in Eastern New Mexico, and in May 2022, WECC reported an unexpected transmission loss in Roosevelt County. Additionally, cybersecurity and physical security remain ongoing and increasing threats to the sector.

Asset health, personnel shortages, and telecommunications impacts all are wide-scale vulnerabilities for New Mexico's electricity sector. Between 2008 and 2017, 35% of all impacts to statewide electric infrastructure were caused by vehicle accidents, human error, and faulty or outdated infrastructure.

Electricity Sector Interdependencies

The following graphic portrays electricity sector interdependencies that are further examined below.



Electricity – Fuel Interdependencies

One of the most prominent interdependencies among the energy sectors is the fuel-electricity interdependency. Electrical generation is dependent upon fuel sources while the production and processing of fuel requires electricity. In the near term, natural gas will continue to provide dispatchable power as New Mexico transitions away from coal to variable renewable resources and ramps up energy storage capabilities.

> Examples of cascading failures related to this interdependency are the winter freeze events of 2011 and 2021. Prolonged extreme cold weather caused the loss of natural gas supply which also resulted in the reduction in capacity or shut-down of some natural gas-fired electrical generation plants. The resulting instability of the electrical grid, due to excessive demand and insufficient supply, led to load shedding of sections of the grid. These electricity shortfalls further affected natural gas production thus creating a cascading failure of both energy sectors.

Situations that further illustrate the fuel-electricity interdependency include:

- Natural gas, propane and petroleum processing and transportation systems may not have sufficient backup electrical power systems to maintain production during prolonged outages. Compressor stations, pumps, and safety monitoring equipment are examples of equipment that need electricity to operate.
- Most backup electrical power systems require fuel (propane, diesel fuel, gasoline, natural gas).
- Vehicles that run on gasoline and diesel fuel are essential to the transportation of material and personnel to operate the electric system.
- Coal, though declining in use, provides one third of electricity currently, and is highly dependent on petroleum-based fuels for its extraction and transportation. Rail transport is particularly important.
- Control systems, critical to all energy system production and operation, require a constant source of power to maintain operations along with internet or wireless communications.

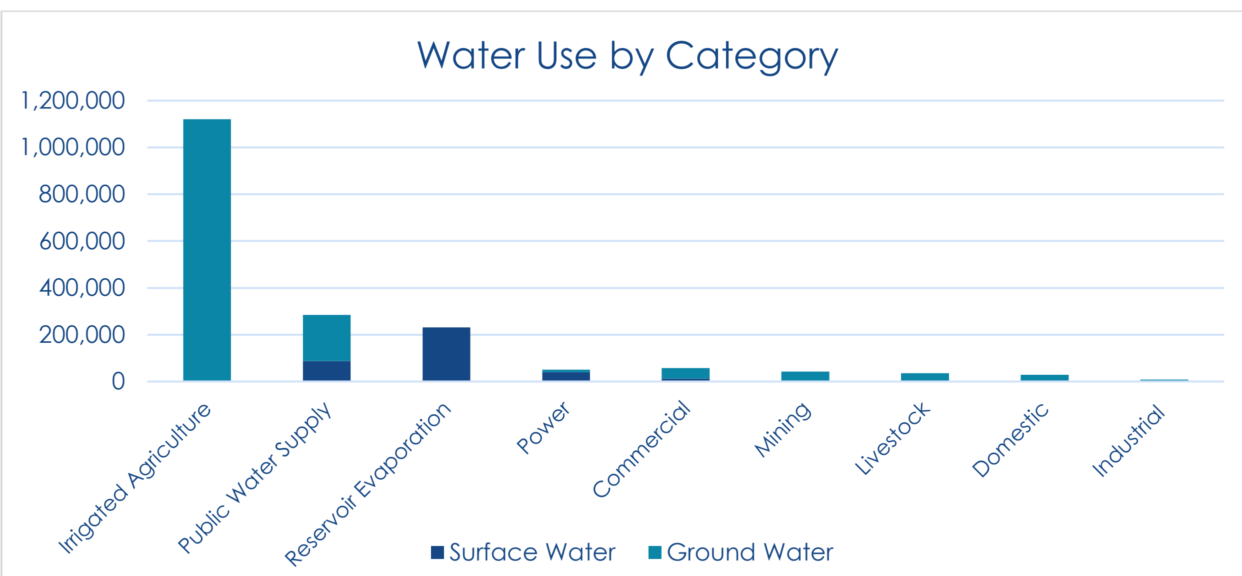
Electricity – Physical Infrastructure

The delivery of electricity to end users is highly reliant on physical infrastructure. Transmission and distribution lines are most often above ground and exposed to the elements, and a failure of the infrastructure that supports those lines can disrupt or entirely stop the distribution of electricity. Electric lines may also run beneath bridges and overpasses, and failures to these structures may result in a widespread disruption of service. Physical infrastructure is dependent on electricity to maintain electric roadway signs, manage tolls, provide lighting to roadways, maintain project lighting for new and updating infrastructure, and cascading impacts into other industries. The expanding renewable energy portfolio in New Mexico should also be considered as part of the electricity – physical infrastructure interdependency. As solar arrays, wind projects, and hydrogen power projects expand in New Mexico, there is an increasing dependence on physical infrastructure to distribute and store this energy.

Energy – Water Interdependencies

The energy – water interdependency is important to New Mexico's energy security given the scarcity of fresh water in the region. In the energy sector, water is required primarily for electrical generation as well as for mining and fuel processing. Electrical generation facilities that use heat (thermoelectric generation) rely on water for steam and for cooling. Mining operations use water for cooling and for dust control. Oil, natural gas, and propane processing facilities use water as a cooling mechanism in some processes. A lack of water in any of these energy sectors could have significant adverse effects on operations.

In 2015, the combination of mining (of all types, including petroleum, natural gas, coal, and any other mineral substances naturally occurring in the earth's crust), and power generation represented water withdrawals from both surface and groundwater sources. Mining accounted for 42,294 acre-feet (AF), mostly from groundwater sources, and power generation accounted for 50,419 AF, mostly from surface water sources. Although the quantity of water used in the generation of electricity is small, it is an essential resource for cooling and boiler operations.



Withdrawals in New Mexico's power category decreased approximately 8% between 2005 – 2010 and decreased again by 14% between 2010 - 2015. Of these withdrawals, 39,677 AF (78.7%) were from surface water and 10,742 AF (21.3%) were from groundwater sources. Nationwide, the water intensity of total power generation – the average amount of water withdrawn per unit of total net electricity generated – has been steadily decreasing since 2014.

All references to water use refer to it being withdrawn from a surface or groundwater source. Much of the water withdrawn returns to the environment and is not truly consumed. Brine water pumped from a depth of 4,000 to 5,000 feet during any mining operation, which is returned by injection into deep brine aquifers, is not included in the state inventory since its impact on the net supply of fresh water is zero. Conversely, water pumped from freshwater aquifers for the secondary recovery of oil, which is later disposed of by injection into deep brine aquifers or spread on the land surface where it evaporates, is treated as a withdrawal.

Historically, the biggest water concerns about the extractive industries in the energy sector are not the amount of water used but rather the potential for groundwater contamination. Consequently, these industries are highly regulated and monitored by state agencies.

Water separated from petroleum during processing (produced water) is typically discharged into lagoons where it is evaporated or injected into deep aquifers. The oil and gas industry in New Mexico generated almost 1.3 billion barrels of produced water in 2019 as a byproduct of oil and gas production. Of this, over 953 million barrels were reinjected for disposal or as part of pressure maintenance and/or enhanced oil recovery operations. The reduction of and reuse of produced water is an active area of technical and regulatory action in New Mexico.

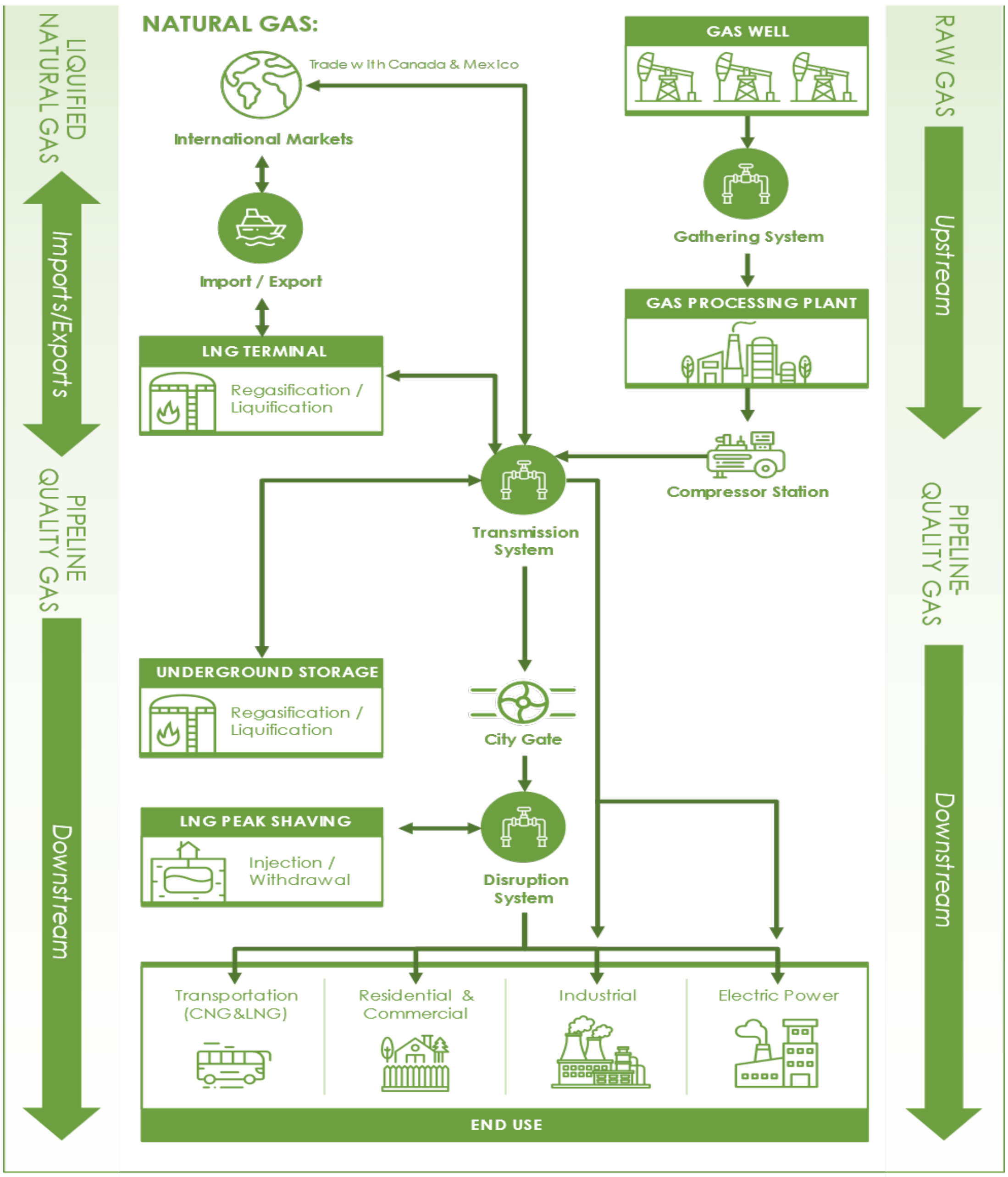
Electricity – Cybersecurity Interdependencies

The long-lasting nature of electricity infrastructure, including power plants and transmission and distribution systems, leads to a blend of technologies at many facilities where analogue assets work alongside newer, highly digitalized technologies. This increasing digitalization, especially when new security measures have not been deployed commensurately, may leave electric utilities vulnerable to cybersecurity threats. Electric utilities are dependent on the cybersecurity sector to provide protective systems and best practices to increase grid resilience and defend against potential cyberattacks.

In turn, the cybersecurity sector is dependent on electricity to provide many of its services. The electricity sector provides power to cybersecurity systems to maintain critical operations. The interconnective nature of the grid means that an outage anywhere can impact a cybersecurity provider's ability to serve its customers.

Natural Gas Sector

The natural gas sector is comprised of three segments: production and processing, transmission and storage, and distribution. Each segment contains critical energy infrastructure components. The following graphic outlines natural gas critical infrastructure and supply chain.



Natural gas production wells are numerous and widespread, largely within the San Juan Basin and the Permian Basin, and are therefore less vulnerable to any single failure or isolated threat; however, most use electricity to power safety and process equipment and may not have backup power capabilities. This can lead to a loss of natural gas availability during widespread power outages.

Natural gas processing plants are similar in nature to electrical generation plants from a control system perspective. These facilities should be reviewed from a risk perspective even though loss of one plant would not have a significant impact on natural gas or propane deliveries.

Severe weather is one of the greatest threats to the natural gas sector in New Mexico. Extreme cold may freeze pipelines and slow the efficient transportation of natural gas. Moreover, 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.

Cold weather also increases the demand for natural gas to heat homes, compounding the severity of the threat. 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.

Compressor stations and pipelines are critical infrastructure components of the natural gas transmission and storage segment. Most compressor stations are designed with redundancy of compressor units to support maintenance and repair and to reduce single system failures. In addition, pipeline networks include multiple pathways for delivery and parallel pipelines for increased capacity. The ability to increase line pressure (line pack) also enables mitigation of short-term supply disruptions. The storage capability and capacity of natural gas is relatively robust with the ability to compress the gas in above ground tanks for more capacity and the ability to store reserve supplies in underground depleted oil and gas reservoirs.

The widespread nature of the distribution segment of the natural gas sector prevents significant impacts from single failures and vulnerability from physical threats; however, threats to above-ground pressure reducing stations and control systems from domestic terrorism and cyber-attacks is an ongoing consideration for this segment along with pipeline age and corrosion-related failures.

While critical assets of the propane sector are like those of the natural gas sector in the production segment, distribution of propane from regional storage facilities to consumers is primarily through trucking and rail. Propane is distributed to consumers by local independent companies that provide both the storage tank and refilling service. In New Mexico, by regulation, only the service provider who provided the storage tank can refill the tank except in a declared emergency when applicable. [23]

The natural gas sector innately has reduced risk of a single point of disruption causing an uncontrollable, cascading outage. Propane deliveries to customers, however, may be vulnerable to shortages of delivery trucks and qualified drivers. An integrated review of the state's supply and delivery systems is warranted to better understand risks and vulnerabilities to these energy sectors, especially in today's constantly changing environment of supply chain issues and cyber threats.

Asset health is the most critical vulnerability to the natural gas sector. Between 1984 and 2019 corrosion caused, on average, $3.4 million in economic loss, primarily in transmission pipelines in New Mexico. PHMSA maintains strict standards for reporting accidents and failures to liquid fuel pipelines. Since 2003, New Mexico has averaged 13 pipeline incidents per year, for an average total cost of $2.17 million. Internal to New Mexico, the NM PRC works with PHMSA to maintain the state's Gas and Liquid Pipeline Enforcement Programs.

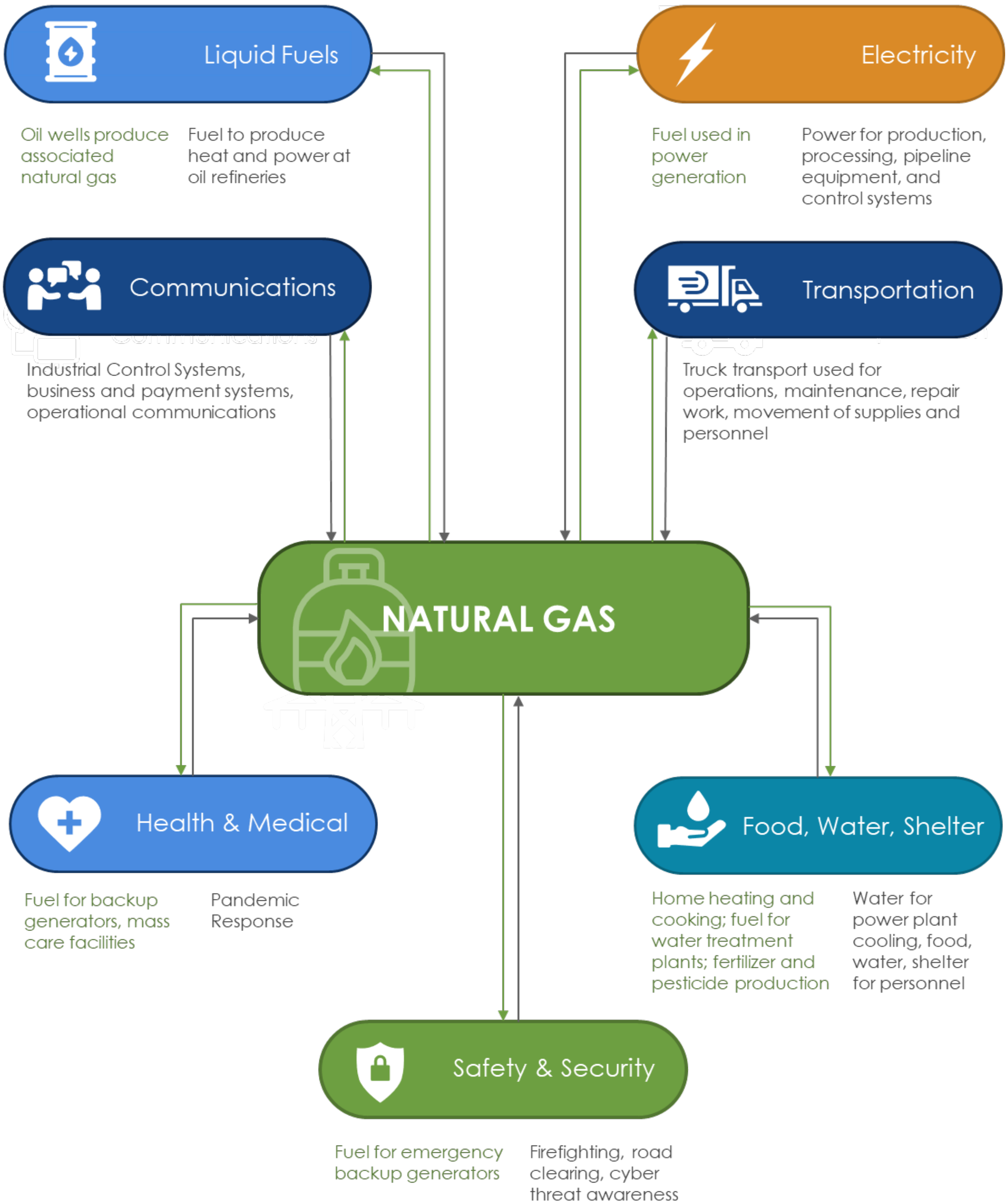
The network of natural gas and propane pipelines throughout New Mexico is vast, with pipelines spanning from the far southeast to the far northwest. These pipelines also run through the Navajo Nation, the Ute Mountain Reservation, the Pueblo of Laguna, and the Pueblo of Acoma. The widespread network of this infrastructure and the multiple jurisdictions it crosses may increase response and recovery time to asset failure events. Moreover, many of these assets are in remote areas.

These networks primarily fall into two critical energy corridors, one in the northwest and one in the southeast, and include some of the larger cities in the state, such as Albuquerque, Santa Fe, Farmington, and Rio Rancho in the northwest, and Roswell, Hobbs, and Carlsbad in the southeast. A failure of pipeline infrastructure in either of these corridors could lead to both local disruptions and cascading impacts as the pipeline network feels extra strain in accommodating the loss.

[23] See NMSA 1978, § 70-5-23

Natural Gas Sector Interdependencies

The following graphic portrays natural gas sector interdependencies that are further examined below.

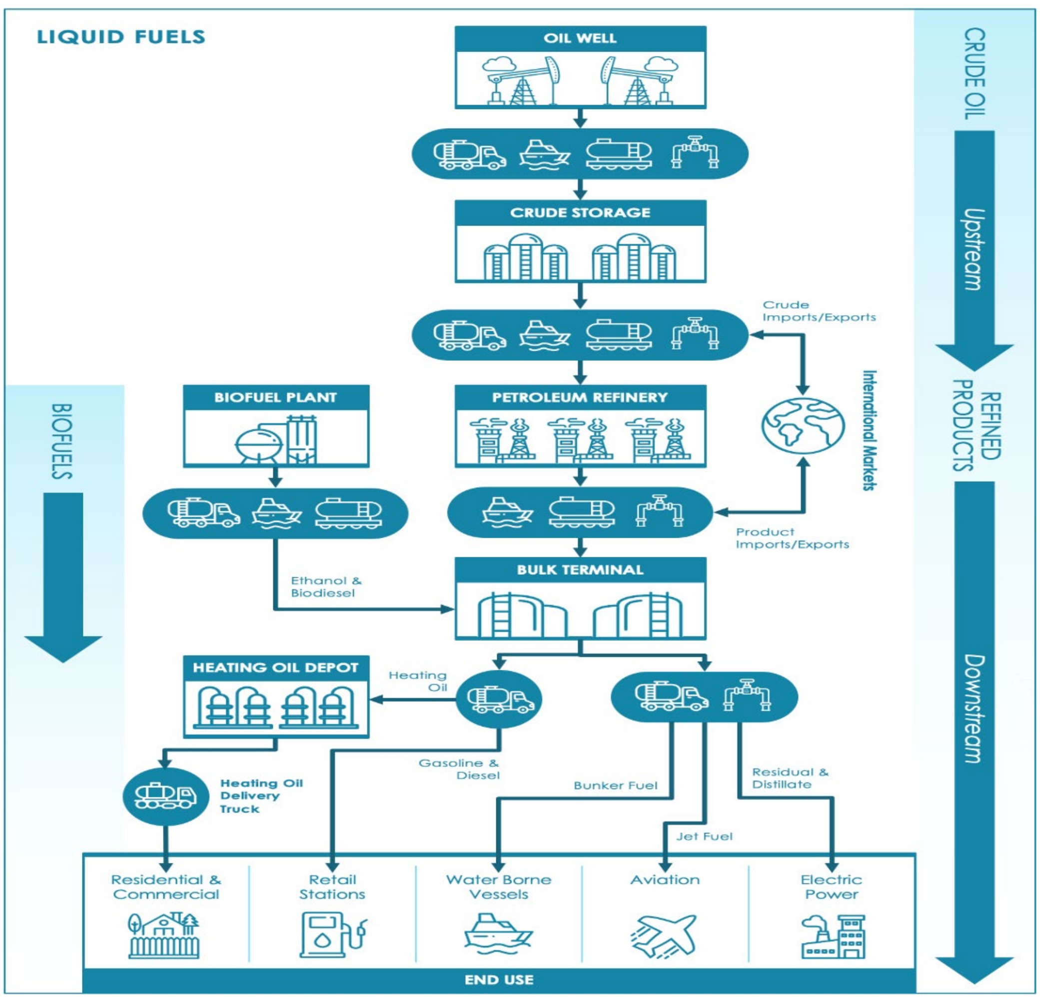


Natural Gas – Physical Infrastructure

Natural gas pipelines often overlap with physical infrastructure such as roadways, bridges, and facilities. Damage, corrosion, or failure of any of the physical infrastructure that natural gas pipelines are dependent on or co-located with may cause interruption or failure of natural gas service and transmission across the state and region. The natural gas sector has an internal web of physical infrastructure in the form of pipelines and pumps. New Mexico contains 6,440 miles of natural gas transmission pipelines and 14,347 miles of distribution pipelines. The largest impact to the natural gas supply between 1984 and 2019 was corrosion of the physical infrastructure system, with an estimated $3.4 million in annual economic loss.

Liquid Fuels Sector

The liquid fuels sector is comprised of upstream (exploration and production), midstream (processing and wholesale distribution), and downstream (retail distribution) segments. The following graphic outlines liquid fuels critical infrastructure and supply chain.



The liquid fuels sector's upstream infrastructure is concentrated in the Permian Basin in southeastern New Mexico with a small portion in the San Juan Basin in northeastern New Mexico. Oil well drilling and extraction production is distributed across many individual well sites, so it is not necessarily impacted by single failures. However, supply chain issues and regulatory constraints relating to federal permits and leasing can impact this entire segment.

Critical infrastructure assets within the midstream segment of the liquid fuels sector include refineries and transportation facilities, principally pipelines and roadways and railways. There is only one remaining oil refinery in operation in New Mexico, located in Artesia operated by HollyFrontier Corporation, and this refinery does not produce gasoline, but does produce diesel fuel. Supplies of processed petroleum-based products (i.e., gasoline, diesel fuel and aviation fuel) are dependent upon imports from other states. Three major pipelines transport oil products within the state and only one of these pipelines originates within state boundaries. These pipelines have vulnerabilities like those of natural gas pipelines with pump stations being vulnerable to threats of wildfire, domestic terrorism and cyberattack on control systems and lines subject to age-related failures. Robustness of the pipeline system is a vulnerability that is noted by the US DOE CESER Energy Sector Risk Profile for New Mexico. Age and corrosion are two specific issues of concern. On average, $3.08 million of loss is netted each year due to failing or aging crude oil and product pipelines infrastructure combined. Pipeline distribution can be augmented by trucking and railways for product delivery, but at a significantly reduced capacity.

New Mexico has hundreds of retail stations with storage capacity to provide refined petroleum products to customers as the backbone of the retail distribution system. Limitations of this system include the capacity of retail storage, the delivery of refined products in times of increased demand, and regulatory limitations such as environmental permits for underground storage tanks. Interdependencies with electrical infrastructure are important.

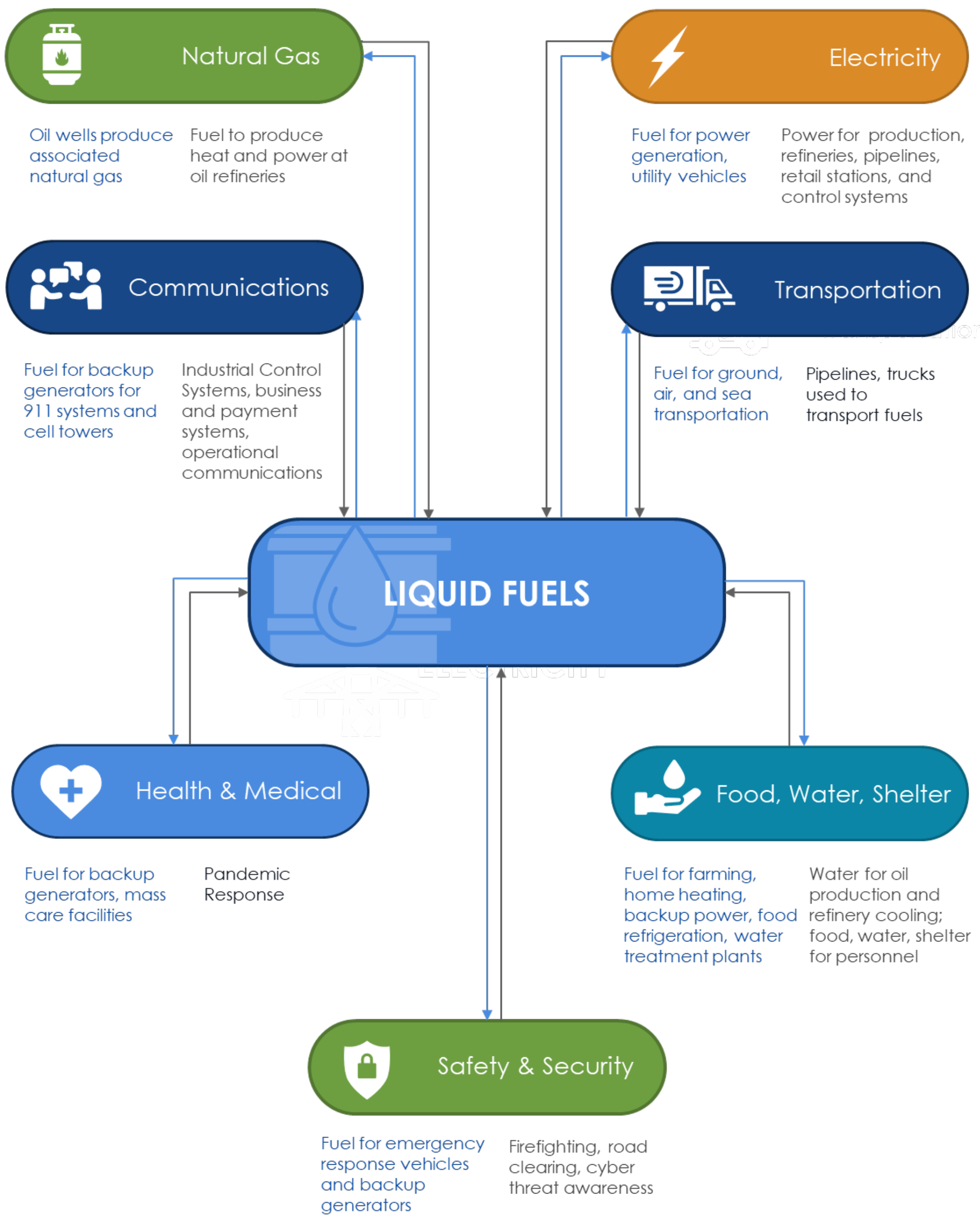
Price fluctuations are common in the liquid fuels sector and may be exacerbated during disruptions or emergency situations. Supplies may be limited or curtailed in emergency situations and purchase agreements with midstream suppliers are necessary to ensure supplies to critical users during shortages. Price agreements that cap prices during an emergency are an option for this sector.

Critical energy infrastructure assets of the liquid fuels sector include the oil refinery located in southeastern New Mexico and distribution pipelines. Pipelines serve an essential delivery function and are potentially vulnerable due to their age.

Winter weather events are the largest threat to the liquid fuels sector in New Mexico. 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.

Liquid Fuels Sector Interdependencies

The following graphic portrays liquid fuels sector interdependencies that are further examined below.



Liquid Fuels – Physical Infrastructure

Most liquid fuels are derived from petroleum, categorized by consumption, distribution, production and refining of petroleum products. The process of refining petroleum allows it to be transformed into different liquid forms. Transporting energy products like liquid fuels can be particularly vulnerable to human-caused and natural hazards.

For example, liquid fuel transportation is dependent on both roadways and railways, as well as the wide network of pipelines across New Mexico. Severe weather events can create challenges in which conditions impact the ability to transport liquid fuels in and out of the state. Furthermore, this may cause negative cascading impacts including economic and supply chain issues. There are also potential environmental hazards if spills are associated with failed infrastructure. Physical infrastructure relies on liquid fuels to power vehicles, provide electricity, and run equipment.

Conclusion

The New Mexico energy sectors are relatively robust and resistant to single failure and most high potential human-caused events, excluding cybersecurity threats. However, significant interdependencies exist between fuel, electricity, and water that leave the energy sector vulnerable to cascading events. Nevertheless, the state has not sustained a significant cascading failure between the energy sectors even when impacted by severe weather events. Based on historical event data, weather related threats pose one of the greatest potential future impacts to the energy sector.

Age-related deterioration and wildfires pose the greatest dangers to critical energy infrastructure based on their high potential and degree of impact. Cyber threats to all energy sectors are an area of concern as this threat continues to be prolific and sophisticated. Supply chain impacts have also become more pervasive in past years leading to a lack of equipment and materials for restoration along with shortages of skilled labor.

Section 2:
Energy Security Emergency Authorities

The following section describes the roles and responsibilities of local, state, Tribal, and federal entities in preparing for, responding to, and recovering from, an energy emergency. In New Mexico, emergencies start and end at the local level. Local jurisdictions and Tribal governments have responsibility for the first response when an emergency occurs. Local jurisdictions and Tribal governments are also responsible for building relationships with local energy providers and integrating them into energy emergency preparedness, response, and recovery operations. When local jurisdictions do not have the resources necessary to adequately respond, assistance from the state may be requested. As a last resort, when an emergency is of such severity that local, Tribal, and state resources combined cannot support adequate response, assistance from the federal government may be requested through US DHS's Federal Emergency Management Agency (FEMA) that serves as the coordinating entity for federal administration-wide support. The following table created by the National Governors Association provides examples of the severity of energy emergencies requiring local, state, and federal support.

Response	Description
Local	Minor inconveniences to residents and businesses, but individuals are otherwise able to continue day-to-day life. The emergency response can be led and coordinated by local authorities with state support. Impacted residents or businesses expect resolution within a few hours. Examples include isolated power outages; minor damage to pipelines.
State	Some disruption to residents and businesses forces individuals to make significant alterations to their day-to-day lives or persists for an extended period. The emergency requires state leadership and coordination with local or private support. Residents are likely aware of the emergency but expect the situation to be resolved in the immediate future. Examples include prolonged severe weather (for example, cold wave, heat wave); far-reaching technical or infrastructural failure; and coordinated cyberattacks that target noncritical infrastructure.
Federal	Severe disruption for residents and businesses makes day-to-day life impossible. A heightened state of alarm may persist for weeks if not months. State resources may not be enough to resolve the disaster and federal support is likely needed. State residents are very aware of the emergency and do not know if/when their lives will return to normalcy. Examples include systematic power grid failure; international incident; and catastrophic failure of energy safety mechanisms.

Local Authorities

In New Mexico, emergencies start and end at the local level. Local emergency management Directors and coordinators and public safety officials in the state's 33 counties are responsible for planning hazard mitigation, preparedness, response, and recovery for the jurisdiction, in addition to constantly monitoring disruptions to the energy sector. While some jurisdictions have full-time personnel that fulfill the role of emergency management coordinator, many areas of the state are rural with limited resources. In these instances, public safety personnel fulfill the responsibility for emergency management as needed.

To augment available emergency management resources, local jurisdictions may apply for and receive federal grant funding administered by NM DHSEM through FEMA. In the event of a disruption, local emergency management may activate the local Emergency Operations Center (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 known as the Intrastate Mutual Aid System (IMAS).

A critical responsibility of local emergency management is establishing relationships with local energy providers and integrating them into energy emergency management preparedness, response, recovery and mitigation operations. Most of the nation's energy infrastructure is owned and operated by private companies. To meaningfully prepare for and address disruptions, private industry must be included in public emergency management practices. One mechanism that New Mexico's local emergency management coordinators utilize to engage with energy providers is Local Emergency Planning Committees (LEPC) that are established pursuant to the Emergency Planning and Community Right-to-Know Act to develop emergency response plans for chemical accidents that could include energy sources.[24] LEPC emergency response plans must:

- Identify facilities and transportation routes of extremely hazardous substances;
- Describe emergency response procedures, on and off site;
- Designate a community coordinator and facility emergency coordinator(s) to implement the plan;
- Outline emergency notification procedures;
- Describe how to determine the probable affected area and population by releases;
- Describe local emergency equipment and facilities and the people responsible for them

[24] United States Environmental Protection Agency. 2023. *Local Emergency Planning Committees*. https://www.epa.gov/epcra/local-emergency-planning-committees

- Outline evacuation plans;
- Identify a training program for emergency responders (including schedules); and
- Include methods and schedules for exercising emergency response plans.

Tribal Authorities

New Mexico is home to 23 federally recognized Tribal governments and has the second largest Tribal population in the nation. Additionally, New Mexico's Tribal communities represent areas rich in energy resources. Their inclusion in statewide emergency management is essential, and effective relationships between state and Tribal governments is critically important to energy disruption preparedness and response.

Like local jurisdictions, Tribal governments retain personnel responsible for emergency management. Some Tribes have full-time emergency management coordinators while others utilize public safety personnel to fulfill emergency management responsibilities as needed. Tribal governments oversee hazard mitigation, preparedness, response, and recovery for the jurisdiction, in addition to constantly monitoring disruptions to the energy sector. To augment available emergency management resources, Tribal governments may apply for and receive federal grant funding administered by FEMA. It is the responsibility of Tribal emergency management coordinators to establish relationships with local energy providers and integrate them into energy emergency management preparedness, response, and recovery operations. Tribal emergency management may activate the Tribe's EOC and make recommendations to Tribal leadership to declare a Tribal emergency.

New Mexico acknowledges the sovereignty of the state's 23 federally recognized Tribes and remains committed to enhancing relationships with Tribal governments to improve energy emergency and disaster responsiveness in Tribal communities. NM DHSEM employs a Tribal Liaison to support the department's relationship with Tribal governments. Like local jurisdictions, when an event surpasses the ability of Tribal resources to respond, 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 Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), federally recognized Tribes may request a Presidential emergency or major disaster declaration independent of the state.

State Authorities

GOVERNOR OF NEW MEXICO

Within 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. The Governor may activate the New Mexico State Emergency Operations Center (SEOC) to monitor or respond to emergencies and declare a state of emergency when emergencies surpass the ability of local resources and require state assistance and coordination. For energy-specific related emergencies, the Governor may utilize powers in the New Mexico Energy Emergency Powers Act to impose restrictions on the use, reallocation, and sale of energy. Additionally, during any event of such severity that local and state resources combined cannot support adequate response, the Governor may request approval of a Presidential major disaster declaration that commences the flow of federal resources to the state through the FEMA. In New Mexico, the Governor oversees three state agencies with primary responsible for energy security including NM DHSEM, EMNRD ECAM, and NM PRC. The Governor may use the following mechanisms to respond to energy emergency events:

Act	Description
New Mexico All-Hazards Emergency Management Act	In the event of a disaster that is beyond local control, 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.
New Mexico Energy Emergency Power 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.
Robert T. Stafford Disaster Relief and Emergency Assistance 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. In New Mexico, coordination with FEMA Region 6 occurs to develop a preliminary disaster assessment to support the request to the President for federal declaration. The Stafford Act establishes the federal process for declaring disasters, determining the appropriate level of response, and determining costs among federal, state, and local governments.

NM DHSEM

The 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 activities centered on prevention, protection, mitigation, response, and recovery. NM DHSEM aids local jurisdictions and Tribal governments when capabilities are overwhelmed and serves as the conduit for federal assistance. Moreover, NM DHSEM facilitates and distributes tens of millions of dollars in federal grants to New Mexico communities annually, including mitigation funding.

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. The NM DHSEM secretary is also 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. To respond to emergencies, the NM DHSEM secretary is authorized to activate the New Mexico SEOC, change the SEOC's activation level based on situation and response needs, and deactivate the SEOC when response and recovery operations have been completed.

NM DHSEM utilizes Emergency Support Functions (ESFs) as the structure for coordinating interagency support for a state response to an incident. A department or agency is designated as the coordinator for each ESF to fulfill a specific function during state-declared disasters and emergencies. The ESF structure helps ensure efficient and timely delivery of needed assistance to disaster-impacted communities.

The table below describes entities and personnel within NM DHSEM that provide critical support during emergency events.

Entity	Description
EOC Director	The EOC director is responsible for the direction, control, and coordination of the EOC. The EOC director determines the general control objectives, staffs the EOC, and oversees EOC operations in support of a response. EOC operations are governed by the New Mexico All-Hazards Emergency Operations Plan. During EOC activation, the EOC director recommends to the secretary the need to request state executive orders, waivers to regulations, or federal assistance and works with FEMA and emergency support function representatives on operational issues.
EOC Watch/Duty Officer	The EOC watch/duty officer staffs the EOC 24 hours a day, 365 days a year and monitors activities within the state for requests for support from the EOC. The EOC watch/duty officer may also advise NM DHSEM management to activate the EOC if a request from local, regional, or county emergency management warrants such action.

Entity	Description
Public Information Officer	The PIO writes, coordinates, and disseminates informational communications to the public during a disruption and supports preparation of internal communications.
Operations Section	The Operations Section manages tactical incident activities to achieve incident objectives, oversees Incident Action Plan implementation, and notifies Emergency Support Function Representatives on activation alerts and the need to report to the state EOC.
Policy Group	The NM DHSEM secretary may convene a Policy Group to deliberate on policy and legal issues that arise in a complex, multi-agency response to an emergency or disaster. Members of the Policy Group traditionally include the Governor's chief of staff, cabinet secretaries, legal counsel of state agencies, and senior officials of other involved agencies and jurisdictions. The Policy Group advises the EOC director to ensure coordinated incident planning and operations and may also be involved in decisions regarding waivers to regulations or laws and development of executive orders to support an energy emergency.
New Mexico All Source Intelligence Center (NMASIC) (Fusion Center)	NMASIC, or the Fusion Center, is collocated with the EOC. The center is operational around the clock though not always staffed. Responsibilities include forecasting and identifying emerging or evolving threats or trends, collecting, evaluating, analyzing, and disseminating information, and providing situational awareness and warnings. The Fusion Center's expertise lies with man-made events, specifically cyber, and critical infrastructure through coordination with federal agencies including CISA and the FBI. The Fusion Center is a resource to local jurisdictions and energy providers for system vulnerability analyses as preventative measures to cyber events. The Fusion Center team participates in EOC briefings during emergencies to assimilate and analyze information and update personnel on unclassified information.
Tribal Liaison	The Tribal Liaison serves as a primary point of contact for ongoing communications to, and coordination with, New Mexico's 23 federally recognized Tribal governments.
Emergency Support Functions (ESF)	ESFs provide the structure for coordinating state interagency support for a state response to an emergency. In New Mexico, ESF #12 is the energy support function.

EMNRD ECAM

EMNRD ECAM is designated to serve as New Mexico's state energy office and is responsible for monitoring energy sectors across the state, implementing energy conservation measures promulgated by federal and state acts and statutes, and maintaining and updating the SESP. Additionally, EMNRD ECAM is the agency charged with administering federal funding for the energy sector through US DOE.

EMNRD ECAM is designated as the primary agency responsible during an energy emergency, per ESF #12, which is the Energy Annex of the New Mexico All-Hazards Emergency Operations Plan. As the ESF #12 emergency support function lead, EMNRD ECAM works with NM PRC, NM DHSEM, and the energy sector to monitor outages and response times. EMNRD ECAM also facilitates state coordination with energy infrastructure owners and utility providers concerning state efforts toward energy security, energy emergency preparedness, energy conservation and energy efficiency efforts, and facilitates exercises on energy emergencies in concert with NM DHSEM and NM PRC.

NM PRC

NM PRC regulates utilities to ensure fair and reasonable rates and approves utility investments in new infrastructure. NM PRC includes the Pipeline Safety Bureau that is responsible for administering regulations on the safe, reliable, and environmentally sound transportation of energy and other hazardous materials established by PHMSA. The Pipeline Safety Bureau conducts periodic inspections of intrastate energy provider integrity management plans to confirm compliance procedures are identified and followed. Observation of field operations is a component of inspections. Additionally, the Pipeline Safety Bureau reviews energy operator emergency operations plans and receives real-time updates on reportable incidents and accidents. The Pipeline Safety Bureau partners with the 811 Call Center that serves as a communication hub and location coordinating service for all companies and individuals planning ground-disturbing operations. In New Mexico, energy operators are required to notify the 811 Call Center two-days in advance of any ground-disturbing construction to indicate where the construction will occur.

EEAC TEAM

The EEAC Program is a cooperative effort by US DOE CESER, the National Association of State Energy Officials, the National Association of Regulatory Utility Commissioners, the National Governors Association, and the National Emergency Management Association. The EEAC Program 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. Structured communications are essential for understanding the severity, magnitude, and consequences of energy disruptions regardless of the causes.

US DOE leverages the EEAC network to communicate important notices, such as situation reports, and outage estimate reports to EEAC contacts leading up to and during energy emergencies. For example, during the COVID-19 pandemic, US DOE CESER disseminated weekly COVID-19 situation reports to all states in addition to situation reports for emergency events like Hurricane Laura. States may also share information with other states or directly with US DOE.

EEACs serve as points of contact for US DOE in the event of an emergency. Membership is made up of representatives from state energy offices, public utility commissions, state ESF #12 responders, emergency management agencies, homeland security agencies, local governments, and governors' offices.

Federal Authorities

There are a multitude of agencies within the federal government that are involved in energy security performing roles including setting standards and regulations related to energy sector safety and security, providing baseline energy information and situational awareness during emergencies, and assisting energy system operators and state, local, tribal, and territorial (SLTT) officials with emergency preparedness and response activities. These federal roles are exercised prior to and during energy emergency events.

- **Prior to emergency events**: the federal government publishes energy data and market information, analyzes and shares information on threats to the energy sector, conducts research and develops new technologies, assists SLTT partners with hazard assessment and mitigation, provides support for SLTT planning and preparedness activities, funds energy resilience projects, and convenes government and nongovernment stakeholders for energy emergency exercises.
- **During emergency events**: the federal government aids industry and SLTT governments, convenes stakeholders for information sharing and situational awareness, distributes energy resources (generators, fuel, etc.) as needed, and grants relief from energy-related federal regulations to facilitate response and recovery.

Emergency Response Function – 12 (Energy)

As defined in the National Response Framework, Emergency Support Functions (ESFs) are the primary response coordinating structure at the federal level. A department or agency is designated as the coordinator for each ESF, along with several primary and support agencies. ESFs provide the structure for coordinating federal interagency response during an incident and group together the functions most frequently used to provide federal support to states and other federal agencies. US DOE is the lead agency for ESF-12 (Energy) and the Sector Risk Management Agency (SRMA) and the Sector Specific Agency (SSA) for the energy sector. US DOE CESER manages US DOE's SRMA and ESF-12 responsibilities. During events requiring 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, SLTT, and industry partners.

Summary of Federal Energy Security and Emergency Response Roles

The following table provides an overview of the federal agencies and departments that participate in overseeing New Mexico's energy security. Each agency's energy-related activities are categorized by sector: electricity, liquid fuels, natural gas, and cybersecurity/physical security.

Department or Agency	Sector(s)	Description
White House	Electricity, Liquid Fuels, Natural Gas, Cybersecurity/Physical Security	The White House, particularly the National Security Council, participates in public briefings and interagency situational awareness activities. The President also has the authority to declare a national state of emergency.
US DHS FEMA	Electricity, Liquid Fuels, Natural Gas	FEMA coordinates federal incident response and recovery activities. FEMA's duties during an event include assisting the President in carrying out the Stafford Act, operating the National Response Coordination Center (NRCC), supporting all Emergency Support Functions (ESFs) and Recovery Support Functions (RSFs). FEMA mission assigns the Defense Logistics Agency (DLA) to provide fuel support to federal responders and, if requested, SLTT responders and critical infrastructure. FEMA funds Public Assistance (PA) disaster funds, hazard mitigation projects through the Building Resilient Infrastructure and Communities (BRIC) Program, Hazard Mitigation Grant Program (HMGP), and others.
US DHS CISA	Cybersecurity	CISA leads the national effort to understand, manage, and reduce risk to cyber and physical infrastructure. CISA manages the Pipeline Cybersecurity Initiative, leveraging expertise from government and private partners to identify and address cybersecurity risks to pipeline infrastructure. CISA publishes best practices for cybersecurity protection. During a cyber incident, CISA assists impacted infrastructure, helps investigate the responsible actors, and coordinates the national response to significant cyber events
US Transportation Security Administration (TSA)	Liquid Fuels, Natural Gas, Cybersecurity/Physical Security	TSA oversees the physical security and cybersecurity of all U.S. pipelines. TSA issues directives for owners and operators of pipelines to better secure pipelines against cyberattacks.
US DOE CESER	Electricity, Liquid Fuels, Natural Gas,	CESER's mission is to enhance the security of U.S. critical energy infrastructure to all hazards, mitigate the impacts of disruptive events and risk to the sector overall through

Department or Agency	Sector(s)	Description
	Cybersecurity/Physical Security	preparedness and innovation, and respond to and facilitate recovery from energy disruptions in collaboration with other federal agencies, the private sector, and state, local, tribal, and territory governments. CESER's preparedness and response activities include SLTT capacity building, energy security and resilience planning, hosting energy emergency exercises and deploying ESF-12 responders to impacted regions during emergencies. CESER facilitates interagency coordination, shares situational awareness products, and provides emergency response support to SLTT governments. CESER also advances research, development, and deployment of technologies, tools, and techniques to reduce risks to the Nation's critical energy infrastructure posed by cyber and other emerging threats. CESER administers programs that can be used to mitigate impacts to energy infrastructure and energy supply, and to provide resources during energy emergencies: • The Federal Power Act Section 202(c) grants DOE the power to temporarily order connections of facilities, and generation, delivery, interchange, or transmission of electricity during grid emergencies. • The Strategic Petroleum Reserve is a federally owned emergency supply of crude oil. Volumes can be released to mitigate the impact of crude supply disruptions.
US DOE Office of Electricity (OE)	Electricity	OE provides national leadership to ensure that the Nation's energy delivery system is secure, resilient, and reliable. Through research and development, OE develops new technologies to improve electric infrastructure. OE also oversees the Federal and state electricity policies and programs that shape electricity system planning and market operations.
US DOE Office of Energy Efficiency and Renewable Energy (EERE)	Electricity	EERE accelerates research, development, demonstration, and deployment of technologies and solutions to equitably transition the nation to net-zero greenhouse gas emissions economy-wide through focuses on energy efficiency, sustainable transportation, and renewable energy.
US DOE Grid Deployment Office (GDO)	Electricity	GDO maintains and invests in critical generation facilities to increase grid resilience and improve and expand transmission and distribution systems to provide reliable and affordable electricity nationwide.
US DOE Office of State and	Electricity	SCEP works with state and local organizations to accelerate the deployment of clean energy technologies, catalyze local

Department or Agency	Sector(s)	Description
Community Energy Programs (SCEP)		economic development and create jobs, reduce energy costs, and avoid pollution. SCEP administers the State Energy Program.
US DOE EIA	Electricity, Liquid Fuels, Natural Gas	EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment. EIA's data can be used in energy security planning and energy emergency response activities. EIA publishes state energy profiles, data products related to energy supply, demand, infrastructure, and prices, as well as GIS maps.
US DOE FERC	Electricity, Liquid Fuels, Natural Gas	FERC is an independent agency within US DOE that regulates the interstate transmission of electricity, natural gas, and oil. FERC's role includes oversight of the transmission and wholesale sale of electricity in interstate commerce, transportation of oil by pipeline in interstate commerce, and proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines as well as licensing hydropower projects. During energy emergencies, FERC also has emergency authority under the Interstate Commerce Act to direct companies to provide preference or priority in transportation, embargoes, or movement of traffic. This authority can be used to direct interstate pipeline operators to prioritize shipments of specific fuels to address shortages.
US DOE NERC	Electricity	NERC is an independent international regulatory agency within US DOE that develops and enforces reliability standards, monitors the bulk power system, and educates, trains, and certifies industry personnel. NERC's jurisdiction includes users, owners, and operators of the bulk power system.
US DOT Federal Motor Carrier Safety Administration (FMCSA)	Electricity, Liquid Fuels	FMCSA sets safety requirements for interstate commercial drivers, such as hours of service requirements limiting how long drivers can be on the road before a mandatory break. During energy shortages, FMCSA can waive these requirements to facilitate the delivery of specific energy products, most often liquid fuels, or to facilitate the movement of utility crews, trucks, and other resources involved in the restoration of electric power.
US DOT PHMSA	Liquid Fuels, Natural Gas	PHMSA regulates pipelines and rail tank cars to advance the safe transportation of petroleum, natural gas, and other hazardous materials. The agency establishes national policy,

Department or Agency	Sector(s)	Description
		sets and enforces standards, educates, and conducts research to prevent incidents. The agency also prepares the public and first responders to reduce consequences if an incident does occur. During pipeline incidents (explosions or spills), PHMSA investigates and issues corrective action orders to pipeline operators before pipeline service can resume. During energy shortages, PHMSA can issue emergency special permits and waivers of certain regulations to facilitate the pipeline supply of fuel to the affected region. PHMSA also regulates rail tank cars that carry petroleum, biofuels, or liquefied natural gas.
US Environmental Protection Agency (EPA)	Electricity, Liquid Fuels, Natural Gas	EPA sets standards for certain fuels, including regulating the vapor pressure of gasoline, requiring reformulated gasoline in certain markets, and specifying the sulfur content in diesel fuel. These fuel specifications can be waived during emergencies to facilitate the supply of fuel into the affected region, or to provide fungibility of available supply within the affected region. EPA also regulates air emissions from energy infrastructure, including power generating facilities and fuel storage terminals. During events, EPA may choose not to enforce these regulations to facilitate power supply and fuel supply in the affected region.
US Internal Revenue Service (IRS)	Liquid Fuels	IRS collects federal motor taxes on diesel fuel used for highway transportation. Diesel used for off-highway purposes (heavy machinery, generators, farm equipment, etc.) is not subject to tax and is dyed red. In coordination with EPA, the IRS can choose not to collect the penalty typically imposed on using non-highway diesel in on-road vehicles (although the IRS still collects tax on this fuel).
US Army Corps of Engineers (ACE)	Electricity, Liquid Fuels, Natural Gas	USACE assists FEMA during disaster response, including installing generators and delivering generator fuels in communities through its Temporary Emergency Power Mission and sending responders to assist in disasters and provide situational awareness.
FBI	Cybersecurity/Physical Security	The FBI leads investigations into cyber attacks and intrusions. The FBI collects and shares intelligence and engages with victims while working to unmask those committing malicious cyber activities.

Section 3:
Energy Emergency Response

State Energy Emergency Response Process

In New Mexico, energy emergencies start and end at the local level. Local and Tribal emergency management is responsible for monitoring conditions and may activate local EOCs in response to disruptions. When an energy emergency surpasses the ability of local, Tribal, and regional resources to respond, local and Tribal jurisdictions may request the state EOC be activated to augment visibility and support.

The state EOC watch/duty officer serves as the primary point of contact for requests from local jurisdictions for state assistance. Upon receipt of a request, the state EOC watch/duty officer informs the chain of command, including the EOC director, NM DHSEM secretary, and Governor, and delivers an accompanying recommendation for state EOC activation.

Once activated, the EOC director is responsible for the direction, control, and coordination of EOC operations and state resources assigned for incident response. The PIO supports the EOC Director during an event and is responsible for coordinating public information communication messages. The Operations Section reports to the EOC Director and is responsible for notifying any ESF representatives of resource needs and activation alerts to report to the state EOC.

As the ESF #12 lead, EMNRD ECAM supports the state EOC on short-term and long-term actions necessary to address energy emergencies including outage information, measures of reduction, curtailment, prioritization of services, and the potential need for state and federal resources. The ESF # 12 lead is responsible for providing assessment of event information and recommendations on further actions, as needed. Information and intelligence are critically important to energy emergency management and require collaboration by local and Tribal jurisdictions, regional groups, the NM PRC, and private industry representatives to comprehensively analyze a situation, identify resources, coordinate response efforts, and provide timely information to the PIO for dissemination to the public. Roles and responsibilities of NM DHSEM, EMNRD ECAM, and NM PRC, leading up to and during an energy emergency are detailed below.

Pre-Energy Emergency Roles and Responsibilities	
Agency	**Responsibility**
EMNRD ECAM	• Conduct and lead periodic meetings with EEAC Team representatives, as needed, to preplan, analyze and prepare for potential events. • Analyze energy sectors for vulnerabilities and threats. • Identify system interdependencies and potential cascading failure points for use during an event. • Identify new equipment and capabilities required to prevent and respond to new or emerging threats and hazards, and to improve the ability to address existing threats. • Develop recommended energy conservation, reduction, and alternative measures for implementation to mitigate potential events. • Monitor energy sectors for potential disruption. • Maintain trained agency personnel to support ESF #12 emergency response and support teams.
NM PRC	• Coordinate with regulated utilities to preplan for energy disruptions and recommend energy system preventative actions to address threats and vulnerabilities. • Serve as point of contact for regulated energy sector representatives concerning state efforts for energy security, energy cybersecurity, energy conservation, energy efficiency, and emergency response preparedness.
NM DHSEM	• Prepare and facilitate emergency training and exercises for an energy event. • Maintain trained agency personnel to support emergency response and support teams.

Energy Emergency Roles and Responsibilities	
Agency	**Responsibility**
EMNRD ECAM	• Monitor event conditions and response efforts and coordinate information and assistance with other state support agencies and federal partners to better understand and respond to the event situation, as needed. • Coordinate efforts during an energy event to integrate information, provide situational awareness, review event for potential cascading failures and critical infrastructure and interdependencies, assist with prioritization of service impacts if needed, and collaborate on recommendations for support and solutions during response and recovery operations. • Provide trained staffing for support to EOC ESF #12 desk and field operations, when required.
NM PRC	• Primary point of contact with EOC for regulated entities during an energy event providing information, support, assessment, and recommendations on actions to respond and recover from an emergency. • Interface with representatives from regulated energy providers to acquire operational information to better understand resource and support needs to properly respond to and recover from an event.

Energy Emergency Roles and Responsibilities	
Agency	**Responsibility**
NM DHSEM	• Provide trained staffing for support to EOC and field operations, as needed.

The EOC director, fulfilling responsibility for direction and control of state EOC resources, makes decisions, and provides directions to Incident Management Teams and multi-agency support groups. Additionally, if an event escalates and requires mutual aid between New Mexico and surrounding states, the EOC director leads requests through the Emergency Management Assistance Compact (EMAC) or the Interstate Emergency Response Support Plan (IERSP). The IERSP is a mutual aid agreement between FEMA Region 6 states, including Arkansas, Louisiana, Oklahoma, New Mexico, and Texas, that builds upon EMAC by expediting the request and support process during the initial response to a catastrophic disaster in the region. Coordination of mutual aid occurs between peer agencies and ESFs, and through state EOC to state EOC interaction.

A state request for federal resources is dependent on the nature, size, and complexity of the event and the roles of local, state, and federal agencies. The Initial point of response coordination occurs between the state EOC and FEMA Region 6 Regional Response Coordination Center (RRCC). The RRCC is a standing facility that coordinates regional response efforts, communicates with FEMA Headquarters, established federal priorities, and implements federal program support for the state and affected local jurisdictions until a Joint Field Office (JFO) is established. The RRCC also establishes communications between the state EOC and the National Operations Center (NOC), coordinates deployment of the Incident Management Assistance Team (IMAT) to field locations, assesses damage information, develops situation reports, and issues initial response assignments. The IMAT deploys to the state EOC, or affected jurisdiction, to aid in disaster operations management, support the establishment of the JFO in the case of a major disaster declaration), and assists with the transition to recovery.

Emergency and Public Information Communications

There are two chains of communication during an emergency event, internal and external. Communication between all emergency response personnel and teams should be kept internal to the response team and coordinated with the EOC Director to prevent confusion and miscommunication to the public. Formal internal team communications and information collection and sharing will be facilitated using WebEOC, an emergency management platform that allows NM DHSEM to communicate with other state agencies and local and Tribal jurisdictions on requests for assistance, real-time changes in conditions, and available support resources. Other informal forms of communication may be utilized during an incident, such as face-to-face, phone, email, internet visual and voice, text, etc. The state EOC has processes in place for backup communications methods in the event of loss of primary communication modes.

For external communications, the state EOC and its supporting PIO and communications team are responsible for developing messages for publication to external parties. NM DHSEM's PIO, and the PIOs for other state agencies, local and Tribal jurisdictions, coordinate with each other through a Joint Information System (JIS). The state EOC will communicate a synchronized message to the public concerning the emergency. The JIS will coordinate the message provided to the public as well as the activities of the PIOs involved. PIOs from the affected jurisdiction, DHSEM, and the state agencies involved in the response will work together to ensure conflicting information isn't distributed to the public. In the case of a terrorism incident, the FBI will be the lead agency for information about the investigation and may exercise direction and control of the JIS. NM DHSEM PIO activities include confirming with the EOC Director the guidance on release of information, establishing an information release schedule to the media, writing news releases and fact sheets, coordinating news conferences, setting up a media and public inquiry function, and briefing the state EOC of significant media events and information. PIO communications on emergency event response activities must be approved by the EOC Director prior to publication.

Waivers and Executive Orders

During energy emergencies, federal waivers and other regulatory relief can be used to accelerate restoration of affected energy systems. Temporarily halting enforcement of certain safety, environmental, and statutory requirements can help expedite restoration of affected energy systems and critical infrastructure services or increase energy supply in areas affected by shortages. US DOE CESER maintains a Waivers Library that describes regulatory relief actions the federal government may take to address energy emergencies. In addition to regulatory relief measures, the Waiver Library includes federal authorities, such as the Defense Production Act, that may be used to expedite and expand the supply of materials and services from the U.S. industrial base needed to promote the national defense.

Under the Federal Power Act, when energy disruptions in the nation reach severe magnitude, the U.S. Secretary of Energy has emergency authority pursuant to Section 202(c) to order temporary actions to address electric reliability. A 202(c) order can be directed to any entity that owns or operates electric power generation, transmission, or distribution facilities. In recent years, 202(c) requests have been primarily submitted by

Independent System Operators (ISOs) and utilities. While not a waiver, a 202(c) order supersedes normal regulatory requirements.

The 202(c) order is issued infrequently, utilized only five times between 2017 and April 2021. Potential precipitating emergencies qualifying for a 202(c) order include a sudden increase in customer demand, the inability to obtain adequate amounts of fuel to generate electricity, any regulatory actions that prohibit the use of certain electric power supply facilities, or extended periods of insufficient power supply. For example, under normal circumstances, three major power grids ("interconnections") in the U.S. operate largely independently, with limited connections to transfer power between them. The 202(c) order can be used to allow temporary interconnections to address electricity reliability needs. 202(c) can also be used to allow individual generators to run at maximum output levels to alleviate electricity shortages during events.

State EOC Activation Levels

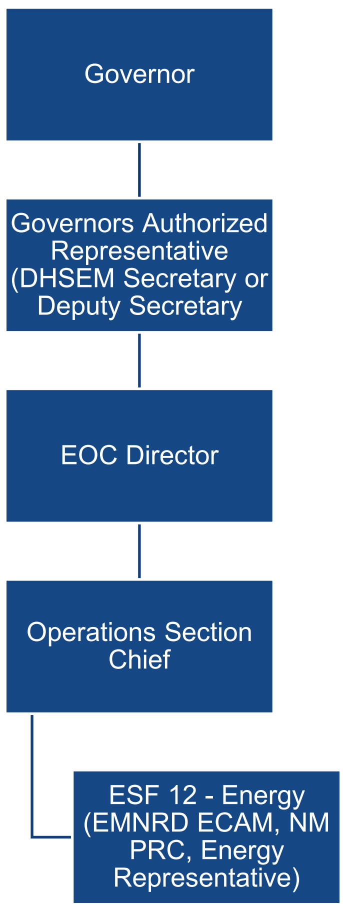
The following table describes the State EOC activation levels leading up to and during an energy disruption.

State EOC Activation Levels	
Level	**Description**
Level 4 (Normal Operations)	Level 4 (Normal Operations) is a non-activated status for the EOC involving statewide monitoring of conditions by the Watch and Duty Program. The Watch Program covers business hours in the EOC when not activated while the Duty Program covers nights, weekends, and holidays. EOC operational readiness is maintained by the NM DHSEM Response and Recovery Bureau. Activities include planning, training, and exercising, situational awareness, low-level operations, and coordinated facility and equipment maintenance.
Level 3	State EOC is partially staffed with some positions filled within the ICS structure and several ESFs represented. The Level 3 activation is usually short-term involving one shift per day, but not extended hours of operation. The duty officer monitors the incident overnight. Activities may include situation analysis, alert/notification, limited resource coordination, financial tracking, public information, and other emergency functions. Events that may trigger a Level 3 activation are: weather advisories, an impending winter storm, potential flooding, minor flooding occurring, one or several small wildfire(s) threatening few or no structures, a hail storm, a limited number of evacuations, providing mutual aid during significant local, national, and international events, and a NTAS Elevated Threat Alert from the US Government warning of a credible threat involving New Mexico, but without specific information concerning timing or location.

State EOC Activation Levels	
Level	**Description**
Level 2	State EOC is nearly fully staffed with the ICS positions and multiple ESF representatives. Staffing may involve 2 shifts covering extended hours (such as from 0700 to 2200) and a duty officer overnight. Activities may include situation analysis, incident planning, alert/notification, communications, coordination of resource, public information, coordination of intrastate mutual aid, and financial tracking. Events that may trigger Level 2 activation are: a widespread winter blizzard, a damaging tornado, moderate flooding, a hazardous materials leak prompting large scale evacuations, and a wildfire as well as any event from level 3. EOC is fully staffed with both ICS positions and ESF representatives for long term or 24/7 operations. Activities may include situation analysis, incident planning, alert/notification, communications, resource coordination, public information, coordination of intrastate mutual aid, emergency purchasing, financial tracking, requesting resources through the Emergency Management Assistance Compact (EMAC) or Interstate Emergency Response Support Plan (IERSP), and requesting federal assistance and/or issuance of a federal emergency or disaster declaration. A FEMA Incident Management Assistance Team (IMAT) may also be on site and interfacing with the EOC.
Level 1	State EOC is fully staffed with both ICS positions and ESF representatives for long term or 24/7 operations. Activities may include situation analysis, incident planning, alert/notification, communications, coordination of resource, public information, coordination of intrastate mutual aid, emergency purchasing, financial tracking, requesting resources through the EMAC or IERSP, and requesting federal assistance and/or issuance of a federal emergency or disaster declaration. A FEMA IMAT may also be on site and interfacing with the EOC. Events that may trigger a Level 1 activation are: tornado(s) causing numerous injuries or fatalities; disease causing numerous injuries or fatalities (and the request of the Strategic National Stockpile); a mass evacuation and sheltering operation; a major earthquake; a major wildland-urban interface fire; extensive flooding; and an NTA**S** Imminent Threat Alert from the US Government warning of a credible, specific, and imminent threat.

Incident Reporting Structure for an Energy Emergency Event

The following graphic outlines the Incident Reporting Structure during an energy emergency. EMNRD ECAM is responsible for supporting the EOC Director by fulfilling the ESF #12. The ESF #12 oversees an energy multi-agency coordination (MAC) team composed of representatives from EMNRD ECAM, NM PRC, and affected local and Tribal jurisdictions, and energy companies. The energy MAC supports ongoing situational awareness, resource integration and placement, and public communications throughout an event that adversely impacts the state's energy sector.



Section 4: Energy Resilience and Hazard Mitigation

Risk Mitigation Approach

This section defines an overarching risk mitigation approach. Risk mitigation is the practice of reducing the impact of potential risks by developing a plan to manage, eliminate, or limit setbacks as much as possible. Risk mitigation creates resilience. The table below describes energy resilience priority actions in the context of a State Resilience and Planning Tool developed by the National Governor's Association Center for Best Practices. New Mexico used a customized version of the tool to complete a comprehensive, all sector Climate Resilience Gap assessment in 2021. The actions are delineated as near-, mid-or long-term by cross-walking gaps in a resilience component and available resources.

A vital component of energy resilience is public-private collaboration. The majority of New Mexico's critical infrastructure is owned and operated by private companies, and it is incumbent on local and state officials to work with energy providers, across government agencies, and with relevant stakeholders to reduce the risk, vulnerabilities, and consequences of a state or regional energy emergency and provide for rapid recovery.

Resilience component	Tie to Energy Security/Energy Resilience	Actions	Target Timeline
Governance - Leadership - Coordination - Planning	Clear delineation of agency roles and responsibilities relative to each other and relative to private sector energy providers and distributors sets the stage for productive coordination and planning.	Continue stakeholder engagement and regular exercises: As Appendices E and F to this plan describe, engagement and exercises have been key to clear articulation of roles and responsibilities and are essential to energy security planning and emergency response. These activities need to be regularly occurring and institutionalized.	***Near term, ongoing*** Example: The state is building capacity for engagement and exercises through a new state-funded permanent energy security coordinator position in EMNRD ECAM. Example: As EMNRD ECAM undertakes future updates to the SESP, preparedness activities outlined in Section 5 of this plan will be executed to further enhance collaboration between public and private organizations.
Risk Evaluation -Identify threats -Identify vulnerable populations	Threats: Natural hazards, cyber-security and physical threats have been identified for the energy sector in New Mexico (see Section I of this plan), in addition to complications to reliability and resilience introduced by the energy transition. Specific hazard and all-hazard infrastructure hardening measures are described in more detail below in Section 4 of this plan).	Continue identifying and monitoring threats to the energy sector: The state must continue to monitor known threats to, and vulnerabilities of, the energy system. Be proactive about the near future including climate change impacts on the energy system and the reliability and resilience needs of the electricity sector transition to zero-carbon resources (e.g., need for	***Near- and mid-term*** Example: Stakeholders can discuss and apply the latest research on predicting climate impacts to the energy sector in the next iteration of the State Energy Security Plan. Example: NM RETA holds an annual conference where stakeholders evaluate the needs and timing for energy storage solutions and pathways for developing energy

Resilience component	Tie to Energy Security/Energy Resilience	Actions	Target Timeline
	Vulnerable Populations: As described in Appendix F, the state's rural cooperatives have a better handle on their communities and member vulnerabilities (e.g., those relying on electric medical equipment), than the IOUs, which have much larger customer bases. Significant parts of the state population across all energy service territories are energy burdened, and many households qualify for electric utility benefits.[25]	energy storage and other technologies.) Engage a broad array of stakeholders to identify vulnerable populations and solutions.	storage technologies to support the energy transition. Example: New Mexico's Climate Resilience Annex to the State Hazard Mitigation Plan (developed through cross-agency participation) will identify areas of increased need for resilience capacity.
Vulnerabilities to Critical Infrastructure -Assess vulnerabilities stemming from infrastructure Interdependencies -Assess vulnerabilities of non-regulated infrastructure	Critical infrastructure interdependencies are described in Section I of this plan. Unregulated and/or under-resourced entities such as municipally owned electric utilities and rural cooperatives, may lack needed controls to guard against cyber and physical threats (See Appendix F). Lack of back-up power can have cascading consequences on communities, particularly in tribal areas (see Appendix F)	Create a state-wide comprehensive view of infrastructure: The state lacks a comprehensive map including all energy service territories and infrastructure to identify and assess interdependencies and cascading impacts of outages to communities. (The map on page 14 highlights the problem with the available overlapping, non-tessellated spatial data). Private entities are not compelled to share asset and outage data (although some	***On-going, Long-term*** Example: The Cybersecurity and Infrastructure Security Agency of the U.S. Department of Homeland Security securely maintains infrastructure data and regularly assesses infrastructure vulnerabilities. A federal-state partnership could help New Mexico overcome key barriers to the state-wide view. Example: Include water and wastewater treatment providers,

[25] The Office of Governor Michelle Lujan Grisham reported that over 200,000 households received utility assistance benefits from 2019-2021.

Resilience component	Tie to Energy Security/Energy Resilience	Actions	Target Timeline
	Electric utilities have load shedding and outage restoration plans that balance customer needs and physical constraints of distribution infrastructure (see Appendix F)	infrastructure and outage data must be reported to the federal government). <u>Diversify stakeholder engagement</u> outside of the energy sector <u>Encourage clean energy infrastructure</u>, including more energy efficient building design with demand response capabilities and on-site renewable generation and storage (including microgrids), which mitigate against threats and advances the energy transition. <u>Encourage long-term investments in energy infrastructure</u>: These include transmission projects and long-duration storage that will be needed for a full transition to carbon-free electricity resources.	public health providers and others in exercises that test our response to long-term outages. Example: EMRNRD ECAM advances clean energy, energy conservation and energy efficiency across all sectors. EMNRD ECAM spearheads on-going efforts that require public-private coordination, including advocating for the regular adoption of building codes, expanding distributed energy resources, working to expand the clean energy economy and workforce, developing policies to advance alternative fuel sources, and modernizing the electric grid.
<u>Mitigating Economic Consequences</u> -Funding and Prioritization	<u>Energy system reliability and resilience will be costly to attain and maintain</u>. Capital investments and energy efficiency measures are needed to	<u>Secure resources for infrastructure hardening</u>: Resources are available through the federal Hazard Mitigation Assistance Program (see	<u>***Near and Mid-term***</u> Example: The Preventing Outages while Enhancing Resilience (POWER) program, funded through section

Resilience component	Tie to Energy Security/Energy Resilience	Actions	Target Timeline
	minimize the impact of threats without increasing the burden on customers. Electric outages, fuel delivery disruptions and other destruction caused by natural hazards, cyber threats and physical threats can be extremely costly to the state and communities and have devastating impacts on local economies.	Appendix G) and the BIL and IRA. All require some element of public-private partnership to be successful. Use economies of scale to provide resources to under-resourced entities.	40101(d) of BIL, is designed to harden the grid against future hazards, repair systems that have been recently impacted by hazards, and provide resilience benefits to communities. Example: NM RECA is working on bulk acquisition of human and capital resources for the state's rural electric cooperatives.
Strengthening Community Ties -Equity -Communications	Threats and vulnerabilities are not evenly distributed. High energy burden is a reality for many, but not all New Mexicans. Many tribal communities suffer from compounding lack of access to reliable energy sources, broadband, food, health care and emergency response services. All these point to the need for an equitable approach to energy security. Regular communication is essential for building trust and strengthening engagement of tribal communities in energy security planning.	Develop an equity approach to energy security building on other equity efforts. Be collaborative when developing effective on-going trust-building and engagement activities.	***Near-term, ongoing*** Example: EMNRD and state partners are developing a Solar for All program (pending federal funding) that will lead to more energy security among individual low-income households. Example: EMNRD ECAM can evaluate and implement ways to overcome barriers to tribal participation in energy security planning and exercises.

The following section outlines mitigation measures identified to increase resiliency of the state's energy infrastructure against primary threats and vulnerabilities identified in Section I of this plan. The mitigation measures identified have been informed by robust stakeholder feedback provided during seven virtual workshops and two tabletop exercises during development of the updated SESP. Stakeholder feedback has been cross-referenced with NM DHSEM's Threat and Hazard Identification and Risk Assessment (THIRA), and US DOE CESER's Energy Sector Risk Profile for New Mexico. Natural hazards, such as extreme heat and cold, wildfire, and wind, physical and cybersecurity attacks, and asset health are the most pressing concerns.

Risk Mitigation Measures

Below is an inventory of potential risk mitigation measures for energy infrastructure to enhance energy sector reliability and end-use resilience, including maintaining electric, liquid fuels, and natural gas system reliability, and securing energy infrastructure.

Energy infrastructure is typically constructed to safety, security, and reliability standards set by NERC, PHMSA, and other federal, state, and industry regulating bodies. To mitigate impacts from evolving threats, including climate change, states and energy infrastructure operators may consider risk mitigation technologies and operational measures that enhance system resilience beyond the standards set by regulators.

The following section describes mitigation measures identified and prioritized to address primary hazards to New Mexico's energy sector, including severe weather and cybersecurity attacks, in addition to all hazards measures that apply to a range of threats.

Hazard-Specific Risk Mitigation Measures

Cold Weather Protection Measures

Measure	Description	Sector(s)
Pipeline insulation and trace heating	Fiberglass insulation used to enclose piping can protect against freezing. Additionally, an electrical heating element installed along the length of a pipe and covered by thermal insulation can be used to maintain or raise the temperature of the pipe during cold weather.	Liquid Fuel, Natural Gas
Water line management	Draining water lines prevents rupturing that would otherwise be caused by the freezing water caught inside. Water lines that cannot be drained can be set to drip. The small amount of flow caused by the steady drip can help prevent the water inside the lines from freezing and rupturing the lines.	Liquid Fuel, Natural Gas

Heating and pitch adjustment for wind turbines	Wind turbine blades and lubricant housings can be fitted with heating elements that prevent ice accumulation that would otherwise impair operations. Wind turbines can also be configured to operate in winter ice operation mode, which changes the pitch of the blades to allow continued operation as they accumulate ice.	Electricity
Thermal enclosures	Instrumentation can be enclosed and heated to ensure functionality and operational continuity during extreme cold conditions.	Electricity, Liquid Fuel, Natural Gas

Extreme Heat and Drought Resistance Measures

Measure	Description	Sector(s)
Advanced water-cooling technologies	Power plants require significant volumes of water for thermoelectric cooling. Asset owners can employ approaches to reduce their water use to make them more resilient to drought conditions. Alternative approaches include recirculating cooling, dry cooling (highlighted below), and wet-dry hybrid cooling technologies. Cooling equipment capable of using alternative water sources (e.g., brackish water, wastewater) can reduce the impact of droughts.	Electricity
Dry cooling	Nearly all thermal generation, including nuclear and coal-fired power plants, requires large quantities of water for cooling. Extreme heat can lead to water shortages or make the water used for cooling too warm, forcing power plant operators to curtail electricity output. Dry cooling technologies use air-cooled heat exchangers and other technologies to significantly reduce water use.	Electricity
Turbine efficiency	Higher-efficiency hydroelectric turbines require less water per unit of electricity generated and are more resilient to drought.	Electricity

Flood Protection Measures

Measure	Description	Sector(s)
Elevate equipment	Elevating equipment located in low-lying areas can protect it from flooding that would otherwise damage or destroy it.	Electricity, Liquid Fuel, Natural Gas
Environmental management	Preserving certain kinds of natural habitats (e.g., coastal wetlands) provides a natural barrier to lessen the impact of storm surge.	Electricity
Flood walls / gates	Installing flood walls, gates, and/or barriers can protect essential equipment in flood prone areas from water intrusion and avoid restoration delays after major storms and floods.	Electricity, Liquid Fuel, Natural Gas
Relocate assets	Relocating energy assets away from flood-prone areas can reduce or eliminate their exposure to flooding and inundation threats.	Electricity, Liquid Fuel, Natural Gas
Stormwater pumps	Stormwater pumps can remove flood water and help prevent equipment from being submerged.	Electricity, Liquid Fuel, Natural Gas
Submersible equipment	Equipment located in flood-prone areas, such as underground power distribution systems in low-lying areas, can be modified or replaced with equipment that is designed to continue functioning when subjected to flooding from water containing typical levels of contaminants such as salt, fertilizer, motor oil, and cleaning solvents.	Electricity, Liquid Fuel, Natural Gas

Measure	Description	Sector(s)
Vent line protection	A vent line protector (VLP) protects gas regulator vent lines from encroaching water. The VLP is usually open, but if water enters the vent line via the VLP, a float will seal the vent line shut. The float will drop when the water recedes, re-opening the vent to its normal position.	Natural Gas

Wildfire Protection Measures

Measure	Description	Sector(s)
Covered Conductors	To mitigate wildfire risk, utilities can replace bare wire overhead conductors on high-voltage transmission lines with conductors that have a plastic covering (also called tree wire). Covered conductors greatly reduce the number of faults, and the risk of ignition. Similar products include spacer cables and aerial cables.	Electricity
Fire-resistant poles	Wood poles can be replaced with ones made from fireproof materials, or wrapped in fireproof sheaths (e.g., wool-ceramic fiber).	Electricity
Line-break-protection systems	Automated monitoring equipment, called phasor measurement units, installed on transmission lines can detect a voltage change associated with the breakage of a power line. The system can respond in near real-time by deenergizing that segment of the transmission line so that the broken power line does not spark a fire as it falls to the ground.	Electricity
Pre-treat assets in path of fire	Pre-treating infrastructure (e.g., by applying flame retardant coatings or wrapping assets such as utility poles in flame retardant sheaths) decreases wildfire damage and expedites restoration of service.	Electricity
Reconductoring	Reconductoring is the process of installing new conductor wires on existing towers to increase transmission capacity, thus reducing propensity for high loads and line sag, which can cause ignition. Reconductoring typically involves replacing traditional steel-reinforced lines with composite core lines.	Electricity

Wind Protection Measures

Measure	Description	Sector(s)
Breakaway service connectors	A breakaway service connector is designed to disconnect when the power line it is attached to is pulled by a falling limb or other debris. This avoids damage caused when a service wire is pulled down in a way that damages the meter receptacle. Meter receptacles are not owned by the utility, and a private electrician is needed to first make repairs, delaying service restoration.	Electricity

Measure	Description	Sector(s)
Dead-end towers	Dead-end towers (also called anchor towers or anchor pylons) are self-supporting structures made with heavier material than suspension towers. Dead-end towers are used at the end of a transmission line; where the transmission line turns at a large angle; on each side of a major crossing such as a large river or highway, or large valley; and at intervals along straight segments to provide additional support. Suspension towers are typically used when the transmission line continues along a straight path. When weaker suspension towers are compromised or toppled, the stronger dead-end structures can stop a domino effect that takes down multiple towers. Reducing the spacing between dead-end structures can limit the impacts of domino effect failures	Electricity
Stronger utility poles	This can involve reinforcing wood poles, replacing wood poles with concrete ones, or replacing wood crossarms with fiberglass ones.	Electricity
Vegetation management	Clearing vegetation away from transmission and distribution lines helps prevent damage (e.g., falling tree branches) to power lines that cause outages.	Electricity

Cybersecurity Resilience Measures

Measure	Description	Sector(s)
Developing and regularly testing workarounds or manual controls	Utilities should consider developing, implementing, and testing workarounds and other solutions to manual controls to ensure processes can be isolated and continue operation without access to networks	Electricity, Liquid Fuel, Natural Gas
Increase Information Technology and Operational Technology staff footprint	Information Technology and Operational Technology staff, including cybersecurity personnel, should have enough staff to provide continual monitoring, especially during holiday seasons when organizations are at a heightened risk for cyberattacks.	Electricity, Liquid Fuel, Natural Gas
Develop and support a culture of cyber hygiene within organizations	This can involve network firewalls, data-wiping software, password managers, or antivirus software, along with robust internal procedures and plans to support cyber hygiene practices.	Electricity, Liquid Fuel, Natural Gas
Request cyber hygiene services from the Cybersecurity and Infrastructure Security Agency	The Cybersecurity and Infrastructure Security Agency offers scanning and testing services to help organizations identify gaps and exposure to cyber threats. Federal, state, local, tribal and territorial governments, as well as public and private sector critical infrastructure organizations are eligible for this service free of charge.	Electricity, Liquid Fuel, Natural Gas

All Hazard Risk Mitigation Measures

Separate from hazard-specific measures, all hazard measures address a range of threats to energy infrastructure and systems simultaneously. They are divided into categories that align with three infrastructural qualities outlined in the US DHS's Resilience Framework:

- **Robustness**: measures that strengthen a system to withstand external hazards without degradation or loss of functionality;
- **Redundancy**: measures that allow for alternate options, choices, and substitutions when a system is under stress; and
- **Rapid Detection / Recovery:** measures that accelerate the time it takes to overcome a disruption and restore energy services.

Robustness

Measure	Description	Sector(s)
Demand response programs	Demand response programs relieve pressure on electric or natural gas delivery systems by reducing or time shifting customer energy usage. Demand reduction during peak periods reduces the chance of system overload and service failure. In addition to enhancing reliability, demand response can also help reduce generator or supplier market power and lessen price volatility.	Electricity, Natural Gas
System segmentation	Energy systems (power grids, gas pipeline networks, and liquid fuels pipeline networks) can be sub-divided to more efficiently isolate damaged areas, allowing undamaged segments to continue serving customers. By segmenting networks, service isolations can be more targeted and affect fewer customers.	Electricity, Liquid Fuel, Natural Gas
Undergrounding power lines	Placing transmission lines underground protects them against external threats, including high winds and falling branches, wildfires, extreme heat or cold, icing, dirt/dust/salt accumulation, and animals. Buried lines may be more vulnerable to flooding if located in low-lying areas and may be more difficult and expensive to maintain and repair.	Electricity

Redundancy

Measure	Description	Sector(s)
Backup Generators	Fixed or portable backup generators can provide backup power to critical facilities when grid-supplied power is interrupted. Backup generators may be designed to power emergency functions, such as emergency lighting, fire suppression, or stormwater removal, or may be designed to power some or all of a facility's operational functions. Mobile generators can power utility or emergency responder base camps (sites where response personnel and	Electricity, Liquid Fuel, Natural Gas

Measure	Description	Sector(s)
	equipment are staged). Backup generators require adequate fuel supply to operate.	
Battery Storage	Battery energy storage can be used to provide backup power during electric grid outages. Batteries can be deployed at utility-scale as front-of-the-meter systems, providing services like utility load peak shaving or behind the-meter by customers. Batteries are often paired with solar photovoltaic systems and included in microgrid designs.	Electricity
Microgrids	A microgrid is a group of interconnected loads and distributed energy resources that acts as a single controllable entity with respect to the grid. It can connect and disconnect from the grid to operate in grid-connected or island mode. Microgrids can improve customer reliability and resilience to grid disturbances.	Electricity
Ties between gas pipelines	Natural gas system operators can add ties between gas distribution lines or "mains" to diversify the transmission system and allow additional pathways to route natural gas in the event some sections of transmission mains are damaged.	Natural Gas

Rapid Detection / Recovery

Measure	Description	Sector(s)
Advanced Distribution management systems	Advanced distribution management systems integrate numerous utility systems and provide automated outage restoration and optimization of distribution grid performance. These functions improve the resilience of the distribution system and decrease the length of customer outages.	Electricity
Artificial intelligence analysis	Artificial intelligence analysis can augment the abilities of subject matter experts to prioritize transmission line operations, identify defects, and update asset management systems.	Electricity, Liquid Fuel, Natural Gas
Distribution Automation	Distribution automation uses digital sensors and switches with advanced control and communication technologies to automate feeder switching; voltage and equipment health monitoring; and outage, voltage, and reactive power management.	Electricity
Drones for asset inspection	The use of drones to inspect pipelines, transmission lines, or other assets allows for safer and more frequent inspections, enhanced asset information, reduced operational costs and failure rates, and extended asset lifetimes.	Electricity, Liquid Fuel, Natural Gas
Remote-operated valves	Remote-operated valves more efficiently isolate systems during disruptions or peak event load management (e.g., temporarily disconnecting gas customers).	Liquid Fuel, Natural Gas

Measure	Description	Sector(s)
Advanced Metering Infrastructure	Advanced metering infrastructure (AMI) is an integrated system of smart meters, communications networks, and data management systems that enables bi-directional communication between utilities and customers. Smart meters can provide near-real-time visibility into customer outages and help utilities allocate resources and restoration activities more efficiently.	Electricity
Supply chain resilience planning	Assessing current supply chains and working with relevant stakeholders to strategically plan for the continuity and rapid restoration of those supply chains after major disruptions improves supply chain resilience.	Electricity, Liquid Fuel, Natural Gas

Energy Sector Hazard Mitigation Funding Opportunities

Preventing Outages while Enhancing Resilience (POWER) Program

New Mexico is expected to receive more than $35 million in federal funding from US DOE through Section 40101(d) of the BIL, the *Preventing Outages and Enhancing the Resilience of the Electric Grid* formula grant program. EMNRD ECAM received approval from US DOE in May 2023 to begin administering the initial allocation of resources and will do so through the statewide Preventing Outages while Enhancing Resilience (POWER) Electric Grid Resilience Program.

Through the POWER Program, 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; and build community resilience. Eligible projects under the program include utility pole management, hardening of power equipment and facilities, weatherization technologies and equipment, fire-resistant technologies, relocation and reconductoring of power lines, undergrounding of electrical equipment, replacement of old overhead conductors and underground cables, monitoring and control technologies, DER for adaptive capacity, adaptive projection technologies, and adaptive modeling technologies. Construction of a new electric generating facility or large-scale battery-storage facility may apply if built for the primary purpose of enhancing system adaptive capacity during disruptive events.

EMNRD ECAM will set-aside 60% of available POWER Program funding 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.

See Appendix G for additional funding opportunities.

Section 5: Energy Security Planning and Preparedness

Preparedness Priorities

As a critical element of building and sustaining energy emergency capabilities, EMNRD ECAM has identified energy sector preparedness priorities to foster increased interagency collaboration between EMNRD ECAM, NM DHSEM, and NM PRC to plan for and respond to an energy disruption. The priorities are intended to support NM DHSEM's comprehensive and statewide biannual emergency preparedness planning in addition to increasing direction and coordination between state, local, and Tribal emergency management, and private sector partners.

Preparedness priorities complement the risk mitigation measures outlined in Section 4, Energy Resiliency and Hazard Mitigation, to sustain and improve core capabilities upon which the state may focus to meet critical energy objectives. EMNRD ECAM will advance preparedness priorities through future updates to the SESP and other energy planning initiatives. In addition to outlining preparedness priorities for the energy sector, this section describes training opportunities facilitated by NM DHSEM and available to public and private energy sector stakeholders to inform the continuous improvement of energy emergency operations.

Energy Sector Preparedness Priorities

EMNRD ECAM has identified two primary preparedness priorities for New Mexico's energy sector including operational coordination and operational communications. Priorities will be advanced in concert with NM DHSEM and NM PRC through statewide emergency management planning and activities to support future updates to the SESP.

Operational Coordination

EMNRD ECAM seeks to support NM DHSEM to clearly define the roles and responsibilities of public and private energy sector leadership leading up to, during, and following an energy disruption. During development of the SESP, significant feedback was received by stakeholders regarding the desire for greater clarity regarding the state operational energy emergency response structure. Additionally, local emergency management and private sector stakeholders expressed the need for increased awareness of the role of EMNRD ECAM in energy security planning and response. 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. To exemplify this need, 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 ECAM continue to address this aspect of energy emergency planning in the future. EMNRD ECAM recognizes that many relationships within the energy sector are newly formed and will prioritize future activities that foster shared understanding and collaboration.

Ongoing Initiatives

EMNRD ECAM has further developed the ESF 12 Energy team by bringing together EMNRD ECAM Staff and staff members from the NM PRC. Monthly meetings between EMNRD ECAM and the NM PRC are ongoing to build relationships, foster coordination and define roles and responsibilities. Training for EMNRD ECAM staff and NM PRC is a priority to strengthen the ESF 12 team in preparedness for an energy emergency.

Operational Communication

EMNRD ECAM seeks to support NM DHSEM to augment and streamline communications between public and private energy sector leadership to enhance the state's energy security posture. Throughout the course of the SESP update, stakeholders, primarily local emergency management, 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 ECAM are intended to be complementary. Serving as the primary points of contact for energy industry representatives, EMNRD ECAM and NM PRC will collaborate with NM DHSEM to enhance interagency and public-private communications.

Ongoing Initiatives

To support operational communications EMNRD ECAM initiated monthly energy stakeholder meetings in 2024. These meetings bring together stakeholders from the energy sector including IOU's, co-ops, natural gas, pipelines as well as local emergency management, state agencies and tribal governments. These meetings focus on energy sector related topics, offer a platform for sharing information, and foster relationship building.

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 on its Preparing New Mexico Training Site. The following courses are hosted by the NM DHSEM Training and Exercise Unit, FEMA Emergency Management Institute (EMI), National Domestic Preparedness Consortium (NDPC), and National Disaster Preparedness Training Center (NDPTC) and are identified as addressing key aspects of energy sector planning.

Course Title	Provider	Course Description
G-191: Emergency Operations Center/Incident Command System Interface	NM DHSEM	This course will enable participants to develop an effective interface between Incident Command and the Emergency Operations Center (EOC) by applying Incident Command Systems (ICS) principles.
G-235: Emergency Planning	NM DHSEM	This course offers training on the fundamentals of the emergency planning process, including the rationale behind planning. It develops the capability for effective participation in the all-hazard emergency operations planning process to save lives, protect property and the environment threated by disaster.
G-271: Hazardous Weather and Flooding Preparedness	NM DHSEM	This course provides training for local and state emergency managers who respond to hazardous weather events and promotes partnership and coordination between the National Weather Service (NWS) and emergency managers. The course enhances the ability of emergency managers to recognize potentially hazardous weather and flooding situations to appropriately plan and coordinate effective responses.
G-291: Joint Information System/Center Planning for Tribal, State, and Local Public Information Officers	NM DHSEM	Designed for PIOs with experience in the field who will be working in a JIS/JIC, this course outlines the communications needed for different incidents and defines the role of the PIO within ICS.
G-311: Hazardous Materials Contingency Planning	NM DHSEM	This course is for emergency management personnel responsible for hazardous materials planning and coordination. It covers emergencies including transportation, use, storage, and disposal of hazardous materials. Emphasis is placed on interagency cooperation and the identification of technical assistance that is available.
NM IPPW: Integrated Preparedness Planning Workshop (IPPW)	NM DHSEM	The Integrated Preparedness Cycle is a continuous process of planning, organizing, equipping, training, exercising, and evaluating/improving to ensure the regular examination of ever-changing threats, hazards, and risks.
PER-252: Cybersecurity: Prevention, Deterrence, and Recovery	NM DHSEM	Cyberterrorism training with a focus on incident prevention, deterrence, and recovery.

Course Title	Provider	Course Description
AWR-331: Winter Weather Hazards: Science and Preparedness	NDPTC	An eight-hour awareness level course to provide emergency managers, first responders, and community members across all sectors with a basic understanding of the latest knowledge in winter weather science, forecasting, warning, and preparedness.
AWR-356: Community Planning for Disaster Recovery	NDPTC	An eight-hour awareness-level course that provides facilitated discussions on key concepts for disaster recovery planning, including benefits of pre-disaster planning, key elements, and the plan development process. It will prepare participants to initiate disaster recovery plans and participate in the long-term recovery planning process in their communities.
MGT-449: Community Based Planning for All-Hazard Threats in Tribal Communities	NDPTC	This course provides Tribal community participants with the knowledge, skills, and abilities necessary to effectively detect, respond to, manage, and mitigate all-hazard threats using a whole community approach.
E0103 - Planning: Emergency Operations	FEMA EMI	This course is designed to give basic concepts and planning steps to those in the emergency management field. It includes content from the Emergency Management Planning doctrine and steps to accomplish writing plans.
IS-271a: Anticipating Hazardous Weather and Community Risk	FEMA EMI	This course provides emergency managers and other decision makers with background information about weather, natural hazards, and preparedness.
IS-650: Building Partnerships with Tribal Communities	FEMA EMI	This course is designed to provide participants with basic knowledge to build effective partnerships with Tribal governments, and work in concert with Tribal governments to protect native people and property from all types of hazards.
IS-662: Improving Preparedness and Resilience through Public-Private Partnerships	FEMA EMI	This course describes how to establish and sustain public-private partnerships, as well as how to communicate and share resources in a partnership.